PROFESSIONAL DEVELOPMENT MODELS FOR SECONDARY CO-TEACHERS

A Record of Study

by

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ABSTRACT

Throughout the years, special education has changed and evolved to best meet the needs of students on IEPs and with diverse learning needs. Teachers are put at the forefront to help students be successful in the 21st century. One way to meet the various learning needs of students, schools have incorporated the co-teaching model. The co-teaching model involves two teachers, a special education teacher and a general education teacher. Co-teaching requires co-teachers to not only co-teach, but co-plan and co-assess. A strong relationship is a significant factor in successful co-teaching.

In this study, ELA and math teachers at a middle school were provided with a month-long professional development series. The professional development included direct instruction the most collaborative co-teaching models, including alternative teaching, parallel teaching, station teaching, and team teaching. The series was virtual and recorded, for teachers to watch on their own time, and throughout the month, implement the models. Teachers also took an online pre- and post-survey with questions surrounding their efficacy and comfortability around co-planning and co-teaching specific to the co-teaching models learned and included in the PD. By the end of the study, there was significant growth in the teacher's comfortability and efficacy in implementing a variety of the co-teaching models presented in the PD.

DEDICATION

This Record of Study is dedicated to my amazing husband, who has been my source of unconditional support and who gave me both advice and strength during the writing and research process. Thank you for your love and patience.

To my parents, who shared their words of encouragement and love as I worked on this study and throughout the entire doctorate program. To Mike and John, who I know have been encouraging me from above. To my extended family members, my grandparents, my in-laws, who continuously encouraged me throughout the years with emotional support.

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NOMENCLATURE

504 Plan   A plan for a child with disabilities to have certain accomodations

ELL   English Language Learners

IEP   Individual Education Plan

IDEA   Individuals with Disabilities Act

LRE   Least Restrictive Environment

NCLD   National Center for Learning Disabilities

PD   Professional Development

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CHAPTER I

THE CONTEXT

Opening Thoughts

In K-12 public schools in the United States, the number of students with disabilities has grown over 10%, with now 14% of students receiving special education services (National Center for Education Statistics, 2021). To best meet the needs of students receiving services, schools across the United States have implemented various supports, including one on one teaching, small group instruction, and co-teaching (Kilanowski-Press, 2010). A co-teaching model is one of the most common methods of meeting the needs of special education students (Pancsofar & Petroff, 2013). Although co-teaching has gained popularity, many schools do not provide a subsequent professional development program to prepare new math and English co-teachers. Special and general education teachers may find it overwhelming and difficult to know exactly what the best models of co-teaching are in a mainstream classroom (Bashan & Holsblat, 2012). During this process of discomfort and confusion, co-teaching teams may not be effective because they lack both the pedagogical knowledge for how to co-teach as well as how to best co-plan, co-teach, and co-assess. Therefore, it is germane that schools and administrators find ways to educate and prepare co-teaching teams before and during the school year to ensure an increase in teacher efficacy and student achievement. The purpose of this study is to provide co-teaching teams with a professional development series on best co-teaching practices to increase teacher self-efficacy.

National Context

  Special education in American public-school classrooms has historically looked much different than it does in present time, yet still remains to be an ever growing and changing topic of discussion in American education. Developments throughout the decades in special education are mainly due to the Public Law 94-142 being updated to mandate that states should create and implement certain policies and procedures that will ensure a free appropriate public education (FAPE) for children identified with disabilities (Hicks-Monroe, 2011). Public Law 94-142, also known as the Education for All Handicapped Children Act (Griffith-Sheriff et al., 1981), was initially introduced in the early 1970s and intended for general education classroom teachers to comply with Individual Education Plans (IEPs) for their diverse students. In a co-taught classroom, both general and special education students can receive quality education. In my ROS study, I hope to create a professional development program specific to co-teaching teams to ensure their own and eventually their students' success.

  As a result of the updated Public Law 94-142, which focused heavily on students receiving a free, appropriate education in the least restrictive environment, the name of the law changed to the IDEA Act (Hicks-Monroe, 2011). The IDEA Act, which was first introduced in 1975, is intended to mainstream both general and special education students (Yell, et al., 2006). Yet, the IDEA Act has been amended throughout the years. Specifically, in 1997, the IDEA Act was modified to increase where students with disabilities should be placed, specific to general education classrooms and that these students receive the same content instruction as their general education peers (Hanover

Research, 2012). Mainstreaming, or inclusion, is the mixing of both general and special education students in the same classroom in order to promote equity for all students (Kilanowski-Press, 2010, p. 43). Inclusion is especially germane for K-12 classrooms since roughly 20% of students with disabilities are learning and taught in American classrooms (National Center for Education Statistics, 2019). These statistics truly signify the growing needs students who are designated special education have and should be accommodated for.

To further meet the needs of students with special education services and ensure academic achievement to all American students, the No Child Left Behind Act (NCLB) was established in 2001 (Yell, et al., 2006). The NCLB Act places the pressure on educators to ensure academic achievement on state standardized assessments. And, as of 2015, as a result of the recent mandates, there has been a 5% increase in the number of students with disabilities that are receiving services in a general education classroom (Brendle, et al., 2017). Due to the increase of diverse student populations joining their peers in a mainstreamed classroom, teachers must also have the sufficient training and knowledge to best meet their learning needs.

In the United States, there is an increasing need for having co-teaching teams in an inclusive classroom (Friend, 2008; Hanover Research, 2012; Mastropieri et al., 2005). Co-teaching can best be defined as, "involving two or more teachers who plan and teach lessons, and who subsequently evaluate their teaching together" (Murphy & Beggs, 2006, p. 63). Although it holds a seemingly simplistic definition, co-teaching is far more complex than two teachers in a classroom. Co-teaching was introduced in the 1970s after

the IDEA Act was signed into law (Hanover Research, 2012). Although there is an increasing demand for this model of teaching, there is a lack of sufficient training and professional development for both pre-service, and in-service co-teaching teams (Brendle et al., 2017). There is further a lack of literature demonstrating any differences of co-teaching being implemented regardless of the discipline or content area. This data and history of co-teaching evokes an image of co-teachers not providing the best education for all students. Additionally, general education in a mainstream classroom requires specialized teachers in general classrooms. Yet, with the recent wide implementation of co-teaching, there is not enough paired support.

Still, general education teachers in all disciplines specifically are lacking the professional development necessary for how to co-teach effectively with their special education counterpart (Hudson et al., 2016; Lindeman & Magiera, 2014; Miller & Oh, 2013). Co-teaching teams can truly be effective and successful when there is a pair of professionals who plan a curriculum together to meet the diverse needs of all students, regardless of ability level (Lindeman & Magiera, 2014). A daily or year-long professional development model specific to co-teaching must be generated district-wide in K-12 American public schools, which can help co-teachers implement co-teaching models and improve their self-efficacy. Thus, through my ROS study, I hope to introduce the most germane aspects of what should be included in an on-going professional development model specific for co-teachers.

Situational Context

The charter school network I work for is Bright Future Academy, which is a tuition-free, public charter school. The names of the charter school network have been altered to protect the identity of the staff. There are 255 schools within the entire network in the United States. Bright Future Academy schools serve at-risk, minority students coming from low-socioeconomic areas of status. Specifically, the district I work in is Southern California Bright Future Academy, a regional charter school organization in southern California. In a charter school district in southern California, serving counties throughout southern California, each K-12 school campus aims to meet the needs of their students on IEPs in both math and English Language Arts class. There are 23 schools total in the southern California Bright Academy region. Out of those schools, there are twelve grades kindergarten through 4th, and five schools who serve grades 5-8.

Currently, at Bright Future Academy, there are Resource Specialist Provider (RSP) teachers, who act as the special education teacher in a co-taught classroom. All Bright Future Academy schools serve numerous students with disabilities and students who are eligible for IEPs. Additional supports for special education at Bright Future Academy include paraprofessionals and school psychologists. Paraprofessionals are assigned a small group of three to five students that they closely monitor and work with. These paraprofessionals are given these specific students because these students tend to have both an IEP and a 504 plan, with high learning and behavior needs. These special education efforts are intended to increase student reading and math achievement scores on the iReady and STAR tests.

In the 2020-2021 school year, in co-taught math, 13% of students receiving special education services grew in their iReady test scores, while 10% of general education students grew (Data Kastle, 2021). iReady is a diagnostic math test students take quarterly throughout the year and reflects a students' grade level placement in math. Also, students take the STAR test quarterly to assess their instructional grade level (IRL) in reading. This school year, students on IEPs grew an average of 1.5 in their IRL on the last STAR test taken in February of 2021 (Data Kastle, 2021). As a school, based on the STAR data, students in grades 5-8 all average out to be at a 4th grade reading level. As a region, the average IRL at each school is a 3.5 (Data Kastle, 2021). This illustrates the need for an improvement in special education and how teachers are trained.

As a result of new leadership in the special education department at Bright Future Academy, special education is taking a new progressive direction. Previously, there were no clear systems in place to meet the needs of co-teaching teams. The special education department is creating a plan for how to address co-teaching in the 2021-2022 school year. The co-teaching specific to Bright Future Academy has not truly existed due to the RSP teachers using a pull-out model rather than collaboratively teaching in the same classroom. Such programs that already exist in special education for Bright Future Academy include a resource teacher who will pull out their caseload of students who have an IEP. Now, RSP teachers and their ELA or math counterpart are in a co-teaching model.

The Problem

In the region of Bright Future Academy charter schools, there is not an explicit model of what co-teachers need to do. Due to the introduction of co-teaching as a collaborative team in 2019-2020, there are still various gaps in preparing co-teachers for the upcoming school year. At the beginning of the school year in 2021, there is a brief presentation for co-teachers and paraprofessionals. This presentation explains the different co-teaching models, and the expectations for co-planning, co-teaching, and co-assessing. Unfortunately, this is the only presentation provided specific to co-teachers. If co-teachers were able to receive ongoing collaborative opportunities, co-teaching practices could be improved and therefore promote co-teacher efficacy and comfortability in utilizing the co-teaching structures.

Relevant History of the Problem

The co-teaching structures within the Bright Future Academy region are new. The goal of co-teaching at Bright Future Academy is to adapt and adjust teaching by implementing the main five co-teaching structures while using the strengths of both general and special education teachers. The five models include parallel teaching (PT), alternative teaching (AT), station teaching (ST), and team teaching (TT). Creators of the co-teaching models and protocols established RSP teachers and paraprofessionals concurrently in the classroom in order to improve academic performance for students with disabilities, as well as for at-risk students. At Bright Future Academy, during the 2019-2020 school year, - four years after the implementation process of co-teaching began - 70% of students performed at grade level at the elementary level, and 72% of students

performed at the secondary level compared to their general education peers. This impressive growth truly illustrates the effectiveness of the new models of special education at each campus throughout southern California.

Specifically, aspects of the co-teaching collaboration time on the Bright Future Academy campus are still in progress. For example, such characteristics include weekly co-planning meetings with co-teachers, less pulling out of students solely with IEPs, and the inclusion of a paraprofessional. Although these characteristics model the importance of inclusion in secondary mainstream classrooms at Bright Future Academy, there is no clear exemplar document or resource for co-teaching teams to reference. Therefore, co-teaching teams must have a criterion for success, or a rubric for their co-planning meetings, in order to effectively manage and utilize their time.

The primary goal of co-teaching currently within the Bright Future Academy region is to encourage teacher collaboration. When teachers collaborate on how to best utilize each co-teaching model, this results in greater student participation and engagement (Lindeman & Magiera, 2014). This design encourages increased instructional options for all students (Hudson et al., 2016), while concurrently allowing teachers to sample out innovative teaching techniques. The model also allows co-teachers to cultivate relationships with one another. However, not all co-teaching teams know how to best adopt the four co-teaching models. Thus, a professional development series must be established.

Another consideration of the co-teaching process that makes it appealing is that each co-teacher can utilize their respective expertise. In terms of access for all students

in a mainstream classroom, each teacher brings in their own funds of knowledge to best service their students. Funds of knowledge are the "cultural and cognitive resources that [teachers]…bring from their…community backgrounds" (Pella, 2012, p 60). For teachers to be eligible to co-teach, each must be respectively certified in either their content area, or in special education. However, due to the lack of training co-teaching teams receive throughout the course of the school year, there is difficulty in effectively meeting the needs of all students while utilizing various co-teaching models, so teachers are not able to truly bring their funds of knowledge to the classroom. Overall, in this research study, I intend to discover what co-teaching teams need to be successful to best identify aspects of a co-teaching professional development cycle.

Significance of the Problem

As general education teachers at Bright Future Academy are hired in their respective content area to co-teach with their special education counterpart, they may struggle with truly understanding their own roles in the co-teaching relationship. New co-teachers receive a one-time special education training, which a small portion of the presentation is dedicated to co-teaching. For example, in the presentation, there are slides that define the co-teaching structures, but with no other context or examples. This challenge has the potential to hinder student academic success and teacher efficacy (Hurd & Weilbacher, 2018; Weilbacher, & Tilford, 2015). First, experienced general and special education teachers do not receive an ongoing training for professional development (PD) on co-teaching. Also, during their first year as co-teachers, there is not a required mentor or coach to specifically guide the team on their progress. This lack

of mentoring can result in confusion of co-teacher roles and responsibilities, and therefore a decrease in student achievement in a mainstream classroom. In addition, the co-teaching teams do not have a clear plan for success for their meeting times together. For example, what the co-planning time should look like versus their co-teaching and co-assessing time together. Finally, co-teachers are expected to meet the diverse learning needs of their students on IEPs and 504 plans. Additionally, the co-teachers are expected to have sufficient knowledge on how to modify and accommodate for the specific individual needs.

Due to the lack of training, mentoring, and other collaborative support, most co-teachers have low efficacy and quality of co-teaching. The insufficient training for co-teachers is impeding their knowledge and understanding of how co-teaching should be enacted. The existing evidence demonstrating the low-quality of co-teaching is that teams on Bright Future Academy's campus do not utilize any of the collaborative co-teaching models. There is also a lack of research on the effectiveness of a secondary professional development structure or series specific to co-teaching teams, yet researchers illustrate that there is an increase in co-teaching on secondary United States school campuses because of the awareness towards differentiated curricula and instruction in which there is an expectation that teachers are skilled to meet these student needs. Thus, I am undertaking this study to address the gap.

Research Questions

The purpose of this study is to identify aspects of what should be included in a professional development model specific to co-teachers. Research suggests that some

major categories associated with this problem are a lack of training for administration, unclear expectations for communication and relationships between co-teachers, unclear expectations for teacher roles co-teaching teams, and not enough training on the pedagogical knowledge needed to effectively co-teach. To develop the aspects of a new structure of a co-teaching training protocol that will increase pedagogical knowledge of middle school English Language Arts co-teachers, I am seeking to answer three research questions:

1. How does the ongoing training relate to a co-teacher's self-efficacy?

    a. How does the efficacy vary by the model that is being implemented?

2. What pedagogical knowledge do the teachers perceive made the biggest influences in their classrooms?

    a. What structure were they most comfortable using?

    b. What do they need support implementing?

    c. How does the comfort level and need vary by discipline?

    d. How does the pedagogical knowledge from the training relate to comfortability in co-planning?

Personal Context

I believe that all teachers, both general and special education teachers, deserve the opportunities to grow as educators in their appropriate contexts. With the ever-changing mandates and laws pertaining to special education, teachers are required to be as creative as ever in how they differentiate and teach lessons. For students in an all inclusive classroom to be academically successful, teachers must have sufficient

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preparation and training in order to effectively carry out their roles and responsibilities. Specifically, in order for co-teachers to properly co-plan, co-teach and co-assess, they must be trained on the various co-teaching models and techniques. I see these issues of teachers needing background education on co-teaching being reflected at the national level, which is problematic for the future co-teachers of the United States.

Researcher's Roles and Personal Histories

My education journey began in 2009, when I selected my major of English Secondary Education at Northern Arizona University in Flagstaff, Arizona. Throughout these years, I did not receive any training specific to special education, nor on co-teaching. Upon the completion of my undergraduate degree, I immediately began teaching high school at a Title I school in the West Valley of Phoenix, Arizona.

In the following two years, I had the opportunity to be a co-teacher in a sophomore English mainstreamed classroom. I was exposed to what teaching was like with another full-time special educator in the classroom and the challenges that came along with having students with many diverse abilities and backgrounds. Addressing the needs of both students on Individual Education Plans and 504 Behavioral Plans was not something I was taught in my journey as a pre-service teacher, therefore, I noticed certain gaps in my instruction as a co-teacher that could have been resolved with proper education and training.

In my second year as a co-teacher, I was placed with a new special education teacher due to the previous teacher moving. This experience presented further challenges with building a new co-teaching relationship, molding out new routines and procedures,

as these aspects of co-teaching take time and finesse to develop. Further, as a co-teaching team, we both witnessed varying levels of training and professional development to help us grow as educators, and specifically, as co-teachers. Ultimately, we did not feel the appreciation or support other teachers were receiving. Currently, I am an 8th grade English Language Arts co-teacher in a virtual setting and have an intimate connection to co-teaching. It is challenging work to attempt to utilize the co-teaching models in an online environment, therefore, I am beginning to see more gaps in training for K-12 co-teaching teams.

