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Examining The Impact of a Coteaching Professional Development Training on Teachers and Their Students' Achievement

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Examining The Impact of a Coteaching Professional Development Training on Teachers

and Their Students' Achievement

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Submitted in Partial Fulfillment of the Requirements for the Degree of

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Dissertation Approval

This is to certify that the thesis presented to us by _____

on the _____ day of _____, 20___, in partial fulfillment of the

requirements for the degree of Doctor of Psychology, has been examined and is

acceptable in both scholarship and literary quality.

Committee Members' Signatures:

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Abstract

Educational legislation mandates that special-needs students should have access to the general education curriculum and be educated within the *least restrictive environment.* Coteaching (CT) has emerged as a way of educating students with disabilities in least restrictive environments. CT is defined as the "sharing of instruction by a general education teacher and a special education teacher or another specialist in a general education class that includes students with disabilities" (Friend, Cook, Hurley-Chamberlain, & Shamberger, 2010, p. 9). The purpose of this study was to determine if professional development training in a middle school not only changes teachers' understanding of the basic tenets of CT, but also elevates their confidence levels in providing appropriate accommodations and modifications to students with disabilities. An additional purpose of this study was to measure academic achievement outcomes of students taught in a CT classroom using a standardized formative assessment measure. The study revealed that this small sample of participants held a generally positive attitude toward inclusion and recognized the importance of this instructional approach. Although the change in teachers' understanding of the basic tenets of CT was not significant, a marginally significant increase in confidence levels was reported. When analyzing the influence of CT on student achievement, no evidence suggested a difference between scores of the intervention group and the control group. Although student achievement was not the primary goal of this study, ideally, evidence-based instructional practices are utilized to increase academic achievement.

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Chapter 1: Introduction

From its inception in 1975 to its reauthorization in 2004, the Individuals with

Disabilities Education Act (IDEA) mandated schools to shift the delivery expectations of

special education services. IDEA outlined the concept that special-need students should

have access to the general education curriculum and be educated within the *least*

restrictive environment. The IDEA shift moved to providing special-education services

within the general-education setting to the maximum extent possible instead of restricting

special-needs students to an exclusionary setting. As the service delivery changed toward

including special-needs students, educators needed to reinvent their educational practices.

Coteaching (CT). Similar to other educational legislation, IDEA left educators to

determine the best way to abide by these regulations. As educators began to explore

possible ways to include children in general-education settings, coteaching (CT) emerged

as a way of educating students with disabilities in least restrictive environments. CT is

defined as the "sharing of instruction by a general education teacher and a special

education teacher or another specialist in a general education class that includes students

with disabilities" (Friend, Cook, Hurley-Chamberlain, & Shamberger, 2010, p. 9). The

general educator and special educator are expected to share the roles and responsibilities

of the classroom, including developing and adapting lessons and assessments to reach a

diverse group of learners. In this way, students with disabilities are able to access the

general educational curriculum and continue to receive the special supports they need.

Cook and Friend (2012) developed the most common approach to CT. The

authors outlined six instructional approaches, and teachers were encouraged to choose the

instructional approach to CT based on goals and objectives of the lesson. The One Teach,

One Assist approach to CT is often observed in CT classrooms; this approach requires the

least amount of planning time to prepare (Cook & Friend, 2002). As coteachers become

more confident and comfortable in a CT classroom, they begin to utilize other

instructional approaches, such as Team Teaching or Alternative Teaching. Cook and

Friend's model assists teachers in selecting and implementing various CT approaches

with fidelity to the original model.

Research measuring the effects of CT reveals mixed academic, social, and

behavioral student changes