Journey to the Problem

The lack of training and professional development specific to co-teachers has been an issue I have seen throughout my experiences as both a general education teacher and a co-teacher. I have been teaching for seven years and this has been a problem every year. Typically, I have experienced a brief summer professional development session for co-teachers at the public school level. This week-long session is intended for co-teachers to have the time to co-plan in preparation for co-teaching and co-assessing. Although this time is germane for co-teaching teams, this is the only training that is offered for co-teachers. In a virtual setting, I have only received an optional one-day training, which was a brief introduction to the co-teaching models, led by an administrator who lacked co-teaching experience. In my first years of co-teaching, I consistently questioned my techniques, as I did not have the sufficient support, nor training, from the district.

Additionally, throughout my seven years as a teacher, I have had the opportunity to discuss and observe co-teaching with other co-teachers. These teachers have

expressed to me their desire to have more on-going training so they can not only be successful educators but increase their efficacy as a teacher. Additionally, these co-teachers expressed how they felt forced to be in the position, and that the co-teaching position was one that had a stigma. All of these factors resulted in low self-efficacy as a co-teacher, which further hindered my confidence and eventual success.

Significant Stakeholders

The lack of proper training for co-teachers throughout a school year is a significant issue I have noticed in the two school districts I have worked at. At the school district in Arizona, as well as the charter school system in which I currently work, I have observed a lack of professional development dedicated to co-teachers. Professional development for co-teachers has always been important for me because these sessions can build confidence in teachers. When teachers have the opportunities to learn and collaborate with their colleagues, there is a positive culture created, especially around co-teaching. Professional development has always been important to the stakeholders at my charter school network as well, especially for administrators, co-teachers, and ultimately, students in a co-taught classroom. Overall, professional development specific to co-teaching teams is at the heart of my ROS study.

The eight co-teaching teams at Bright Future Academy are the most significant stakeholders. Both the math and ELA co-teaching teams are equally important in this research procedure. These co-teaching teams will provide me with qualitative data, including interviews and surveys, which will help inform my research of what should be included in a co-teaching PD series. I intend to spend the majority of my time gathering

data on what the co-teaching teams feel that they need in a PD series to be successful co-teachers so that I can address these gaps in the creation of the PD. These teachers have willingly accepted to be a part of the action research process, and their input will be extremely valuable and insightful.

Other stakeholders include school leaders and administrators, specifically our school's principal and the Special Education Director of the Bright Future Academy region. Having school leader and administrator knowledge of special education, co-teaching, and generating professional development sessions will help me create the co-teaching PD. Lastly, students are other significant stakeholders in this research study. The purpose of having an effective PD series specific to co-teaching is for co-teachers to master their techniques to best teach and serve our student population. Once students are academically successful, this will be proof that the PD series is effective. Thus, the results of this research study will greatly influence the achievements and learning of students.

Important Terms

Collaboration - In reference to the dynamic between general and special education teachers in co-taught classrooms, true co-teacher collaboration takes place when "the general education teacher is the lead teacher due to their grade level content knowledge and the special education teacher is perceived as the support teacher" (Brendle et al., 2017, p. 545).

Co-Teaching - "the partnering of a general education teacher and a special education teacher or another specialist for the purpose of jointly delivering instruction to a diverse

group of students, including those with disabilities or other special needs, in a general

education setting and in a way that flexibly and deliberately meets their learning needs"

(Friend et al., 2010, p. 11). This term can also include the collaboration between both

teachers which includes "co-planning, co-teaching, and co-assessing with two or more

teachers coming from different subject areas" (Hurd & Weilbacher, 2018, p. 2).

Efficacy - According to Burstein et al., (2004), a teacher's efficacy is how they believe

in their performance as an educator. When "teachers have reported that they have

insufficient skills and training to adequately serve students with special needs" (p. 105) it

results in low self-efficacy. These beliefs can "influence their teaching and their

students' motivation and behavior" (Krammer et al., 2018, p. 466).

Mainstream Classroom - The partnership between regular classroom teachers and special

educators that "involves including students with disabilities in the activities of the

regular education classroom" (Weilbacher & Tilford, 2015).

Models of Co-Teaching - Also known as the co-teaching formats, include the following:

One teach, one observe; one teach, one assist; station teaching; parallel teaching;

alternative teaching; team teaching (Weilbacher & Tilford, 2015).

Professional Development - "Teacher learning that is grounded in day-to-day teaching

practice and is designed to enhance teachers' content-specific instructional practices

with the intent of improving student learning" (Shaffer & Thomas-Brown, 2015, p. 118).

Special Education - In a co-taught classroom setting, the role of special education is that

"special educators may push in to the general education classroom for a predetermined

amount of time to assist students in attainment of goals and objectives associated with their Individualized Education Program (IEP)" (Kilanowski-Press et al., 2010, p. 44).

Closing Thoughts

Special education in the 21st century in American schools looks much different than it did fifty years ago. Due to the recent implementation of co-teaching in public schools, there is a high need to prepare co-teachers for them to know how to collaborate and teach together to ensure student success. Preparation and training for co-teachers is a significant factor not only in student academic achievement, but in a teacher's self-efficacy.

In this study, I will discover and investigate the experiences of four ELA co-teaching teams during one quarter teaching together during my own implementation of a co-teaching professional development series. I will establish the training and professional development series as a means of support to encourage collaboration among the co-teaching teams, using qualitative data-mainly from interviews and surveys-to evaluate the effectiveness of the professional development. In Chapter 2, I assessed the history of co-teaching and previous training models that have been done to improve the effectiveness of co-teaching before discussing the Solutions and methods in Chapter 3, I report the results of the analysis and results in Chapter 4, and then derive conclusions in Chapter 5.

CHAPTER II LITERATURE REVIEW

Introduction

The world of special education has had numerous adjustments in the 21st century, especially with the increase in the use of co-teaching models in elementary, secondary, and even post-secondary educational settings. Co-teaching was specifically designed to meet the needs of students on IEPs in a least restrictive environment (LRE), also known as an environment where both general and special education students are taught within the same classroom, as to not be restrictive as to what students are in the classroom (Kilanowski-Press, et al., 2010; Oh et al., 2017), resulting in an inclusive teaching model. The model of co-teaching has become more popular over the years due to governmental mandates, such as the Individuals with Disabilities Act (IDEA), requiring school districts to place students with disabilities with students who are non-disabled in the same classroom and provide access to the general education curriculum (Brendle et al., 2017; Chitiyo, 2017; Pancsofar & Petroff, 2013; Ploessl et al., 2010). As a result of the mandates, school districts transitioned into less pull-out situations in classrooms, where the students on Individual Education Plans (IEPs) leave the classroom to receive individual instruction from a special education teacher, and more inclusive practices, such as the co-teaching structure.

In this literature review, I will begin with discussing the background on co-teaching and how the model came to be a popular method of inclusion. In the next section, I define the various structures, or models, for co-teaching. Next, I describe the types of PD and training that is provided to co-teachers throughout the school year. This

section also explains the lack of training that is provided to co-teachers, which is deemed as problematic. Thereafter, I disclose what components have been, and should be included, in a PD specific to co-teachers. I further discuss a germane aspect of productive co-teaching: the relationship between the two teachers. Following the previous section, I point out the benefits of having a co-teaching training. The benefits discussed encompass not only co-teachers, but other staff and the school in its entirety. Succeeding the previous section, I illustrate how PD can aid and effect a co-teacher's efficacy and confidence. Following, I expand upon the roles of each individual teacher and how those roles are significant to the team's success. Next, I shed light on the importance of communication among co-teachers, and how this piece can play a role in what is included in PD. Subsequently, I expound upon how having a coach for co-teaching teams can act as an additional support for co-teachers in their success and increase their efficacy. Afterwards, I demonstrate the importance of teacher content knowledge in a co-taught classroom and the benefits of how each teacher brings their own set of values and experiences. Then, I signify how classroom management is a significant piece of not only what should be taught in a PD series, but how co-teachers must have strong management practices. Finally, I discuss the implications of the lack of literature on co-teaching PD, and the gaps found in literature, before closing with a conclusion.

Background on Co-Teaching

Approaches to special education vary from state to district, but the need to address students with disabilities is germane. There are many stakeholders involved in

special education, from administration, to families, to teachers. Additionally, the National Center for Learning Disabilities (NCLD) ensured students who have disabilities will have equal access to a general education classroom curriculum "students with disabilities [have] access to the general education curriculum (Brendle et al., 2017). One of the research-based strategies the NCLD identified is co-teaching. In a co-taught model, each teacher's responsibility is to demonstrate to students that there are numerous paths to achieve mastery of content with differentiation of a curriculum which can be done utilizing the co-teaching model (Miller & Oh, 2013). This model exemplifies the idea that all teachers are responsible for incorporating differentiated instruction into their classrooms.

The co-teaching model is not a requirement for school districts to implement. Policymakers for the IDEA Act did not endorse the co-teaching model exclusively, however, many school districts around the United States have (DeMartino & Specht, 2018). Additionally, the IDEA Act did not supply methods for how to teach students in their least restrictive environment, so co-teaching models have been created out of necessity of the special education student population. The implementation of co-teaching models depends on the idea that there is a special education mandate for students in the classroom that is considered the least restrictive environment, therefore, co-teaching is not only a solution, but has its own philosophies attached (Friend et al., 2010). Co-teaching is not simply having two adults in the classroom, but rather a collaborative effort to meet the diverse needs of all students, both at-risk and general education. Also, co-teaching is the combination of two teachers, one special education certified, and the

other certified in the specific co-taught area, typically in English or math at the secondary level. Alternatively, true co-teaching is not intended to look like having a paraprofessional in the classroom with a general education teacher. This is because they are not qualified to satisfy obligations solely for an expert such as a special education teacher (Conderman & Liberty, 2018). Both the general education teacher and special education teacher must be trained and qualified to teach in their respective content areas of expertise. In a co-taught classroom, the special education teacher is being utilized for their knowledge of instructional strategies to best meet the needs of students on IEPs, not as an aide. The role of the general education teacher is then to increase their own teaching pedagogy especially when examining the various learning needs of their students with disabilities when planning their curriculum to create a sense of parity in a co-taught relationship (DeMartino & Specht, 2018). Thus, co-teaching has increased in its use among both general and special education teachers alike, with various approaches.

Co-Teaching Models

In a co-taught classroom, there are multiple models or strategies that can be utilized with two teachers. The purpose of the various co-teaching models is to avoid the method of removing special education students from class, or "pulling them out" because that can negatively impact a students' efficacy. Also, pulling out students receiving services is also against the mandate of the IDEA Act because students must be included in the mainstream classroom. The models include "leading and assisting, station teaching, parallel teaching, alternative teaching, and team teaching" (Hang &

Rabren, 2009, p. 259). Co-teaching models have the ability to be adjusted and modified,

based on the experience and training each co-teacher has. The first co-teaching model,

leading and assisting, also known as one teach, one assist, is when one teacher assumes

primary instructional responsibility, and the other helps monitor students' behavior

(Hurd & Weilbacher, 2018). Station teaching is when each teacher is assigned to a small

group where students can work on particular assignments in three to four stations around

the classroom. Parallel teaching is when the class is split into two different groups.

Alternative teaching, like parallel teaching is when each teacher is teaching the same

content but using different methods of instruction. Finally, team teaching, which some

would argue is the least implemented due to the heavy amount of co-planning it takes, is

when the co-teachers truly teach as a team, with an equal amount of instruction time. In

a case study, Mastropieri et al. (2005) discovered areas of co-teaching where co-teachers

were successful as well as where they found challenges. The case study resulted in the

finding that both teachers must practice these co-teaching behaviors to initiate success in

their classroom (Mastropieri et al., 2005). In classrooms that are co-taught, students are

exposed to a variety of teaching styles and approaches, which results in both teacher and

student accomplishments. As a result of the successful implementation of the co-

teaching structures, students can be academically successful. Because of the increase in

the instructional opportunities and options students with special needs have, students in a

co-taught classroom can be more academically prosperous than in a single teacher

classroom (Mastropieri et al., 2005). Thus, it is pertinent that successful co-teaching

teams receive training and professional development on how to effectively co-teach.

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Co-Teaching Training

Due to the legal mandates for inclusion of both special and general education students in one classroom, there is a high need and demand for highly qualified co-teachers. Co-teaching is most successful with training and professional development (PD) as early as the beginning years as a pre-service teacher in an education program in order to develop and carry out differentiation strategies and techniques. In a qualitative study by Hurd & Weilbacher (2018), through interviews and focus groups, the researchers found a gap between what universities are doing to prepare co-teachers. The authors learned that there is an enhanced consideration to instruction that is differentiated that new teachers should be capable in meeting the learning needs of students, which results in the necessity of training for co-teachers (Hurd & Weilbacher, 2018). There are many pedagogies and practices that are vital in teaching and implementing effective lessons in a co-taught classroom (Burstein et al., 2004; Hudson et al., 2016; Shaffer & Thomas-Brown, 2015). Thus, in a co-teaching setting, there are various practices that can be learned and applied whereas, in a singular taught classroom, there may be less opportunities to use a variety of differentiation models that co-teaching lends itself to. In a qualitative descriptive case study by Brendle et al. (2017), the researchers aimed to discover what co-teaching models were most frequently used in elementary classrooms. Further, the authors wanted to determine how much time is spent on co-planning, co-instructing, and co-assessing. A major finding was in districts, there is a need for more training and information on the various models and structures for co-teaching, which could improve instruction in classrooms that are co-taught, or even

classrooms with a paraprofessional or supplemental teacher (Brendle et al., 2017). All stakeholders within the school should have common knowledge of co-teaching, which can easily be taught within a yearly training. The increase of and the improvement upon co-teaching training will result in the success of both teachers and students in an inclusive classroom environment.

The opportunities for student and teacher success in a co-taught classroom are vast, yet there is inadequate training for teachers and students to experience this accomplishment. Unfortunately, co-teachers and pre-service teachers do not have access to professional development and training for how to effectively co-teach (Arndt & Liles, 2010; Bashan & Holsblat, 2012; Brendle et al., 2017; Chitiyo, 2017; Friend et al., 2010). Both general and special education teachers are missing educational opportunities to learn how to effectively differentiate both their curriculum and instruction for their students in their classrooms. The lack of sufficient training on co-teaching is problematic because there is an increase of inclusivity in classrooms, so teachers should be properly trained in such techniques, like co-teaching (Chitiyo, 2017). In the qualitative study by Chitiyo (2017), the author claims there is not adequate training for co-teachers because there is a lack of research on effective co-teaching. In the study, through interviews and surveys, Chitoyo (2017) explains how teachers expressed a lack of co-teaching skills, which may be due to the practice of co-teaching still expanding popularity and implementation. Mandatory co-teaching courses in pre-service teaching programs are not offered in all universities, and, if there is a co-teaching course, it is usually offered only for special education teachers. Instead, training, and professional development

should be equally provided for both the general and special education teacher. In a mixed-methods study, Miller & Oh (2013) aimed to gain an understanding of how both students and co-teachers saw themselves in a co-taught classroom. Further, the authors intended to examine the effects of a co-teaching PD on four different pairs of co-teaching teams. Through pre and post surveys, the authors noted that when there is an unequal amount of training on how to co-teach and assess students on IEPs, confusion and conflict can arise (Miller & Oh, 2013). Such conflicts that can arise include each teacher not truly knowing their role, so they may cross certain boundaries of teaching that could make their counterpart uncomfortable. This conflict can be a result of educators objectifying the idea of co-teaching because they do not want to share their classroom and other duties (Chitoyo, 2017). The general and special education teacher must both be open and willing to teach together, and can have greater clarification of what they are responsible for in a PD or training. A systematic and transparent co-teaching training program must exist at the district level to alleviate confusion of co-teacher roles and responsibilities.

Elements of a Co-Teaching PD

There are numerous factors in what should be included in a co-teaching professional development session. When planning an effective co-teaching professional development session, the district must create consistency around co-teaching, such as vocabulary and ideas (Lindeman & Magiera, 2014). This consistency in what co-teaching is defined as and what it looks like will alleviate confusion among the special and general education teachers. The consistency in the naming conventions can also help

teachers better understand what co-teaching means and what it is intended to look like in action. Unfortunately, the amount of experience and time teaching at a school can impact and influence how a teacher views co-teaching (Hurd & Weilbacher, 2018). Further, the co-teaching PD sessions must include how teachers can utilize materials and resources for differentiation. This may look like teachers watching an exemplar team using best practices and instructional methodologies in a co-taught class. Additionally, in a weekly training session for co-teachers, they should be provided with techniques for how to make variations to instructor curriculum materials and (Gokbulut et al., 2020). All too often, co-teachers are given materials or presented with the models of co-teaching instruction, yet they are not adequately given the skills for how to implement such techniques. A result of co-teachers having the ability to see how co-teaching is done will give each teacher the context for how to implement the actions in their own inclusive classroom. Another skill to include in a session are the opportunities to apply research-proven structures of co-teaching all while co-planning, co-teaching, and co-assessing as a team, which are the three main action steps co-teachers do jointly (Brendle et al., 2017). Co-planning, co-instructing, and co-assessing can all look vastly different, especially if each teacher plans or assesses differently. The general educator may have different experiences and training on assessing students in a general education classroom versus their counterpart special education teacher, who may be used to making modifications and accommodations for assessments. Therefore, there must be explicit training on what co-planning, co-instructing, and co-assessing looks like.

General education teachers need appropriate training on strategies specific for students with intellectual learning disabilities. Although general education teachers may receive instruction on strategies for differentiation specific to how to modify instruction and accommodate for students on IEPs, most of the techniques used with language learners are comparable to those techniques applied to students with special needs, yet, those techniques are not always carried out in the most effective manner (Miller & Oh, 2013). Strategies, such as graphic organizers and progress monitoring, may not be common knowledge for each teacher and can certainly be utilized differently for a student with, and without an IEP. In a case study by Burstein et al. (2004), the authors describe an examination of a three-year project that focused on how higher education schools implement inclusive practices. The authors examine the models used by each institution and their progress towards higher use of inclusive practices. A main result from this study was that each school had inclusive practices, but the practices varied by location. Therefore, weekly workshops or conferences state or district wide that provide specific strategies for how to address students with disabilities in a mainstream classroom can assist general education teachers on how to differentiate (Burstein et al., 2004). Furthermore, general education teachers are provided with some strategies to meet the needs of diverse students, yet not all of these strategies are specifically appropriate for students on IEPs, which can also create ambiguity for general education teachers.

Another important aspect to be included in a co-teaching PD must include the co-assessing aspect of co-teaching and how to give assessments. Each co-teacher needs to

address how they define and examine assessments, not just considering tests and quizzes. In the process of joint planning, teachers can have these necessary discussions on not only what assessments will look like, but how feedback will be given. In a training, teachers should be shown how to have an appropriate and effective discussion of the standard being taught and discuss explicitly how the standard will be assessed in a healthy conversation (Howard & Potts, 2009). Each teacher, both general and special education, has a vital role in how to assess student work, depending on a students' accommodations. A joint rubric can be taught and provided at a training for teams to adjust when grading assessments. However, both special education teachers and general education teachers are trained differently on how to assess students (Miller & Oh, 2013). This issue of not being consistent with how to give assessments in an inclusive classroom can easily be resolved by having a PD session on each teacher's role in giving assessments. Teacher roles can be discussed through healthy communication and collaboration.

The Co-Teaching Relationship

Aside from pre-service programs teaching special education strategies and pedagogies, there must be attention paid to how to teach communication and collaboration. Moreover, there has not been much consideration towards the relationship between the general and special education classes in pre-service university curricula (Arndt & Liles, 2010). The co-teaching relationship requires time for each teacher to get to know their colleague in both a personal and professional manner. Another key to successful collaboration is that both teachers establish clear rules and procedures for the

community of students in their mainstreamed classroom (Lindeman & Magiera, 2014). In the qualitative study conducted by Lindeman & Magiera (2014), the researchers found that there must be a co-teaching model to support all students, yet there was a lack of PD at their school site. The authors recognize the key to successful co-teaching is when co-teachers co-plan and collaborate, as well as attending PD together. When co-teachers both attend the PD sessions together, they can discuss expectations and therefore stay consistent during instruction. When the team is at an appropriate place to have healthy communication, co-teachers can provide one another with feedback on each teacher's practices to improve their practices. Whether the co-teaching team is teaching each class all day together, or the special education teacher only co-teaches one class, the team must have a healthy relationship. This relationship can only be truly healthy when each teacher understands their part in the relationship itself.

A significant aspect of having a healthy co-teaching relationship is the understanding of each teacher's role. Co-teaching is not simply two adults in a classroom together, rather, each teacher has their own respective role to carry out daily. In some co-teaching studies, many co-teachers and their students report concerns and confusions about their respective role in the classroom (Murphy & Beggs, 2006). Also, co-teachers may not know their role, then begin comparing their own teaching techniques to their colleague, which can result in increased anger and a lack of efficacy. Unfortunately, and all too often, the special education teachers feel that their role as a co-teacher is to be a resource only to the special education students, and that they do not have much stake in lesson creation, yet general education teachers prefer for the co-

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instruction part of teaching to be their role (Brendle et al., 2017). General education teachers have expressed that their classroom is their space, not that of the special education teacher. In a true co-teaching setting, each teacher plays an equal part in the co-teaching process, and each role should have strengths that are utilized. The unequal role assignments can cause complications on how successful the co-teaching is. When each teacher understands their role, and has equal access to their role, they can both experience the success.

The Effects of Co-Teaching Training

Further, co-teaching professional development opportunities should not simply take place in the summer; rather, there must be ongoing professional development opportunities for co-teaching teams to both be a part of. There must be extra resources post the PD sessions to best support the co-teaching models being carried out (Miller & Oh, 2013). These types of supports can manifest in various forms, such as a quick daily PD for teams, ongoing coaching, or observations with feedback for the team. Instructional coaching has proven to create academic achievement for students and teachers, and can be done with a co-teaching team. When a coach is actively engaged in a co-teacher's development, they can direct the instructional decisions as a co-teaching team, which can drive student success (Abbott et al., 2017). The coach can act as a mentor for the co-teaching team, and help the team create goals and objectives for both the teacher's and student's success. When there are clear goals in place for the co-teachers, there can then be measurable outcomes to be assessed by the team. Additionally, the coach and teachers can identify classroom trends together across

various data sources to also drive their instruction and be successful as co-teachers. There are concerns that there are not many opportunities for ongoing training for co-teaching teams, specifically with the instruction on co-teaching strategies (Brendle et al., 2017). The effect of having a concurrent PD for co-teachers is an increase in an understanding of each teacher's role, a safe place to discuss and plan, and the opportunity to learn new teaching techniques specific to the co-teaching model.

Ongoing professional development is essential not only for co-teaching teams, but for administrators and other special education staff members as well. However, many districts do not offer professional development to make the co-teaching partnerships successful (Burstein et al., 2004; Oh et al., 2017; Ploessl et al., 2010). In order for co-teaching teams to be successful and be evaluated effectively, the training and preparation of co-teaching pedagogy for administrators is significant in both the teachers' and students' success. In an article by Friend et al. (2010), the authors wanted to normalize the structure of co-teaching, as well as to gain a deeper understanding on what makes effective co-teaching. Staff members, such as principals and other leadership members, should not lead any PD sessions without educating themselves of what co-teaching is and should look like in an inclusive classroom (Friend et al., 2010). Some school administrators have not had the co-teaching training themselves, so they do not fully acknowledge how to effectively support the co-teachers on staff (Faraclas, 2018). This lack of knowledge can result in confusion of roles and responsibilities for administrative support for co-teaching teams. A training for administration on co-teaching can include how they can learn the demands of a co-taught classroom, and to

best address the individual needs of each co-teaching team. Administration should allow teachers to volunteer to co-teach, because those who do, indicated they had better perspectives versus teachers who were mandated to co-teach, which sets up the team for failure (Mastropieri et al., 2005). Administrators should be aware that maintaining the co-teaching teams rather than rotating the special education teachers each year is significant to continuing a strong co-teaching relationship and rapport.

When there is a strong and positive culture for professional improvement, teachers may have more motivation to perform well and be successful educators. Further, a culture of professional growth must be established on the school campus with an administration that supports staff who participate in co-teaching PD programs (Weilbacher & Tilford, 2015). When teachers see their administrators attending conferences and training to best meet the diverse needs of their co-teaching teams, efficacy can increase and therefore enhance the success of the team. This may look like administrators attending trainings with their co-teaching teams so that they can learn the needs of the students and better identify how to be a support system (Nierengarten, 2013). In an article by Nierengarten (2013), the author offers and provides twenty ways to support co-teachers. Some significant ways to provide support include administration knowing and understanding what effective co-teaching is, and what it should look like. Instead of feeling like co-teaching teams only have each other, administration also can have the responsibility to assist teams as a result of the PD they receive. Therefore, the cultivation of an inclusive school culture is important for the accomplishment of a co-teaching team.

As a result of the increased buy-in from administration, new co-teaching staff members will feel more supported and valued. Also, when co-teachers are given time from administration to co-plan and co-assess, a positive culture around both co-teaching and data analysis can be cultivated. Not only is time with each other vital for a successful co-teaching team but having the ability to collaborate with other co-teachers to share best practices could be a support from administration. Overall, co-teacher PD is vital for both teachers and administrators to promote academic achievement and an increase in teacher efficacy and confidence.

Professional Development to Build Self-Efficacy

There are numerous opportunities for success in co-teaching. First, co-teaching has the potential to build a teacher's confidence and self-efficacy. Self-efficacy can be defined as a "belief in one's ability to accomplish a task…[and] is related to confidence and can affect motivation and learning experiences" (Hudson et al., 2016; Krammer et al., 2018; Nierengarten, 2013). Specifically, preservice teachers deserve to have the opportunity to increase and build on their efficacy as teachers. As a result of increased efficacy, educators can be more effective in promoting student academic achievement using co-teaching strategies and models. The strategies that are discussed and taught in a professional development training can either assist or hinder a teacher's efficacy. As a result of a lack of training in co-teaching, there can be conflicts between the teachers, especially if there is confusion on certain instructional responsibilities (Burstein et al., 2004; Chitiyo, 2017; Oh et al., 2017; Ploessl et al., 2010; Sileo, 2011). Additionally, a sense of confusion and frustration results from the confusion, which directly hinders a

teacher's efficacy. In order for teachers to have a successful partnership and avoid burnout and attrition, they must have the chance to learn with each other and understand each other's teaching styles.

A teacher's low self-efficacy can truly damage student success as well as the culture of the classroom environment. Although much research has reported that there is higher performance on report cards and attendance for students with disabilities in a class with co-teachers, it truly depends on the effectiveness of the co-teaching duo (Chitiyo, 2017). The more increased a teacher's efficacy, the efficacy is also reflected on their students. For example, students have reported increased confidence after having being in a co-taught class, illustrating the positive impact co-teaching can have on students (Arndt & Liles, 2010). When a teacher has confidence in their own teaching styles, this confidence can reflect on student academic achievement.

Alternatively, when there is a lack of communication and efficacy with a co-taught team, there can be an increase of poor student behavior. When students witness their teachers not being fully prepared to teach in their respective role, they may see that as an opportunity to misbehave. For example, there can be an increase in poor student behavior because of the unclear role of each co-teacher (Hang & Rabren, 2009). Each teacher must be aware of their responsibilities when it comes to classroom management. Ultimately, each teacher should have equal responsibility in managing the classroom to alleviate confusion among students, and students playing "favorites" with one teacher over the other. With a successful co-teaching team, there can be progress in school culture, where students celebrate helping their classmates (Burstein et al., 2004). When

teachers understand their management roles and responsibilities, they can then focus on cultivating a safe classroom climate where all students feel comfortable to take on challenging tasks. Thus, when successful co-teaching is in place, students will also have the opportunity to experience victory.

Co-Teacher Roles

Another factor impacting a successful co-teaching structure is the role each teacher plays. Because each teacher brings in their own sets of knowledge and beliefs, each teacher's role can be different. For example, a general education teacher may assume they are the lead teacher because of their knowledge in content, whereas the special education teacher is solely a support or resource teacher (Brendle et al., 2017). This too common structure of one lead and one support can have various implications on a teacher's confidence. If the special education teacher is not being treated as an equal in their co-teaching relationship, the collaboration between the teachers can decrease and result in a lack of communication, and even harmed feelings. Another implication with co-teaching is when educators are not official experts in co-teaching techniques, which can result in conflicts with who makes what instructional decisions which can negatively affect efficacy and success due to the tension between each teacher (Chitiyo, 2017). Such conflicts that may arise from this include the frustration in not being explicitly clear on which teacher performs which instructional role in the classroom. This noticeable tension between teachers can be seen among their students. Other tensions can include personal differences between teachers, which also must be addressed at the beginning of the school year (Krammer et al., 2018). When conflict does arise, teachers

should know how to address it in an appropriate and swift way as to not interrupt the flow of the classroom. A successful co-teaching training must include a conflict resolution portion for co-teachers, which is a major piece of co-teaching (Kilanowski-Press, et al., 2010). A commonly employed inclusive practice is that of conflict resolution and communication, preferably not in front of students during instruction. Therefore, the largest and most significant implication is that of the students.

If there is not an equal amount of respect between the teachers, student success can be negatively impacted. In order to alleviate the tension and confusion of roles co-teaching teams need to discuss and how to make joint decisions on how they want to communicate with one another (Bashan & Holsblat, 2012). One teacher's role in joint planning may differ from the other's, so the team must explicitly identify what roles are independent, and which are collaborative. Having a solid understanding of each role will not only increase teacher confidence, but the success of the co-teaching team. Further, during the student teaching phase of a pre-service teacher program, when teacher candidates are teaching with a cooperating teacher, there is an increase in student academic success (Bacharach et al., 2010). Not only can co-teaching be successful in a pre-service program, but upon graduation as well. Yet, teachers can learn the aspects of co-teaching parity in a pre-service program, which is vital hands on training for co-teaching. Thus, the goal of co-teaching is to meet the learning needs of all students in a mainstream classroom, and those learning needs can only be met when parity exists between the teachers.

Co-teaching is commonly compared to a marriage because of its stages. There is first the honeymoon stage, where things are going smooth for the co-teaching team. Once student or personal issues begin to arise, the honeymoon stage ends and each teacher must do their part to cultivate a strong marriage. One key to a successful co-teaching marriage is communication. For example, in order for parity to occur, there must be healthy communication among co-teachers and is a key to developing a strong co-teaching relationship to cultivate efficacy (Bacharach et al., 2010; Brendle et al., 2017; Hang & Rabren, 2009; Oh et al., 2017; Pancsofar & Petroff, 2016). If a teacher is not open to change, or resistant to listening to their partner, ineffective teaching will take place. Co-teaching is true team work, so co-teachers should learn and understand the factors of how to work as a team with parity on a daily basis (Bacharach et al., 2010). In a co-teaching training, these stages of marriage must be addressed. Co-teaching teams should understand and be aware of these stages in order to know how to address any issues as they arise.

Communication as a Team

Other key components to a healthy co-teaching relationship include being honest and having daily check-ins. When teachers feel comfortable with their partner teacher, and have been taught the strategies to be a strong co-teacher and partner, confidence will increase (Oh et al., 2017). Teachers will feel more comfortable in sharing and stating student expectations, to avoid any confusion. Furthermore, co-teachers should be joined toegtehr at the beginning of the school year to establish trust and continually be supported throughout their relationship which enhances efficacy and a healthy co-

teaching relationship (Bacharach et al., 2010). Being honest at the beginning of the school year sets the stage for a successful team and is associated with more student success.

Co-teaching teams must stay together over a significant period of time, rather than the dynamics changing every quarter or school year. The more time spent together, the more trust and compatibility can grow and cultivate. For example, effective co-teachers should teach together for a period of months or years rather than changing their team the following school year, because time results in greater opportunities to learn from one another and to grow (Oh et al., 2017). Compatibility is germane to the success of the co-teaching duo and student achievement. As a result, co-teachers need specific training in how to co-teach, which may include aspects of differentiation strategies, explicit direction on each teacher's role, and relationship and communication building. When there is a consistency in co-teaching partners each school year, teachers can spend more time focusing on improving their co-teaching pedagogy and less on relationship building from their first year together (Nierengarten, 2013). In conclusion, there is a distinct correlation between the amount of training, coaching and PD teachers receive and their ability to effectively co-teach.

Coaching Support

Once co-teachers have a successful co-teaching relationship, another contributing factor to productive co-teaching is to have the support of coaches. Coaches who meet with co-teaching teams daily to assess and evaluate the co-teacher's pedagogy can create success. Having a coach will provide co-teaching teams with the opportunities to

collaborate on strategies during co-planning (Lindeman & Magiera, 2014). Therefore, having the common planning time provides co-teaching teams with the opportunity to meet with their coach, who can provide feedback for each teacher. Coaches also play a significant role in evaluating co-teaching teams for effectiveness and areas of growth. For example, for an effective co-teaching program to be established at the school, there must be evaluations in place which can be fulfilled by knowledgeable coaches (Nierengarten, 2013). Unfortunately, there is a lack of specific co-teacher evaluation systems in place to assess the effectiveness of co-teaching teams. Evaluations should be for both teachers as a team, and for each individual teacher's growth. Evaluations may have a student growth component, which assess student test scores. For the teacher component, evaluations may evaluate the effectiveness of each co-teaching model that is implemented. Overall, quarterly, or even monthly co-teacher evaluations given by their coach or administration can improve the success of the team.

Support from the school can require heavy funding, especially to pay for co-teaching teams to attend quarterly conferences or training sessions outside of the district. Although coaching can be a successful factor to co-teaching, many schools do not have the budget or the funding for this type of professional development (Miller & Oh, 2013; Nierengarten, 2013). An implication of having coaching each week may be that each co-teaching team has different planning times. Common planning time is germane for co-teachers to co-plan, and receive coaching. A successful co-teaching marriage must have their "pre-nuptial" meeting before the school year begins, to discuss major decisions in each teacher's equal role. After this initial meeting, teams must have regular planning

times, with, or without a coach, to modify any pieces of their classroom and planning

they see fit, such as a classroom routine or addressing a student behavior (Howard &

Potts, 2009). By having regular and consistent meetings, the "marriage" or relationship

between co-teachers can stay healthy for both the teachers and the students.

Teacher Content Knowledge

In order for effective coaching to take place, each co-teacher needs to have the

knowledge and confidence to teach in their respective content area. This is especially

important for the special education teacher to have the ability to choose the content area

to co-teach in, yet, in many districts, this decision is already made by administration

(Nierengarten, 2013). As a result of the special education teacher teaching in the

appropriate content area, they will feel more respected by their team and have a stronger

role in the classroom to participate in teaching. This respect will turn into each teacher

taking ownership of their learning, which promotes a sustainable co-teaching

relationship (Nierengarten, 2013). Further, when the special education teacher has a

stronger role in the classroom, they will be less likely to be pulled out of the classroom

to test students or hold meetings. Thus, it is significant that the special education teacher

be viewed as an equal to their co-teacher counterpart, so that each teacher is spending

equal time with students.

The content knowledge is not just in the specific discipline of English, math, or

science, but also having the knowledge of how to read and utilize IEPs. Although the

special education teacher will have the expertise in each student's IEP, the general

education teacher should be familiar with IEPs for every student in their class. During

planning time, the special educator can accommodate and modify the lessons and provide insight to the general education teacher on what those differentiation strategies can be (Howard & Potts, 2009). Thus, general educators must understand the purposes of an IEP and how to best utilize the document in co-planning with their special educator counterpart.

Classroom Management Training

Not only do teachers need the content knowledge to be successful, but they also need equal training in classroom management. Also known as co-management, co-teachers must have equal roles in managing the inclusive classroom. When each teacher is highly trained and can support one another, they can then hone in on their instruction and implementation of co-teaching models (Shaffer & Thomas-Brown, 2015). With numerous types of student behaviors in a co-taught classroom, it is imperative that a co-teaching training must include techniques for classroom management. Management can also mirror which teacher takes the lead versus a support role, which can create confusion and issues between the teachers and students. For example, if one teacher is consistently enforcing structures and routines in the classroom, the other teacher may be viewed by the students as inferior and less important. Such management strategies to be taught in a training session may include the how furniture and desks are placed in the classroom, how teachers will interact with students, as well as class routines and procedures (Faraclas, 2018). Once expectations of the classroom are in place and agreed upon, effective co-teaching is ensured. Also, co-teaching teams can practice management situations during the training, to have the opportunity to provide one

another with feedback on how strategies were used in the scenario. The teaching team must agree upon solutions when problems arise in the classroom and have the availability to discuss the advantages and disadvantages of certain management methods. Thus, to have an effective co-taught classroom, the teachers must have an agreed upon set of strategies and techniques to carry out for students and teachers to be successful.

To conclude, due to the increase in need for addressing the diverse learning needs for students with disabilities, a successful co-teaching team is germane. To establish a productive co-teaching team, teachers must be properly trained on best co-teaching practices. Such practices may include the co-teaching strategies and models, relationship building techniques, how to communicate, and how to co-plan and co-assess. The co-teaching training must be on-going prior and throughout the school year to best support both new and mentor co-teachers. The co-teaching training should not only include specific training sessions, but a coach or mentor must also be directly involved in the feedback and evaluation process. Districts that provide this training must have an administration that supports and understands what co-teaching is so that there is a culture that reinforces professional development and special education.

Implications

Due to the lack of literature on a proper professional development model specific for co-teachers, there is a major demand for effective co-teaching professional development sessions for all shareholders involved at the school. Further research must address not only the aspects of what is needed in a co-teaching professional development yearly model, but also the specifics of what that model looks like on a weekly and

quarterly basis. A functional co-teaching PD model will cultivate success for all stakeholders involved: teachers, students, and the community. Also, co-teachers must be best prepared to meet the varying learning needs of each student in a mainstream classroom. When co-teachers are prepared to co-plan, co-teach, and co-assess, students will be more likely to flourish academically which creates a culture and community of learning and achievement at the school.

Conclusion

To conclude, due to the increase in need for addressing the diverse learning needs for students with disabilities, a successful co-teaching team is germane. Throughout this literature review, I have investigated the aspects of co-teaching that are most significant for including in a professional development model specific to co-teachers. Vital studies have been conducted to assess the numerous factors of what makes co-teaching teams, and students in a co-taught classroom successful. In these studies, many co-teachers in grades K-12 have not have proper pre-service nor in-service training on how to effectively co-teach, co-plan, and co-assess (Miller & Oh, 2013). To establish a productive co-teaching team, teachers must be properly trained on best co-teaching practices. Such practices may include the co-teaching strategies and models (Hang & Rabren, 2009), relationship building techniques (Arndt & Liles, 2010), how to communicate (Lindeman & Magiera, 2014), and how to co-plan and co-assess (Howard & Potts, 2009). The co-teaching training must be on-going prior and throughout the school year to best support both new and mentor co-teachers. The co-teaching training should not only include specific training sessions, but a coach or mentor must also be

directly involved in the feedback and evaluation process. Since universities are not doing enough to prepare future co-teachers, the responsibility is left for administration at school districts (Hurd & Weilbacher, 2018). Districts that provide this training must have an administration that supports and understands what co-teaching is so there is a culture that reinforces professional development and special education. With the expansion of specialized co-teaching training, teacher efficacy will increase (Hudson et al., 2016). Through my research, I will examine additional factors that should be incorporated into a yearly PD for co-teaching teams. During my internship, I will learn how to effectively plan PD sessions for teachers and identify how to establish goals for a yearlong professional development.

Due to the lack of literature on a proper professional development model specific for co-teachers, there is a major demand for effective co-teaching professional development sessions for all shareholders involved at the school. Further research must address not only the aspects of what is needed in a year-long co-teaching professional development model, but also the specifics of what that model looks like on a weekly and quarterly basis. Questions that still need to be addressed include what has been successful for co-teachers at American schools in the past. Another question that still needs to be addressed is what the impact is of an effective co-teaching PD on student achievement. My research will explore how to create a month-long PD model on how to productively co-teach. A functional co-teaching PD model will cultivate success for all stakeholders involved: teachers, students, and the community. Also, co-teachers must be best prepared to meet the varying learning needs of each student in a mainstream

classroom. When co-teachers are prepared to co-plan, co-teach, and co-assess, students will be more likely to flourish academically which creates a culture and community of learning and achievement at the school.

CHAPTER III METHODOLOGY

Solution and Method

Proposed Solution

The main problem for co-teachers is that teachers lack knowledge on how to effectively implement co-teaching models at Bright Future Academy. Research suggests some major reasons causing this problem are a lack of training for administration, unclear expectations for communication and relationships between co-teachers, unclear expectations for teacher roles co-teaching teams, and not enough focusing on the pedagogical knowledge needed to effectively co-teach (Nierengarten, 2013). Co-teaching is designed to best meet the diverse learning needs of both general and special education students in a mainstream classroom.

A promising solution to this problem is for schools to provide an ongoing training professional development program to co-teaching teams. Specifically, the professional development program consisted of four 30-minute sessions, covering the four most interactive co-teaching structures that our team will deem as the most germane to increasing a teacher's efficacy. The main co-teaching structures that were taught during the PD series were team teaching, alternative teaching, station teaching, and parallel teaching. Team teaching is when both teachers deliver the content together (Weilbacher & Tilford, 2015). Alternative teaching takes place when one teacher teaches a larger group, while the other teacher teaches a smaller group. The content is the same in alternative teaching, but teachers may modify it to best meet the needs of their groups (Hang & Rabren, 2009). Station teaching takes place when the classroom is split up into

three groups, working on varied activities to have greater opportunities to help students one on one (Hang & Rabren, 2009). For example, each teacher is working with their respective group, and students rotate to each center, or station, after a certain amount of time. Finally, parallel teaching consists of teachers teaching the same information, but with the class divided in two (Weilbacher & Tilford, 2015). There are a variety of considerations behind each model depending on the subject-matter that is taught, which will further be explored in my ROS. Thus, as a result of this training program, I anticipated co-teaching teams to have an increase in their efficacy, and therefore be more effective as a team to promote student success. In turn, an escalation of teacher efficacy illustrated to be predictive of increases in student outcomes.

Justification of Proposed Solution

The proposed solution was to provide co-teaching teams at Bright Future Academy with sufficient ongoing training for how to best utilize co-teaching models, how to effectively collaborate, and how to best modify and differentiate lessons for all students in a mainstream classroom. This was the proposed solution because in the past at Bright Future Academy, co-teaching training has not been prioritized due to various factors such as schedule changes which hinder co-teaching teams from best utilizing the co-teaching models. Further, the solution of providing PD for co-teaching teams is a primary method of meeting inclusion requirements in both math and English classes. Therefore, these teachers' professional development opportunities deserve to be prioritized.

Study Context and Participants

The context of this study took place at Bright Future Academy, a charter school located in southern California. This charter school is a part of a region of Bright Future Academy charter schools throughout the southern California geographical region. Each charter school has their own models of how to utilize co-teaching to best fit their campus, as each school varies in grade level and support for special education. Bright Future Academy was a part of the local school district for special education services until about 2010. The school serves students in grades 5th-8th. After 2010, Bright Future Academy became their own Local Education Agency (LEA), so the school could hire its own special education staff. The staff, which only consisted of two education specialists at the time, had caseloads averaging 40-45 students across the school. This work included scheduling and running IEP meetings, as well as being available in classrooms for academic support.

Further, a special education manager was added in 2015 to alleviate some of the paperwork from the special education teachers. This is more of an administrative role at the school. Due to the increase in special education enrollment, the number of special education staff has continued to increase, and a PD specialized for special education for general education has not always been prioritized as ongoing development.

The participants in this study included both math and ELA co-teachers, grades 5th-8th, currently teaching at Bright Future Academy. There are a total of eight general education teachers and four special education teachers. Each teacher's experience as a

co-teacher will range from one year to almost six years of co-teaching experience at the school.

Proposed Research Paradigm

This study was a mixed-methods study. This mixed-method study included quantitative pre- and post-survey results and the use of other qualitative data collection methods such as observations of teams and interviews with co-teachers. The reason I chose a mixed-methods study is because I intended to learn and explore co-teachers' perceptions of co-teaching, and how their experiences can be improved through a PD series. A mixed-methods study assisted me in gaining a greater interpretation of my problem of practice through the identification of an indication of trends. Further, the qualitative methods allowed me to gather more in-depth information because of the interviews, observations, and surveys. This form of qualitative data is relevant because it helped me understand the perceptions, experiences, and realities of the co-teaching teams within my context. I formally documented the problem of practice by surveying and interviewing co-teaching teams, using the Co-teaching Experiences and Attitudes Survey (CEAS) with teachers to determine their attitudes and confidence towards co-teaching and the types of training teachers and administrators have received with co-teaching.

Data Collection Methods

Quantitative Measures

First, in the quantitative data collection, I provided teachers with an online Google Form pre-survey adapted from both the Co-Teaching Experiences and Attitudes

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Survey (CEAS) from Panscar and Petroff (2013), and a survey from Van Heck's (2017) qualitative study on the relationships between co-teaching roles and responsibilities. This survey was be adopted to my study because I did not use the survey in its entirety. I did not use the following survey sections: behavior management, efficacy to influence decision making, disciplinary self-efficacy, efficacy to enlist parental involvement, efficacy to enlist community involvement, efficacy to create a positive school climate, and meeting legal requirements (Van Heck, 2017). The sections of the survey I used include background, efficacy, instruction, planning, and differentiation practices. I captured and collected teacher background and demographic variables through this survey. The pre survey was be split into five constructs, adopted from Van Heck's (2017) survey: background, efficacy, instruction, planning, and differentiation practices.

First, a sample item that was assessed for the background construct is a Yes or No Likert style question on if teachers have had training in the practice of co-teaching. For example, "Write the number of years you have co-taught" (Van Heck, 2017). The efficacy pre and post survey questions were assessed on a scale for teachers to determine, on a scale from 0 to 4, 0 meaning cannot do at all, and 4 meaning highly certain to do in their respective content classroom (Van Heck, 2017). The self-ratings are also meant to reflect and represent the frequency of how often the teacher implements the statement per month. For instance, a rating of a 2 represents 30-40% frequency, a rating of 3 represents a 50%-70% frequency, and a rating of a 4 represents 80-100% frequency. There were five statements and questions for teachers to answer in the background construct. The response scale for this construct included a Yes or No, a

number to represent years, and the selection of teacher position: general education teacher or special education teacher.

A sample item that was assessed for the efficacy construct is rating how they feel when keeping students on task during difficult assignments. For example, the statement will state "Get through to the most difficult students" (Van Heck, 2017). There were eight items total for the instructional efficacy construct. The response scale for this construct included 0 meaning "Cannot do all" and 4 meaning "highly certain can do" (Van Heck, 2017). A sample item for the instruction construct was rating how the co-teacher provides instruction to the class, in regard to the co-teaching model implemented.

A sample item that was assessed for the planning construct is how often the co-teacher co-plans to design and implement instruction. A sample statement will state "Collaborating with my co-teacher to design and implement instruction" (Van Heck, 2017). There were five items total for the instructional efficacy construct. The response scale for this construct included 0 to represent "Never", 1 for "Seldom", 2 for "Some of the time", 3 for "Most of the time", and 4 for "Almost always" (Van Heck, 2017).

Lastly, a sample item that was assessed for the differentiation construct was developing collaborative lessons for students with special needs and in the general education population. A sample statement stated, "Implementing learning strategies for students" (Van Heck, 2017). There were five items total for the instructional efficacy construct. The response scale for this construct included 0 to represent "Never", 1 for "Seldom", 2 for "Some of the time", 3 for "Most of the time", and 4 for "Almost

always" (Van Heck, 2017). Reliability for each of these constructs was representative of the common themes of empirical features of co-teaching, which included instruction and differentiation (Van Heck, 2017).

The post survey was only be split into four constructs, not to include demographics as that information did not change since the pre survey: efficacy, planning, and differentiation practices. The post survey reflected teacher attitudes and beliefs of the questions based on their experiences in the PD series and implementation of co-teaching models. Because the sample size is so small, inferential statistics were not necessary. Thus, the quantitative results from the pre survey helped to inform the types of qualitative interview questions I asked, as well as my observation focus questions.

Qualitative Observational Data

In the qualitative data collection, I collected data through observations of co-teaching teams implementing the strategies taught in the mini-PD sessions. I observed two co-teaching teams every other, for a 20-minute time slot during the first hour of class, as many classes have independent student work time for the last 30 minutes, not including any co-teaching instruction. In my observations of both math and ELA teams, my protocol included that I looked for the utilization of at least one co-teaching model. I observed how the model was implemented, for how long, how much equity of instruction time there is for each teacher, and student engagement with the model(s).

Further, in my observation protocol I examined the planning construct by how the model was implemented. I truly saw if teachers had planned for their model, and how organized the model was implemented. Alongside the planning construct included my

observations of co-teaching teams during their lesson planning meetings. I observed the lesson planning session prior to observing the lesson to observe the alignment. In my observation protocol, I observed differentiation practices by checking if each the teams incorporated one-on-one, small group, or large group instruction. I determined the frequency of utilization of when each model was used. I also observed how and when teachers made modifications for students during their instruction. My intention during my observations was to collect the data to provide constructive feedback to the co-teaching teams, which serves as a part of the professional development series.

Qualitative Interview Data

Another method of data collection I used was to interview co-teaching teams concerning the effectiveness of the co-teaching PD sessions. I truly wanted to learn and implore on how the co-teachers individually, and as teams, experience the PD. Two co-teaching teams were interviewed the second week that the PD was implemented to examine their progression of the implementation of the co-teaching models in their classrooms. I interviewed one math team and one ELA team, which helped me in identifying what co-teaching models are utilized more in the respective content area. The interview protocol I used was a list of interview questions that aligned with the survey questions and observation protocol.

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The Professional Development

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The professional development lasted for four weeks. Since there was not an allotted time in the school day to hold the PD, so I recorded the 20-minute sessions for co-teachers to watch on their own time on Monday. I was the sole facilitator. The staff

members that were requested to watch the recordings included the math and ELA education specialists, and the math and ELA general education teachers. The topics that were covered in the PD were around the four main co-teaching models. I presented one model for each session. The models that were covered included alternative teaching, team teaching, station teaching, and parallel teaching.

Feedback

Another way my PD series will be an ongoing experience was the feedback I provided to co-teachers. I imparted constructive feedback to the co-teaching teams as a part of the professional development series. Thus, co-teachers did not only receive the mini-PD videos of co-teaching models, but also the feedback from my weekly observations. My feedback attempted to truly make my PD series an ongoing experience for co-teachers.

I framed my feedback to the co-teaching teams in the following manner: note what I saw during their lesson planning session and lesson implementation, note what elements of the planning and lesson implementation impressed me, and end the feedback with general questions I had about the lesson planning session and implementation. The feedback within my interviews served more as a conversation rather than an evaluative session.

Positionality as a Researcher

As both the professional development facilitator and ELA co-teacher within my context, this was an implication of how my positionality impacted other co-teaching teams. My identity as a researcher was to solely provide the PD series and apply

constructive feedback to the teams as a means of support rather than being an evaluator. I buffered my feedback to the teachers during my interviews with them by asking clarifying questions on their lesson before providing constructive feedback rather than being the evaluator of their teaching. This ensured teachers are comfortable with me during our interviews so that the feedback served as a part of the whole PD experience.

Additionally, Bright Future Academy has a strong culture of growth and coaching, therefore, the co-teachers had experiences with other staff on receiving feedback and PD. For example, mentor teachers have led PD sessions for school staff, which has shaped the school culture and environment to embrace growth. Thus, I believe that although I led the PD, the existing culture of Bright Future Academy aided my session rather than hindering teachers from getting the most out of the experience.

Justification of Use of Instruments in Context

To truly gain the experiences and attitudes of co-teaching within my context, I felt that observing and interviewing co-teaching teams permitted me to better understand how teachers feel. Observations allowed me to see exactly how teams are implementing the models in a way that works within their classroom context. Also, observations in the two content areas allowed me to see how the configurations of co-teaching are implemented in each respective subject area. Interviews allowed me to better acknowledge teacher beliefs and values towards being a co-teacher. In my interviews, I was able to better understand the benefits and drawbacks of each model based on teacher experiences and beliefs upon implementation.

Created by Panscofar and Petroff (2013) and Van Heck (2017), the adopted Co-teaching Experiences and Attitudes Survey (CEAS) was the main instrument used in the mixed-methods study because this survey was intended to "measure multiple aspects of co-teaching as it is understood and experienced by practicing teachers" (Pancsofar & Petroff, 2013, p. 86). Therefore, I used the survey Van Heck adopted from the CEAS based on Van Heck's further literature that supports the reliability of using the adopted survey versus the original CEAS.

Further, this survey, which was given to co-teachers at Bright Future Academy, helped to illustrate similarities and differences in previous co-teaching situations. The survey was grounded in teacher efficacy around co-teaching. The survey consisted of 15 Likert questions, five per research question, and five background questions. Lastly, the survey reflected any "professional development opportunities regarding co-teaching and teacher confidence, interests, and attitudes regarding co-teaching" (Pancsofar & Petroff, 2013, p. 83) which helped in determining what needs to be included in a PD series. This survey was provided in an online format and was given before and after the PD series was taught and models were implemented.

Data Analysis Strategy

The mixed-methods data was triangulated from the surveys, observations, and interviews. First, I conducted descriptive quantitative data analysis for the teacher background information in the pre-survey. The survey data was quantified. Due to the descriptive research questions asking teacher background data, this data simply summarized the sample studied without inferential statistics. Descriptive data analysis

therefore helped me in describing the sample of teachers, specifically the means and variability of their responses (Morgan et al., 2020). This background nominal data was represented through tables and figures, as needed, to illustrate the results. Finally, I used the percentages of nominal data to quantify the co-teaching protocol used to report out the data collected from the survey and observation samples.

Qualitative data was be analyzed with the intention of looking for cyclical trends through axial coding. I intended to identify common themes and concepts through triangulation from the survey responses, observations, and interviews with co-teaching teams. By coding within each construct, I confirmed what I noticed from the second phase to ensure a cyclical process. The qualitative data analysis was discussed through themes and categories found through the survey and interview data with each research question being the main heading. Overall, through a mixed-methods data analysis, I gained a greater understanding of my problem of practice and gain "multiple ways of seeing and making sense of the social world" (Creswell & Plano Clark, 2018, p. 4) and how to address it due to the analysis of both quantitative and qualitative data. Also, I looked for trends through separating the data among the general education and special education co-teachers, then by each respective discipline, to assess the themes and patterns across content area and specialty.

Timeline

The timeline for this study began at the start of the Spring 2022 semester, where I facilitated and provided the ongoing professional development sessions and training for co-teachers. The months of the PD took place February 7th through February 28th of

2022. The end of the spring semester included my final data collection and analysis to truly identify the impacts of the training.

Reliability and Validity Concerns or Equivalents

The adopted Co-teaching Experiences and Attitudes Survey (CEAS) was appropriate for all grade levels and subject areas. The survey was intended to measure co-teachers' perceptions and experiences of co-teaching, as well as their pedagogical knowledge of co-teaching. The survey consisted of 20 questions that range from short answers, yes/no questions, and multiple choice. As a way for me to collect the background data of co-teaching teams, the survey included questions such as the number of years taught, number of years taught as a co-teacher, and the subject areas taught, which helped inform the qualitative data collection. The survey scores were reliable by how there are closed answer options and ensures validity by the pre and post surveys through myself as the researcher ensuring that the data I obtained is credible. The survey was also paired with interview questions which enhanced the validity of the responses.

The quantitative reliability and validity concerns were based upon the pre- and post-survey. The Likert-style closed answer options are a quantitative characteristic of the survey that ensured reliability because "the scores received from the participants are meaningful indicators of the construct being measured" (Creswell & Plano-Clark, 2018, p. 217) which is the background data. With that said, the data should was reliable due to the consistency that was collected through the pre and post surveys, along with the validity of the questions asked aligning with the research questions.

To further ensure this trustworthiness, the observation and interview questions ensured qualitative validity by how through my data analysis I initially triangulated the data. This was germane in the mixed-methods data analysis process because I will eventually be able to make inferences about the data. Such inferences included what co-teaching model and structure best fits the needs of a particular content area versus a one size fits all approach. Another possible inference included the appropriate times to implement the specific co-teaching model in the respective classroom.

Limitations

A significant limitation to this study was the limited number of special education teachers. There are two ELA and two math education specialists, who pushed into a classroom. This is problematic because the co-teaching teams are mixed and do not have the opportunity to establish a consistent relationship with each other when education specialists are being pulled to a variety of classrooms. Having a strong established relationship as a co-teaching team is germane for effective communication and collaboration. Another limitation was the amount of time co-teachers spend co-planning, co-teaching, and co-assessing. Co-planning time allotted for co-teaching teams is every other week for 30 minutes. During this time, teams review the lesson plans for the following week, discuss any concerning student behaviors, and upcoming IEP meetings. The issue of time also plays a role in how long the education specialist is in the classroom with their general education teacher counterpart. Four out of the five days of the school week, an education specialist pushes in for 1 hour in their respective content area. This was a limitation to this study because certain co-teaching models may require

repeated amounts of practice and time to be effective for the subject area to best meet the learning needs of the students. The final limitation to this study was the small sample size of co-teaching teams. There were four education specialists, and eight general education teachers consisting of four math and four ELA teachers. This could be considered a limitation because this small sample size made it difficult to generalize conclusions for the entire Bright Future Academy charter network. Further, this was a limitation because we will not fully know the effects of the professional development in other charter schools with similar co-teaching relationship.

CHAPTER IV

Chapter 4: Analysis and Results/Findings

Introducing the Analysis

The intended purpose of this study was to determine how co-teaching related training impacts a co-teacher's efficacy. The quantitative data collection used was an online, Likert-scale style survey. As a part of this study, five co-teachers took one pre-survey and one post-survey. In the end, five co-teachers completed the pre-survey, while only three co-teachers completed the post-survey. Both surveys were given via a Google Survey, and data were anonymously collected. For both surveys, they were sent out on a Monday, and a reminder email was sent out on Wednesday. The pre-survey was given prior to any PD sessions provided. Teachers had one week to complete the pre- and post-survey. The post-survey was given the week after the last PD session was provided.

The first qualitative data analysis procedure used were observations. Two of the co-teaching teams also were observed using an observation protocol that aligns with my research questions. The first observation was conducted the second week of the PD series, while the second observation was conducted the third week of the PD series. The observations lasted 20 minutes, and the co-teachers requested times for me to observe. The two observations were followed by 20-minute interviews with the co-teaching teams. The interviews were the second qualitative data analysis procedure used, and I utilized a semi-structured interview protocol with guiding questions. The first interview was conducted via Zoom, with both teachers present. The second interview was

conducted in person, meeting separately with the general education teacher and the special education teacher, due to schedule conflicts.

The objective of this study was to answer the following research questions:

1. How does an ongoing training on co-teaching models relate to a co-teacher's self-efficacy?

    a. How does teaching efficacy vary by the model of co-teaching that is being implemented?

2. What pedagogical knowledge do the teachers perceive made the biggest influences in their classrooms?

    a. What structure were they most comfortable using?

    b. What did they need support implementing?

    c. How did the comfort level and need vary by discipline?

    d. How did the pedagogical knowledge from the training relate to comfortability in co-planning?

Presentation of Data

In this section, the data will be presented and organized by research question. Two special education co-teachers completed the pre-survey. One was the math and ELA special education teacher for 5th grade, and the other was the math and ELA special education teacher for 8th grade. Three general education teachers completed the pre-survey: the 5th grade math teacher, the 7th grade ELA teacher, and the 8th grade math teacher. Demographic data is displayed in Table 1. Due to the small sample size, teachers are represented in figures as Xs to show the observation of potential trends.

The first data analysis procedure used was for quantitative data analysis. This data analysis process is based on the pre-survey, in the "Background Questions" section. A descriptive data analysis was conducted based on the pre-survey results gathered. First, I assessed the mean of the years the three general education teachers have taught in total, by adding the sum of the years the teachers taught, then dividing by the number of general education teachers. The same statistical analysis process was utilized for the two special education teachers.

The next step in the quantitative data analysis was to perform descriptive data analysis for the average of years of co-teaching. This statistical analysis was primarily conducted by identifying the mean average of the number of general education teachers divided by the years of co-teaching. The same statistical analysis process was utilized for the two special education teachers.

Table 1. Descriptive Data Analysis for Background Data

Participant	Specialty	Discipline	Grade Level	Years of Teaching	Years Co-Teaching
Teacher 1	Special Education	ELA/Math	8	12	8
Teacher 2	General Education	Math	8	3	3
Teacher 3	General Education	ELA	7	17	3

Table 1 Continued					
Participant	Specialty	Discipline	Grade Level	Years of Teaching	Years Co-Teaching
Teacher 4	General Education	Math	5	13	1
Teacher 5	Special Education	ELA/Math	5	15	6

Additionally, out of the five teachers surveyed, 20% of the data sample, have received a PD specific to co-teaching practices. The co-teacher that selected "Yes" as their response provided an explanation of "PD's here and there over the years about different practices". No other co-teachers provided an explanation or rationale for their answer selection regarding PD received or not received in the past.

Research Question 1 - How does an ongoing training on co-teaching models relate to a co-teacher's self-efficacy?

Question 1 Summary

The first research question aimed to discover how a mini ongoing PD series could impact a co-teacher's confidence. Figure 1 demonstrates the pre and post survey results for the first survey construct; teacher-self efficacy. The figure represents a minor possible movement for teachers feeling confident in meeting the needs of their most academically challenging students.

Survey Results

Figure 1. Teacher Self-Efficacy Scale - Get through to the most difficult students

```
                                    X           X
Pre                     X           X           X
        _____
            1           2           3           4           5
        _____
Post                                X           X
                                                X
```

Get through to the most difficult students

The first research question to be addressed is how an ongoing training dedicated to co-teaching can impact a co-teacher's self-efficacy. To address this question, I examined the teacher's ratings from the pre- and post-survey. Figure 1 shows that in the pre-survey, teachers appeared to have little to medium confidence in getting through to difficult students. The post-survey results in Figure 1 shows a potential shift from ratings to higher self-scoring. In the "Teacher Self-Efficacy Scale" section of the pre-survey, co-teachers did not feel as comfortable in reaching high-need students both on and off IEPs, however, after the PD, the possible trend in Figure 1 shows the movement possibly grows towards the upper end of the rating, demonstrating potential growth between the

pre- and post- survey. Therefore, the more support through professional development co-teachers received, this may demonstrate that their efficacy improves.

The results of the pre- and post-surveys illustrate that there appears to be a positive relationship between receiving ongoing training and an increase in efficacy by implementing the co-teaching models. The first section of both surveys, being the "Teacher Efficacy Scale", there appears to be an increase in the answer selection on getting through to the most difficult students after receiving the PD. Figure 1 conveys the increase in efficacy to implement the co-teaching models after receiving the PD. No teacher selected a ⅕ or ⅖ on the post survey for any co-teaching model, illustrating that there is no difference if teachers appeared to feel an increase of confidence after learning more about the models.

Figure 2. Teacher Self-Efficacy Scale - Get students to learn when there is a lack of support at home

Get students to learn when there is a lack of support at home
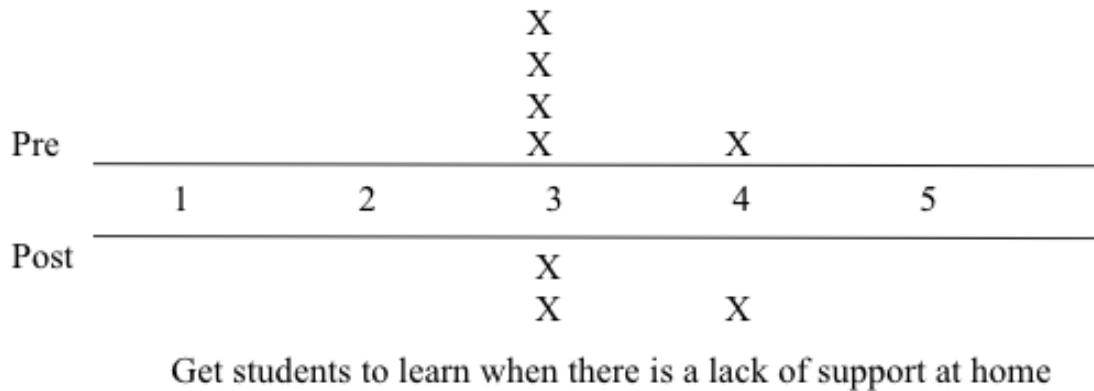
Figure 2 illuminates in both surveys that there is no change. In both the pre- and post-surveys, the possible trend illustrates that teachers still require additional support in

getting students, both on or without an IEP, who do not have resources or support at home. The co-teaching PD did not specifically provide resources on how to connect with families so that they can provide support for their child, therefore, the post-survey does not show any change. Further, due to the lack of change from both surveys, this data in Figure 2 illustrates that the ongoing PD series appears to not have had a negative impact on familial assistance.

Figure 3. Teacher Self-Efficacy Scale - Keep students on task on difficult assignments

```
                         X
                         X             X
Pre                      X             X
        _____
          1        2        3        4        5
        _____
Post                     X             X
                         X
```

Keep students on task on difficult assignments
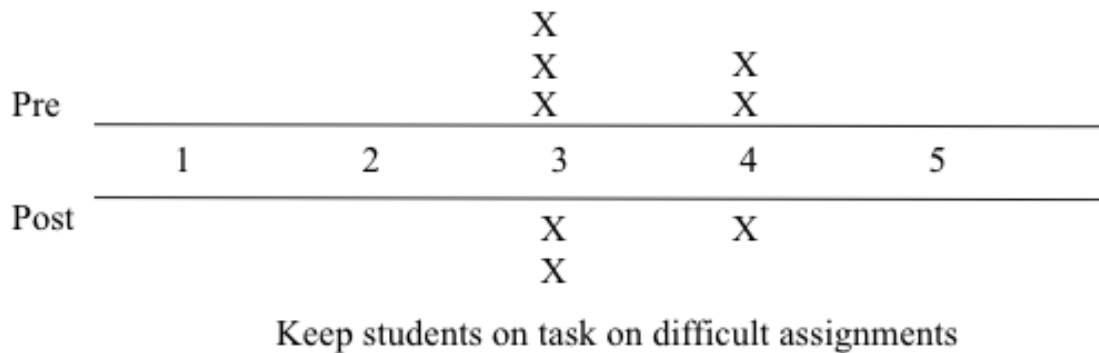
Figure 3 demonstrates no change in the ability to keep students on task on difficult assignments. In both the pre- and post-surveys, the trend in Figure 3 illustrates that teachers still have gaps in confidence in keeping students on task during difficult assignments in both ELA and math classes. Although there was no increase in confidence in ensuring students are on task, if teachers had more time to implement the models, especially with rigorous content and lessons, there may have been upward movement on the post-survey.

Question 1 Key Takeaways

The first research question assessed teacher self-efficacy as it relates to meet the diverse learning needs of students in a mainstreamed classroom. Each figure demonstrates the contrast in pre- and post-survey responses over the 4-week PD series. Overall, there is potential growth in teacher confidence when meeting the needs of students who present the most demanding academic needs.

Research Question 2 - What pedagogical knowledge do the teachers perceive made the biggest influences in their classrooms?

Question 2 Summary

Research question two aimed to identify what specific teaching knowledge and strategies had a significant impact for co-teachers. The survey results represented through figures below express the Instruction construct from the pre- and post-survey. The data illustrates potential growth from the pre- to post-survey in teachers feeling confident in providing instruction to all students, while using collaborative teaching techniques.

Survey Results

Figure 4. Instruction - Providing instruction to the whole class

```
                              X                          X
Pre  _____    X            X            X      _____
           1          2       3            4            5
     _____
Post                          X            X            X
```

Providing instruction to the whole class

In both the pre- and post-surveys, Figure 4 demonstrates the confidence levels in both general education and special education co-teachers when providing instruction to the whole class. This possible trend may be stagnant from the pre- and post-survey because in the 4-week training, there was only one PD on team-teaching, where both teachers provide instruction to the whole class. If there had been more time, or if the team teaching model had been introduced first, teams may have had an increase in confidence because there were more opportunities to teach in front of the class as both a general and special education teacher.

Figure 5. Instruction - Applying effective collaboration techniques in providing instruction to the class

```
                                      X
                                      X
                                      X
Pre    _____X_____X_____
           1         2         3         4         5
Post   _____X_____X_____
                                         X
                                         X
```

Applying effective collaboration techniques in providing instruction to

the class

Figure 5 growth from the pre- to the post-survey in relation to teachers feeling

confidence in applying effective collaboration strategies to the whole class. Figure 5

illustrates the potential increase and growth in co-teachers feeling comfortable in

applying collaboration techniques while providing instruction to the class. There appears

to be upward movement in confidence, illuminating the benefits of a PD specific to

collaborative co-teaching models. When teachers are given a variety of examples of

collaborative techniques in how to co-teach, they will feel more confident upon the

implementation of those approaches.

Figure 6. Instruction - Attending to all students

```
                                X
                                X
Pre                             X               X
         _____X_____X_____
              1         2         3         4         5
Post                                       X
         _____ X _____X_____
                                           X
```

Attending to all students

In both the pre- and post-survey results demonstrated in Figure 6, although there

is no upward movement in attending to all students, there appears to be no decline.

Therefore, the co-teaching PD appears to not have hindered teachers' abilities to meet

the needs of their students in a co-taught classroom.

Figure 7. Instruction - Providing instruction to individuals or small groups

```
                                           X
                                           X
                                           X
Pre                                        X               X
         _____X_____X_____
              1         2         3         4         5
Post                                           X           X
         _____X_____
                                               X
```

Providing instruction to individuals or small groups

The final question in the "Instruction" section relates to a co-teacher's ability and

efficacy in teaching individual students or in small groups. The results of Figure 8 show

no change in confidence when providing instruction to individual students or small

groups. Because teachers reported in their interviews that they have used some station

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models in the past, this may be a reason that there was no growth, but stagnant answers. The PD series appears to have bolstered this feeling for teachers, yet, if there were more opportunities for implementing the models, especially with feedback from an instructional coach, there could be more growth in the post-survey.

Research Question 2 Key Takeaways

Overall, co-teachers reported through the post-survey data a possible increased efficacy specific to how they instruct students in a co-taught classroom. With the PD series providing a variety of ways to differentiate and modify instruction, the potential growth illustrated in figures may be a result of what teachers learned and possibly implemented.

Research Question 1a - How does teaching efficacy vary by the model of co-teaching that is being implemented?

Research Question 1a Summary

The data represented for research question 1a is divided by the two different constructs in the survey. The first section illustrates the data for the Differentiation construct of the pre- and post-survey. The data represented in the figures shows a potential growth in co-teachers implementing specific learning strategies for all students, then moves into teacher confidence in working with students who have IEPs in a variety of group settings, and ends with how efficacy has been affected when making modifications to classroom materials for all students in a mainstream classroom.

Survey Results

Figure 8. Differentiation and Instructional Differences - Implementing learning

strategies for students

```
                                        X
                           X            X
Pre                        X            X
        _____
           1        2        3        4        5
        _____
Post                                    X
                                        X
                                        X
```

Implementing learning strategies for students
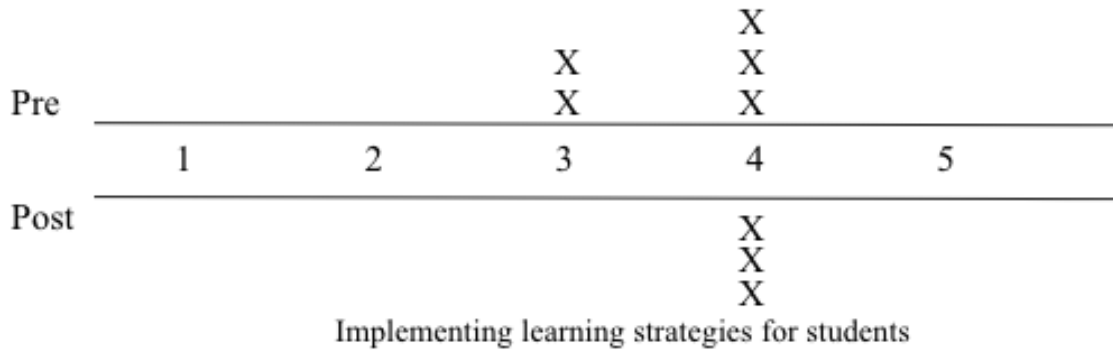
Figure 8 illustrates a potential shift in confidence from the pre- to the post-survey

regarding implementing learning strategies for all students in the mainstream classroom.

In the next section of the pre- and post-survey, the "Differentiation and Instructional

Differences", there is minor possible growth in how teachers feel when implementing

learning strategies for students. This potential trend increase appears to be a result or

correlation to the "bite-sized" amount of PD teachers received. Although there were co-

teaching models taught with strategies on how to modify those models, there were no

other differentiated strategies for teachers outside of the models and structures.

Figure 9. Differentiation and Instructional Differences - Working one-on-one with

students on IEP objectives

```
                                        X
                                        X
Pre  _____X_____X_____X_____
          1        2        3        4        5
Post _____X_____X_____
                                        X
                                        X
```

Working one-on-one with students on IEP objectives

Figure 9 indicates the pre and post confidence in how co-teachers feel when working with a student on an IEP in a one-on-one setting. The possible trend shows a growth in teachers feeling confidence in working with students who have an IEP. A reason for this probable trend may be because the co-teaching models in the PD included how to be in a small group or potentially one-on-one setting with students.

Figure 10. Differentiation and Instructional Differences - Working in small groups with students on IEP objectives

```
                                        X
                                        X
Pre  _____X_____X_____X_____
          1        2        3        4        5
Post _____X_____X_____
                                        X
                                        X
```

Working in small groups with students on IEP objectives

Figure 10 illuminates the minor shift from the pre- and post-survey in relation to comfort in working in small groups with students on IEP goals. In both the pre- and post-survey, there appears to be no increase in confidence regarding working in small

groups with students on IEP objectives shown in Figure 10. Although teachers did learn

a variety of small group co-teaching structures, there was not enough time to provide

feedback for teachers when implementing these, which could have hindered the increase

in confidence.

Figure 11. Differentiation and Instructional Differences - Working in large groups with

students on IEP objectives

```
                    X           X
Pre                 X           X           X
        _____
            1       2           3           4           5
        _____
Post                            X
                                            X
                                            X
```

Working in large groups with students on IEP objectives

Figure 11 demonstrates probable growth from the pre- to the post-survey in how

confident teachers feel when working in large groups with students on IEPs. A similar

question in both the pre- and post-survey was to identify confidence levels in working in

large groups with students on IEPs. The possible trend shown in Figure 11, based on

survey data, appears to be a slight increase in confidence with at least one teacher. The

co-teaching PD did provide approaches for teaching with large groups, such as in the

parallel teaching model, which may be a reason for the slight possible increase in

comfortability.

Figure 12. Differentiation and Instructional Differences - Making modifications for any

students who are struggling with the material

```
                                              X
                                              X
Pre  _____X_____X_____X_____
          1         2         3         4         5
Post _____X_____X_____
                                         X
                                         X
```

Making modifications for any students who are struggling with the

material

Figure 12 demonstrates the data from the pre- and post-survey regarding

confidence in modifying material for students who may struggle. This comparison

reveals little difference between the pre and post items.

Figure 13. Differentiation and Instructional Differences - Providing supports necessary

for participation and engagement in learning

```
                                              X
                                    X         X
Pre  _____X_____X_____X_____
          1         2         3         4         5
Post _____X_____
                                         X
                                         X
```

Providing supports necessary for participation and engagement in

learning

In both the pre- and post- survey data, Figure 13 illuminates a slight possible

upward movement in teachers feeling confident in their ability to provide support for

participation and engagement in learning within their respective content areas. The

possible trend displays that teachers appear to feel mostly confident with their ability to provide those differentiated supports, however, this is an aspect of the co-teaching PD that was only provided with the co-teaching models.

Figure 14. Differentiation and Instructional Differences - Developing collaborative lessons to ensure that individuals with special needs have access to and participate in the general education instruction

```
                                                    X
                                                    X
  Pre    _____X_____X_____X_____
              1          2          3          4          5
  Post   _____
                                                    X          X
                                                    X
```

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

Figure 14 illuminates the plausible growth from the pre- to the post-survey in comfritaility in resting collaborative lessons so that all students in the mainstream classroom have equal and equitable access to instruction. The last question in this section of the pre-survey and post-survey shows teacher scores appeared to possibly increase with teachers feeling confident in developing collaborative lessons for their diverse student learning needs in a co-taught classroom. With the increase of pedagogical knowledge of the co-teaching models, there is a possible trend showing teachers feel a greater efficacy in creating the more co-teaching heavy lessons.

Research Question 1a Key Takeaways

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Overall, in the first section of data representation for research question 1a, there is a potential trend in teachers utilizing techniques and strategies learned from the co-teaching PD series when working with students with, or without an IEP. The figures display possible growth from the teacher self-ratings in confidence with providing supports for students in a co-taught classroom.

Research Question 1a - How does teaching efficacy vary by the model of co-teaching that is being implemented?

Research Question 1a Summary

The second data display for research question 1a represents teacher ratings specific to the four different co-teaching models taught in the PD series. Each figure contrasts teacher confidence from the pre- to post-survey when implementing each co-teaching model, including alternative teaching, parallel teaching, station teaching, and team teaching. All figures display a potential trend in an increase of efficacy with utilizing the co-teaching models from before receiving a training, to after receiving a training.

Survey Results

In the "Instruction, Planning, and Differentiation Scale", questions were posed on how often co-teachers participate in the implementation of the four main co-teaching structures.

Figure 15. Pre- and Post-Survey Data - Efficacy of Implementation Based on Co-teaching Model: Alternative teaching

```
                  X
                  X
                                          X
Pre               X                       X
      _____
          1       2       3       4       5

Post      _____
                                          X       X
                                          X
```

Implement the alternative teaching model with confidence

In the structures section of the pre- and post-survey, there is upward movement
in efficacy in utilizing the alternative teaching model. Due to the knowledge teachers
received in the PD series, this potential trend may have grown because they learned how
to best utilize their co-teaching situation.

Figure 16. Pre- and Post-Survey Data - Efficacy of Implementation Based on Co-
teaching Model: Station teaching

```
                                          X
                          X               X
Pre                       X               X
      _____
          1       2       3       4       5

Post      _____
                                  X               X
                                                  X
```

Implement the station teaching model with confidence

Additional conceivable growth in the implementation of the station teaching co-
teaching structure is shown in Figure 16. Teams came into the PD with some knowledge
of how to utilize station teaching, but after explicit explanations and videos, the figure
shows the increase in confidence.

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Figure 17. Pre- and Post-Survey Data - Efficacy of Implementation Based on Co-teaching Model: Parallel teaching

```
                              X
Pre        X        X        X
  ──────────────────────────────────X─────────────────────────
           1        2        3           4           5
  ────────────────────────────────────────────────────────────
Post                         X           X
                                         X
```

Implement the parallel teaching model with confidence

Figure 17 illustrates the growth from the pre- to post-survey in implementing the parallel teaching model with confidence. The clear upward movement in Figure 17 illuminates how little co-teaching teams knew about the parallel co-teaching model until watching the virtual PD presentation. The potential growth in the figure shows that after receiving PD, teachers felt more confident, or had the same confidence, in implementing the parallel teaching structure.

Figure 18. Pre- and Post-Survey Data - Efficacy of Implementation Based on Co-teaching Model: Team teaching

```
        X
        X
Pre     X       X       X
    _____
        1       2       3       4       5
    _____
Post            X       X
                X
```

Implement the team teaching model with confidence

The last model teachers reflected on was the team teaching model, and Figure 18 shows the growth between the pre- and post-survey in confidence when implementing the model. Although there is slight upward movement from the pre- to post-survey, this model does require the most time and collaboration to co-plan, therefore, with the short time frame teachers had to view the PD, this may have impacted their confidence to increase.

The model that conveyed the most use was the station teaching model. The station teaching model splits the classroom into small groups of students. These groups may then be led by a teacher or can work in pairs/independently. The station teaching model was also the model that co-teaching teams reported being the most comfortable using in both the survey data, observation data, and interview data. In the post-survey, no teacher selected a ⅗ or less, showing a possible increase in confidence in using this specific model.

Research Question 1a Key Takeaways

In sum, the potential of growth in confidence teachers rated from the pre- to post-survey illuminates the need for an ongoing PD. The figures display the possible trend that the more training received, the more confident co-teachers will feel when implementing any of the four collaborative co-teaching models.

Research Question 2a - What structure were they most comfortable using?

Research Question 2a Summary

Question 2a aims to discover which of the four co-teaching models co-teachers felt most confident using in their classroom. A major finding from the interviews was that co-teaching teams favored the alternative teaching and station teaching models the most. A reason for this finding is that teachers received specific training on how to utilize each model to best meet the needs of both the teachers and students. A second major finding from the interviews was that teachers reported an increase of confidence and willingness to implement the models after receiving the weekly PD videos. The observation results further support the two major findings from this research question by how one co-teaching team utilized the alternative teaching model when being observed, showing a willingness and comfortability to implement the co-teaching model.

Interview Results

In the first interview with Teacher A and their co-teacher, both teachers reported feeling confidence in the station and alternative teaching models. Although they mentioned COVID-19 health and safety protocols limit much movement in the classroom, both teachers enjoy and feel confident in the implementation of the two

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models. They utilize these models about 50% of the time throughout the week, and they rotate which days to use each model.

In my 20-minute observation of Teacher A and their co-teacher, although both teachers expressed in the interview, they prefer using the station model, no co-teaching model was implemented. The structure that was used was the one-teach, one-assist model, where the general education teacher taught the whole group, while the special education teacher rotated to students for one-on-one assistance during a vocabulary lesson.

In the second interview, a different teacher explained that she felt confident in implementing all the structures, especially the station teaching model. She had experience running stations on her own without a co-teacher, and felt this model is helpful for remediation purposes. In this model, she feels confident in implementing this at least three times a week, for thirty minutes. However, she does not feel confident in implementing the parallel teaching because of the classroom management aspect, but she is willing to try this model due to the large class size and the benefits that could result from its utilization.

The qualitative data support the trends I found in the qualitative results. Co-teachers reported in their interviews that the "bite-sized" weekly PD was beneficial in learning more on the application aspect of the co-teaching models. In the 8th ELA co-teaching interview, they already admitted feeling very confident in co-teaching, because both teachers reported that they are expert and experienced teachers. The 5th grade math general education teacher explains how much more excited they feel to implement the

models due to the explicit instruction the PD series provided. Initially, they felt nervous to try out the new structures, but wanted to try more, especially when there was a more consistent co-planning time in place. These examples show that ongoing training supported teacher efficacy by how the more PD teachers received and watched, the higher the increase in comfortability of implementation of the models.

Lastly, the last teacher in the study feels much more confident after watching the PD videos on the co-teaching models. She explained that the videos gave good ideas for communication on how to distribute roles and responsibilities with her co-teacher. She especially favors the alternative teaching model because of her past co-teaching experiences. Based on the interviews, co-teaching reported an existing confidence in modifying work for students, especially when struggling with lesson material. After the 5th grade team implemented the station teaching model, they reported an increase in efficacy. Both teachers mentioned wanting more practice with the models.

Research Question 2a - What structure were they most comfortable using?

Observation Results

In my observation of the 5th math co-teaching team, which was conducted separately from each co-teacher, each teacher reported an increase in confidence in implementing different co-teaching models, especially the station model. Based upon the observation protocol, teachers implemented the station teaching co-teaching model. Students were split into four different groups: two groups with teachers, and two independent working groups, where students silently worked on online math programs.

Teachers rotated to a new group every ten minutes. There was implementation of small groups, and one-on-one instruction.

Question 2a Key Takeaways

To conclude, the two major takeaways from question 2a include a possible growth in comfort in utilizing the alternative and station teaching models, and an increase in teacher confidence to implement co-teaching models after receiving training. As a result of the specific videos and explanations of each co-teaching model, teachers felt more confident to implement co-teaching structures, even if they had not done so before.

Research Question 2b - What did they need support implementing?

Research Question 2b Summary

Two major findings from the two interviews with the ELA and math co-teachers include having more time allotted for co-planning, and the need for an ongoing PD series. Each co-teaching team recognized the value in planning with their co-teacher on a regular basis, and expressed that with more time could result in even more effective co-teaching practices. Additionally, co-teachers reported in their interviews the awareness of a need for more PD specific to co-teaching, especially with the benefits they received from a short, 4-week PD series.

Interview Results

In the interviews, co-teachers reported that support for future implementation would include both extra co-planning time. Another potential support reported was having a co-teaching coach who coaches both teachers for their implementation of co-

teachers' structures. Currently, the school utilizes a coaching model specific to content area, but there is no coaching in place specific to co-teaching. One team reported in their interview that having a coach who can provide opportunities for observations and feedback would be most helpful so that they can try to implement new models and strategies with extra support in place. Further, this team reported that although their students on IEPs are receiving differentiated and modified instruction, the English Language Learners do not receive enough support. This team's special education teacher reported feeling that they could use more support in the classroom management aspect of co-teaching, whereas the general education teacher feels confident in their management when implementing the models.

In the interviews with another pair of co-teachers, both teachers mentioned more co-planning time would be needed, as well as a clearer structure on what should be discussed in the meetings. Further, teachers explained that in the observation, the groups were separated only by their seating chart, not by any specific math data. For future implementation, the co-teachers expressed that aside from COVID protocols, they would have separated groups per exit ticket or previous assessment data.

After viewing the pre and post survey data, teachers would benefit from consistent co-teaching PD. All but one teacher did not have experience with a co-teaching PD until the PD I provided, showing that the more PD provided for teachers can increase efficacy in implementation of the various co-teaching models. An additional support for future implementation aside from providing a co-teaching PD

would be including a co-teaching coach who can give daily feedback to teams based upon implementation of co-teaching models.

Question 2b Key Takeaways

In sum, teachers reported in their interviews a need for more dedicated co-planning time, as well as a need for more training and development for co-teachers. Although the PD series shed light on the importance of what to include in a co-planning meeting, and the value of teacher development, this shortened 4-week training was certainly not enough to fully develop the teachers in their true co-teacher identities.

Research Question 2c - How did the comfort level and need vary by discipline?

Research Question 2c Summary

The major findings from this research question based on my observational data include teams feeling a sense of comfort when planning strategies and modifications for students, and a need for more support in student behavior management. Each co-teacher has much experience in accommodating student learning needs, yet, not all felt as comfortable in managing student behavior, especially the special education teachers. This was apparent in both observations when both the ELA and math general education teachers gave more directions, while the special education teachers took a more follower and listener role.

Observation Results

There was no distinction between math and ELA teachers for comfort level variation by discipline based on the model. Based on the interviews and observations, both the math and ELA teams showed confidence in implementing the station model the

most. Both teams reported in their interviews already using certain strategies for modification and differentiation, such as word banks, sentence frames, graphic organizers, and accommodations and modifications on assessments.

Both the ELA and the math teams identified station teaching as being the co-teaching model they are most comfortable with in their specific discipline. This result was due to special education teachers were more confident in their area of knowledge. Further, both teams preferred the station teaching and alternative teaching model because these are models they have used in the past, with or without a co-teacher.

A final finding for this research question shows that both the special education teachers reported a lack of comfort in two areas: the discipline of classroom management. The 5th grade special education teacher reported she does not feel as confident in teaching math as ELA. Whereas the 8th grade ELA teacher reported a lack of comfort level in implementing the new models due to classroom management concerns.

Research Question 2c Key Takeaways

To conclude, co-teachers come to the classroom with their own funds of knowledge that help best meet the diverse learning needs of their students, however, there are some areas for growth and development. Student behavior management is an area of concern for co-teaching teams, however, with a more consistent co-teaching PD, behavior management techniques can be taught to increase teacher efficacy in this particular area.

Research Question 2d - How did the pedagogical knowledge from the training relate to comfortability in co-planning?

Research Question 2d Summary

Figures 19-23 illustrate the pre- and post-survey responses from teachers around the Planning construct. Major findings include a potential growth in confidence to collaborate with a co-teacher, having dedicated co-planning time, planning for student needs, and defining roles and responsibilities during the co-planning time.

Survey Results

In the pre-survey, the "Planning" section asked teachers to rate their comfortability of how they collaborate with their co-teachers.

Figure 19. Planning - Confidence of collaboration with co-teacher to design instruction

Confidence of collaboration with co-teacher to design instruction

The first question in this section asked teachers to rate their confidence in collaborating with their co-teacher to design and implement instruction. Figure 19 demonstrates that teachers felt an increase in efficacy when collaborating with their co-teacher to design instruction. A reason for this possible growth may be that with the more knowledge and strategies of co-teaching models teachers have, the more confident they may feel in designing differentiated instruction.

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Figure 20. Planning - Having a regular planning time to meet with co-teacher

```
                                    X           X
  Pre        X                      X           X
        _____
            1          2           3           4           5
        _____
  Post                              X           X           X
```

Having a regular planning time to meet with co-teacher

Figure 20 illustrates the growth teachers felt in having more co-planning time with their co-teacher. Although the PD was not intended to provide the extra time for co-teachers to co-plan, the series may have assisted teams in understanding the best way to utilize their time when co-planning and the importance of having the regular and consistent time to collaborate.

Figure 21. Planning - Planning for individual student needs

```
                                                X
                                                X
  Pre                        X          X       X
        _____
            1          2           3           4           5
        _____
  Post                                          X
                                                X
                                                X
```

Planning for individual student needs

In both the pre- and post-survey data for this section of the survey, no movement was made, but there was no decline in confidence in how to plan for individual student needs. Not only with more time in the PD and in the school day, if a co-planning

protocol was provided for the co-teachers, this may increase their confidence in planning

if they had a reference.

Figure 22. Planning - Plan with co-teacher to define roles and responsibilities

```
                    X           X
Pre                 X           X               X
        _____
            1       2           3           4           5
        _____
Post                            X                       X
                                X
```

Plan with co-teacher to define roles and responsibilities

Figure 22 signifies the slight upward movement in confidence when planning

with a co-teacher to define clear roles and responsibilities as a team. Similar to the

results in Figure 21, if a co-planning protocol had been provided for co-teachers to

follow and modify to best fit their co-planning needs, there may be an increase in

efficacy on the post-survey.

23. Planning - Assigning roles and responsibilities

```
                                X
                                X
Pre                 X           X               X
        _____
            1       2           3           4           5
        _____
Post                            X                       X
                                X
```

Assigning roles and responsibilities

The final question in the "Planning" section of the pre- and post-survey asked teachers about confidence in assigning roles and responsibilities as a co-teaching team. The clear upward movement trend shows that the more information on how co-teaching was taught and received in the PD, the higher increase in efficacy teachers felt when assigning what roles to which co-teacher.

There is a clear probable enhancement after a co-teaching PD was provided for co-teachers since their comfort level in implementing the various co-teaching models increased as well as their co-planning comfortability. In the pre survey, no teacher reported a 5/5 in feeling confident in assigning roles per teacher, but in the post-survey, one teacher did. In the post survey, more teachers rated themselves a 5/5 on collaborating with their co-teacher to design instruction, showing that the co-teaching ideas provided in a PD allow them to feel more confident in co-planning, as well as giving co-teaching teams clearer direction in what to discuss in co-planning meetings.

Research Question 2d Key Takeaways

Overall, there is a potential trend in the amount of PD received, and confidence in participating in co-planning sessions. For instance, when there is a dedicated co-planning time for co-teachers, there is a potential increase in confidence for being able to plan for student needs and assign various roles to each teacher. Without the time, or knowledge, on how to do these in a co-planning meeting, there is a possibility that teacher efficacy can decrease.

Research Question 2d - How did the pedagogical knowledge from the training relate to

comfortability in co-planning?

Research Question 2d Summary

The major finding from the interview results for question 2d is that teachers will

use the one teach, one assist co-teaching model when there is no co-planning time or

structure in place. There is no current co-planning protocol that includes assigning roles

to each teacher and connecting the roles to co-teaching models. Co-teachers are willing

to put in the time and effort to growing as co-teachers, however, the time must be slotted

into their schedules for that to happen.

Interview Results

In the interview with the 5th grade co-teaching math team, the general education

teacher reported that more time for co-planning would be ideal to properly distribute

roles and responsibilities among the co-teachers. The general education teacher

explained that due to limited co-planning time and with no consistent system in place,

the team usually adopts the one teach, one assist co-teaching model, where the general

education teacher is in the front of the classroom providing direct instruction, where the

special education rotates to help students individually. The 5th grade math teacher did

feel confident in her own individual planning due to experience with the curriculum, and

understands how to modify and scaffold lessons to meet student needs. The 5th grade

special education teacher explained that planning happens every other week for about 30

minutes. She feels that they distribute their roles and responsibilities equally because she

does help both general education students and students on IEPs.

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During the 5th grade math observation, it was apparent that both teachers had co-planned on their roles and responsibilities. The general education teacher had a small group of students, while another small group was working with the special education teacher, within the station setting. This lesson plan was designed for differentiation due to the four different groupings of students.

Although the PD was a success for increasing teacher's efficacies, in all four interviews, teachers did report their efficacy could be increased if there was more co-planning time dedicated in each teacher's schedule.

Question 2d Key Takeaways

In sum, the interview data illuminates the great need for co-teaching teams to have dedicated a co-planning time, with a protocol to guide their meetings. Without this support from the leadership team, co-teachers are not being utilized to their fullest potential, which could impact student achievement.

Interaction between the Research and the Context

The context impacted the results because the school's schedule limits the amount of time co-teaching teams can co-plan. No major operational issues arose, however, I had to re-record a Zoom video due to the video expiring. The co-teachers all appeared willing to help participate. The co-teaching teams who did participate in both the observations and interviews were given giftcards to thank them for their time.

Further, due to the staff shortages and changes, data collection was limited. The 6th grade team has substitute teachers for both their math and ELA classes. The 8th grade team had their math teacher leave mid-way through the data collection. There was

no open resistance to the study, yet there is a discrepancy between how many teachers completed the pre-survey versus the post-survey.

The results were not formally shared with the participants; however, co-teachers involved in the study will have permanent permission to review the co-teaching PD Google Slide presentations for each structure as needed. Having access to the slides ensued a positive reaction from co-teachers because the interview data illustrated that the co-teachers found the slides helpful in their implementation of structures. Additionally, the research was perceived as useful from co-teachers based on our interviews and post-survey results. There was an increase in efficacy in implementation of the co-teaching structures overall for both content areas. No further suggestions ensued from the study.

In a further study, I would dedicate more time to observe the co-planning sections of the protocols used. If more time was allotted for the PD, more strategies for engagement may have been taught. In regards to co-planning, I would also provide a sample protocol for the teachers to use during the data collection phase as a part of their professional development, which would be followed by a post-survey to see what aspects of the co-planning protocol helped in increasing comfortability and efficacy.

Summary

The history of Bright Future Academy's professional development on co-teaching is extremely limited, although the state requirements to be inclusive and have mainstreamed classrooms continues to be a major push for the school. Co-teaching teams in both math and ELA classes are required to co-plan and meet the diverse needs of students on IEPs, as well as general education students. The goal of this study was to

determine how a consistent co-teaching training PD can impact a co-teacher's efficacy. The results of this study suggest that with the implementation of a PD specific to co-teaching, co-teaching teams in both content areas have an increase in efficacy by implementing the collaborative co-teaching models.

The study began with a pre-survey, including background information and teacher self-ratings on an online Likert-scale survey. Teachers rated themselves on areas of their co-teaching in implementing the models, as well as co-planning. In the following weeks, teachers watched 15-minute co-teaching videos specific to the four main co-teaching models: alternative teaching, station teaching, parallel teaching, and team teaching. Throughout the weekly PDs, teams were observed and interviewed, using co-teaching protocols.

At the end of the study, co-teachers completed a post-survey, which was identical to the pre-survey, aside from the background data input. One area that teachers reported the greatest need was in their co-planning, such as receiving more time and more structure in how to properly co-plan. Teachers reported an increase in efficacy in applying all models, specifically the station and parallel teaching models. While I did not specifically focus on a PD for how to co-plan, I realize that a PD series on structures for co-planning would be beneficial for co-teaching teams and their efficacies.

Chapter 5: Discussion and Conclusion

Summary of Findings from Chapter 4

Professional development as a method to increase a teacher's efficacy is a common value and practice in mainstream education (Arndt & Liles, 2010; Bashan & Holsblat, 2012; Brendle et al., 2017; Chitiyo, 2017; Friend et al., 2010). Co-teaching teams are more likely to implement co-teaching models when given PD opportunities in order to grow. The implementation of an ongoing monthly PD series specific for co-teachers can increase a teacher's self-efficacy when utilizing the various co-teaching models. After analysis of my mixed-methods study, there was a significant change in teacher efficacy between the pre- and post-survey illustrated in an increase in comfortability in implementing the co-teaching models.

The current status of a co-teaching PD at Bright Future Academy is lacking for co-teachers. A main result from the study was that teachers' efficacies increased from a PD specific to the four main co-teaching models. This result lends itself to additional investigation of other supports co-teachers will need to have an increased efficacy, such as dedicated time for co-planning, and a co-teaching instructional coach. Teacher feedback from the interviews also indicated that learning more about the co-teaching structures gave them more comfort in implementation of the models in the future. However, to effectively co-teach with one of the four collaborative co-teaching models, support from specialized staff is needed to provide feedback for the teams, such as an instructional coach dedicated to co-teaching teams. Therefore, the school must consider teachers or administrators can act as coaches to provide the support, such as an ongoing

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PD series and daily feedback, to co-teaching teams to continue the increase of efficacy. The culture of professional development and co-teacher growth will cultivate increased confidence and comfortability for teachers and students alike.

Discussion of Results in Relation to the Extant Literature

The increase of mainstreaming students in American public education is on the rise (Burstein et al., 2004). For students in mainstream classrooms to be academically successful, their teachers must be prepared, especially if placed into a co-teaching role. Many schools utilize co-teaching structures in major content classes, such as English Language Arts and mathematics, to address the diverse learning needs of students on IEPs, as well as the general education population of students. While schools push the value of co-teaching upon new and veteran teachers, there are many skills on co-teaching that these educators need to be and feel successful (Hudson et al., 2016; Krammer et al., 2018; Nierengarten, 2013). As a result of this issue, co-teachers are not receiving enough professional development on how to properly co-teach, utilizing the various co-teaching models, which negatively impacts their efficacy as a co-teacher (Hudson et al., 2016).

In both Panscar and Petroff (2013) and Van Heck's (2017) survey on teacher and co-teacher efficacy, both surveys sought to discover and understand efficacy a teacher has when co-planning and co-teaching with their counterpart. Self-efficacy can be defined in this context as a teacher's confidence in themselves as an educator in the classroom (Burstein et al., 2004), and can truly be impacted by how much or how little support a teacher receives, especially in the realm of co-teaching. This research study

investigated the connection between a co-teacher's self-efficacy with receiving a weekly professional development series. The goal of the research was to increase the co-teacher's self-efficacies at Bright Future Academy, especially when implementing the models they learned in the PD sessions. The mixed-methods study not only provided co-teachers with bite-sized PD sessions every week, but also provided teachers with tips on how to modify the co-teaching structures for their respective content area. The qualitative post survey results demonstrated that with more PD results in an increase in efficacy, which the literature also supports.

Personal Lessons Learned

Throughout my research study process, I learned two major germane lessons. First, co-teachers do not receive sufficient PD on the models and components of co-teaching. Although I did not explicitly ask co-teachers in their survey if they would like to receive more PD on co-teaching, all teachers responded positively to the PD sessions. However, including a more explicit and direct question that correlates PD and efficacy could have produced additional insights and results from the study. Thus, more consistent PD should be provided for co-teaching teams for them to grow in their co-teaching practices.

An additional lesson I learned was the importance of co-planning sessions. When implementing future studies, I could include a protocol for co-planning sessions, as well as observe these sessions to see how this time could be improved. I feel that the limited time that co-teachers do have to plan is not fully utilized as it could be concerning collaboration. For example, in a co-planning session, co-teachers can discuss and

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collaborate on the co-teaching models and practice assigning more clear roles and responsibilities. With a more structured co-planning session where both teachers feel valued, this can also positively impact their efficacy.

Implications for Practice

After examining the data from my mixed-methods research study, the PD I provided was beneficial for co-teachers, as they all reported a higher level of confidence in implementing the four main co-teaching models. Yet, to continue this process, additional time must be set aside for co-teachers to watch and participate in the sessions rather than doing so on their own time. If time allowed, the co-teaching PD could be ongoing with sharing strategies used in the classroom among teams to learn from each other. Because all co-teaching teams have different co-teaching experiences, including time for teams to collaborate and share background knowledge could be a factor in increasing efficacy.

Also, there must be support from administrators on holding co-teaching teams accountable for attending co-planning sessions and incorporating the co-teaching models throughout the week. Co-teaching is too often not co-teaching at all, but rather the general education teacher being the main teacher, while the special education teacher is the aid. This mindset must shift to fully utilize having two educators in the classroom, which can be done with consistent PD and accountability through an observation and feedback protocol from administrators.

Implications for Context

This study illustrates the need for and importance of having a consistent PD for co-teaching teams. Bright Future Academy must consider including more of these sessions throughout the school year, rather than only in the summer. Before this study, co-teaching teams had received a very limited amount of PD on the co-teaching models. Conducting a consistent PD can cultivate a positive culture around personal and professional growth which can further impact a co-teacher's efficacy and success. Therefore, administrator support will be needed to model the value of importance for watching or attending the PD sessions.

Another implication that arose from this study is the importance of additional staff support that co-teachers need to be successful. Having a co-teaching coach, who provides feedback, can truly improve how co-teachers implement the structures. Further, receiving feedback specific to how the co-teaching structures are being implemented can help co-teachers improve in their practices. The main goal of this process is for co-teachers to effectively implement the structures with efficacy within their context.

Implications for Field of Study

This research study gave me the opportunity to share the knowledge and expertise of the co-teaching models with co-teachers who most have not had the opportunity to learn about the structures. Before I provided the PD session, many of the co-teachers reported in their pre-survey that they had not received any type of PD on co-teaching. During the study, the participants were given the time to learn about the four collaborative co-teaching models and how to implement them in their respective content

areas. The effects of the PD can include that positive self-efficacy the co-teachers will feel not only about themselves, but with their identity as a co-teacher.

Additionally, this study signifies the benefits of receiving ongoing support in the form of self-directed professional development for a variety of contexts where co-teachers are not receiving support for their professional growth. Although there are factors that can negatively impact the PD being delivered, such as time constraints and motivation to implement what is learned from the PD to the classroom, the study is a strong example of the positive impacts a "bite-sized" PD can have on co-teachers, and ultimately students.

Recommendations

The results of this study demonstrate a further need to provide additional support for co-teaching teams. These reinforcements include a structured co-planning model, additional time for co-planning, a co-teaching coach, and a continued PD series throughout the school year. First, utilizing a clear and organized co-planning structure may look like a template that teams use to have a clear way to communicate and collaborate. Each co-teacher should have a clear role in the co-planning session, as well as a distinct direction for what responsibilities will be divided. This clear co-planning structure will ensure each teacher feels included and involved in the co-planning process. When each teacher has a clear role in the classroom, this can alleviate co-teachers to fall back on the one-teach, one-assist co-teaching model. Further, this structure and format of a co-planning session can ensure a sense of equality in the co-teaching relationship.

Second, throughout the interviews with co-teaching teams, each co-teacher mentioned the need for more time to co-plan. When there is more time to co-plan, co-teachers can have enough time to get through their session without leaving any major aspects out. Also, having a daily, dedicated time to co-plan allows for a sense of routine, which also can positively impact a teacher's efficacy.

Third, some co-teachers suggested in their interviews to have additional professional development, aside from a presentation, but rather a more intimate PD, such as a coach as a form of the PD. This co-teaching coach may look like a mentor teacher with years of successful co-teaching experience. Co-teaching teams could be observed, like an instructional coach for any content area. This coach would be giving feedback specific to the implementation of the co-teaching structures, rather than on the content being taught. The coach would provide feedback to the teams per an observation protocol, to truly provide specific and individualized development and suggestions for the co-teaching teams. This quick and relevant feedback may also create an increase in efficacy and a sense of feeling supported.

The final recommendation this study demonstrated was to have a continuous PD specific to co-teaching all year long. Co-teachers reported an increase in knowledge and efficacy in their post surveys based on the month of PD they received, demonstrating how impactful a year-long PD on the co-teaching structures may be. The PD could cover other aspects of co-teaching, such as how to maintain a healthy relationship, how to distribute roles and responsibilities, and how to properly co-assess as both a general and special education teacher in a mainstream classroom.

Closing Thoughts

This record of study was intended to identify the correlation between the implementation of a co-teaching PD and the efficacy of co-teaching teams, before and after receiving the PD series. An ongoing PD series specific to co-teaching is not a typical method of development for co-teachers, although many schools across the country have mainstreamed classrooms and utilize the co-teaching model. Germane research exists which aids the implementation and integration of a co-teaching PD series for both veterans, and new co-teachers, and how the ongoing support can increase and sustain a co-teacher's confidence. This type of PD covers co-planning, co-teaching structures, and co-assessing within a co-teaching relationship. However, in schools, a PD specific to co-teaching occurs only once or twice within a school year, typically during the summer or fall months of the beginning of the school year.

At Bright Future Academy, the co-teaching PD is given one time, in the summer for math and ELA co-teachers. This PD is intended to quickly show teachers the co-teaching models, and to get to know their co-teacher. Within the context of the current study, only one out of the five co-teachers' surveys admitted to receiving any consistent professional development in co-teaching at Bright Future Academy. Additionally, the co-teaching teams did not have the confidence in implementing new co-teaching structures learned in the summer co-teaching PD. Initial results of the study presented co-teachers feeling confident in one to two co-teaching models, before receiving the PD. However, after receiving five mini recorded presentations on the four co-teaching

models, all co-teachers surveys reported an increase in confidence in implementing all four models.

Looking into the 2022-2023 school year, I can envision implementing a quarterly PD for co-teaching teams, with opportunities for an observation cycle to provide feedback from a seasoned team member. I will likely play a role in leading the PD and acting as a coach for co-teachers. Through implementing regular support throughout the school year, co-teachers will feel more confident in teaching a class of diverse student needs with another teacher in the classroom.

Although further investigation of PD approaches for co-teaching teams exists to increase efficacy, public schools can reflect on what coaching and PD best fits the needs of their schools specific to time and resources. Literature suggests the more professional development teachers receive, the higher their confidence in being a teacher (Krammer et al., 2018). If sites can provide more opportunities for growth specific to the art of co-teaching, a sense of confidence can be had for both the general and special education teacher. Focus must not only be directed on content expertise, but how co-teaching expertise, since this type of teaching is much different than teaching solo, because there is a true art to co-teaching that lends itself to much growth and support to improve one's efficacy.

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APPENDIX A

IRB REVIEW

NOT HUMAN RESEARCH DETERMINATION

February 22, 2021

Type of Review:	Initial Review Submission Form
Title:	Professional Development for Secondary Co Teachers
Investigator:	Mary Margaret Capraro
IRB ID:	IRB2021-0230
Reference Number:	121807
Funding:	N/A
Documents Received:	IRB Application (v1.0)

Dear Mary Margaret Capraro:

The Institution determined that the proposed activity is not research involving human subjects as defined by DHHS and FDA regulations.

Further IRB review and approval by this organization is not required because this is not human research. You have indicated that the results of the activities described in the application will not be generalized beyond a single school system and will not be published. This determination applies only to the activities described in this IRB submission and does not apply should any changes be made. If changes are made you must immediately contact the IRB about whether these activities are research involving humans in which the organization is engaged. You will also be required to submit a new request to the IRB for a determination.

Please be aware that receiving a 'Not Human Research Determination' is not the same as IRB review and approval of the activity. IRB consent forms or templates for the activities described in the determination are not to be used and references to TAMU IRB approval must be removed from study documents.

If you have any questions, please contact the IRB Administrative Office at 1-979-458-4067, toll free at 1-855-795-8636.

Sincerely,
IRB Administration

PRE AND POST SURVEY
<u>Pre-Survey</u> (Adopted from Van Heck, 2017)
<u>Background Questions</u>
1. What position are you in as a co-teacher?
    1. General Education Teacher
    2. Special Education Teacher
2. State your discipline: Math or ELA ____
3. State the grade level(s) you teach: ____
4. State how many years of experience you have teaching: ___
5. State how many years of experience you have co-teaching: ___
6. Have you had training in the practice of co-teaching before? Yes No If yes, please briefly explain.

<u>Teacher Self-Efficacy Scale</u>
Rate your degree of confidence by recording a number from 1 to 5 using the scale given below:

1-Not confident at all   2-Slightly confident   3-Somewhat confident   4-Fairly confident   5-Completely Confident

Instructional Self-Efficacy

1. Get through to the most difficult students.

    1   2   3   4   5

2. Implement the parallel teaching model with confidence.

    1   2   3   4   5

3. Implement the station teaching model with confidence.

    1   2   3   4   5

4. Implement the team teaching model with confidence.

    1   2   3   4   5

5. Implement the alternative teaching model with confidence.

    1   2   3   4   5

6. Get students to learn when there is a lack of support from home.

    1   2   3   4   5

7. Keep students on task on difficult assignments.

    1   2   3   4   5

<u>Instruction, Planning and Differentiation Self-Efficacy Scale</u>
Rate your degree of confidence by recording a number from 1 to 5 using the scale given below:

1-Not confident at all   2-Slightly confident   3-Somewhat confident   4-Fairly confident   5-Completely Confident

Instruction

1. Participating in team teaching.

    1   2   3   4   5

2. Providing instruction to the whole class.

    1   2   3   4   5

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

<div align="center">1   2   3   4   5</div>

4.   Attending to all students.

<div align="center">1   2   3   4   5</div>

5.   Providing instruction to individuals or small groups.

<div align="center">1   2   3   4   5</div>

<div align="center">**Planning**</div>

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

<div align="center">1   2   3   4   5</div>

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

<div align="center">1   2   3   4   5</div>

3. Planning for individual student needs.

<div align="center">1   2   3   4   5</div>

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

<div align="center">1   2   3   4   5</div>

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

<div align="center">1   2   3   4   5</div>

<div align="center">**Differentiation and Instructional Differences**</div>

1.   Implementing learning strategies for students.

<div align="center">1   2   3   4   5</div>

2.   Working one-on-one with students on IEP objectives.

<div align="center">1   2   3   4   5</div>

3.   Working in small groups with students on IEP objectives.

<div align="center">1   2   3   4   5</div>

4.   Working in a large group with students on IEP objectives.

<div align="center">1   2   3   4   5</div>

5.   Making modifications for any students who are struggling with the material.

<div align="center">1   2   3   4   5</div>

6.   Providing supports necessary for participation and engagement in learning.

<div align="center">1   2   3   4   5</div>

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

<div align="center">1   2   3   4   5</div>

Teacher Self-Efficacy Scale

Rate your degree of confidence by recording a number from 1 to 5 using the scale given below:

1-Not confident at all   2-Slightly confident   3-Somewhat confident   4-Fairly confident   5-Completely Confident

Instructional Self-Efficacy

1.   Get through to the most difficult students.

                  1   2   3   4   5

2.   Implement the parallel teaching model with confidence.

                  1   2   3   4   5

3.   Implement the station teaching model with confidence.

                  1   2   3   4   5

4.   Implement the team teaching model with confidence.

                  1   2   3   4   5

5.   Implement the alternative teaching model with confidence.

                  1   2   3   4   5

6.   Get students to learn when there is a lack of support from home.

                  1   2   3   4   5

7.   Keep students on task on difficult assignments.

                  1   2   3   4   5

Instruction, Planning and Differentiation Self-Efficacy Scale

Rate your degree of confidence by recording a number from 1 to 5 using the scale given below:

1-Not confident at all   2-Slightly confident   3-Somewhat confident   4-Fairly confident   5-Completely Confident

Instruction

1. Participating in team teaching.

                  1   2   3   4   5

2.   Providing instruction to the whole class.

                  1   2   3   4   5

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

                  1   2   3   4   5

4.   Attending to all students.

                  1   2   3   4   5

5.   Providing instruction to individuals or small groups.

                  1   2   3   4   5

Planning

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

                  1   2   3   4   5

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

                  1   2   3   4   5

3. Planning for individual student needs.

                  1   2   3   4   5

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

                                          1   2   3   4   5

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

                                          1   2   3   4   5

Differentiation and Instructional Differences

1. Implementing learning strategies for students.

                                          1   2   3   4   5

2. Working one-on-one with students on IEP objectives.

                                          1   2   3   4   5

3. Working in small groups with students on IEP objectives.

                                          1   2   3   4   5

4. Working in a large group with students on IEP objectives.

                                          1   2   3   4   5

5. Making modifications for any students who are struggling with the material.

                                          1   2   3   4   5

6. Providing supports necessary for participation and engagement in learning.

                                          1   2   3   4   5

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

                                          1   2   3   4   5

INTERVIEW PROTOCOL QUESTIONS – CO-TEACHERS

Planning
1. How often do you and your co-teacher co-plan?
2. How do you distribute roles and responsibilities for each of you as co-teachers?
3. How do you plan to meet the needs of all student needs?

Efficacy
1. After receiving X amount of PD, how confident do you feel now in implementing some of the co-teaching models?
2. Which models do you feel most confident implementing in your content area?
a.   When/why?
b.   For how long do you use the models?
3. What went well after the implementation?
4. What would you change? Why?
5. As a co-teacher, do you feel more or less confident in co-teaching?
6. As a (general or special education) teacher, do you feel more or less confident in co-teaching?

Differentiation of Instruction
1. How often do you modify your instruction to meet the diverse learning needs of your students?
2. How often do you implement co-teaching models to meet the needs of your students?
3. What strategies do you implement to modify instruction?

4. What types of co-teaching models are you using and when?

APPENDIX D
OBSERVATION PROTOCOL

Planning
___Each teacher has a role in the lesson implementation
___Lesson appears to be well organized through clear roles and responsibilities during implementation
___Each teacher had participation and input during their lesson planning meeting
___Lesson plan has designated areas for differentiation
___Each teacher has a role in teaching during the lesson

Differentiation of Instruction
___ Implementation of at least one co-teaching model
-Model used ___
-Duration of time model used ___
-Model used __ amount of times for a duration of __ minutes
___Use of small group instruction
___Use of one-on-one instruction
___Use of large group instruction
___Modifications made to instruction
___% of teachers modified instruction ___% of the time during the lesson
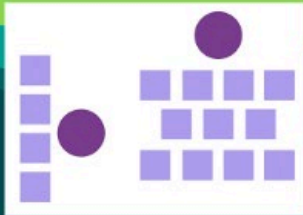
Exemplar Videos

When & Why to Use

- **Absent students**
- **Re-teach**
- **Enrichment vs. intervention**

Alternative Teaching

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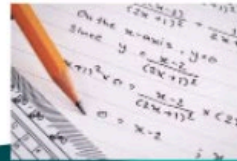
Week 2
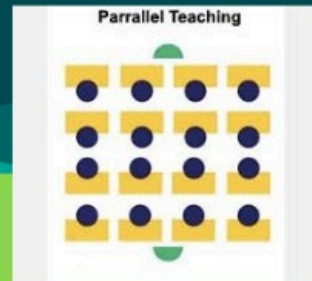
What is Parallel Teaching?
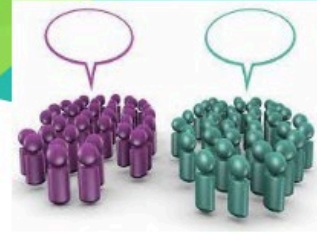
- ◆ Teachers split up class
  - ◆ Class is "parallel to each other"
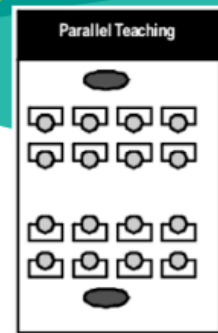- ◆ Each teach same content, with smaller class size

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Exemplar Videos

When & Why to Use

Parallel Teaching

- ◆ Larger class sizes
- ◆ Small groups
- ◆ Answer more questions
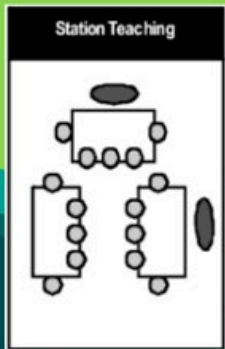- ◆ Get more in depth with content/practice

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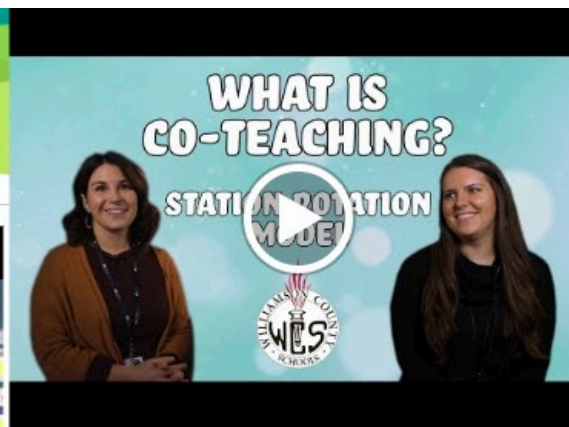## Modifications

ELA

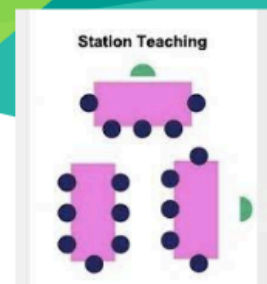### Math

Week 3

Station Teaching

What is Station Teaching?

- **3-4 stations**
  - *Options:*
  - 2 teachers at each station
  - 1 teacher at 1 station while the other manages

Exemplar Videos

WHAT IS CO-TEACHING?
STATION ROTATION MODEL

When & Why to Use

Station Teaching

- Teaching new content
- Re-teaching old content
- Student "menu"
- Student mastery/non-mastery on standard/assessment

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Week 4

What is Team Teaching?

- ◆ **Both teachers have an active instructional role**
- ◆ **Each teacher has a chance to present and teach to the class**
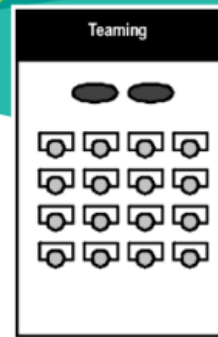- ◆ **Equally shared responsibilities**

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Exemplar Video

When & Why to Use

- **When you have a strong collaborative relationship with your co-teacher**
- **Gives students access to more than one teacher's perspective**
- **Less behavior issues**

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Modifications

ELA AND Math!

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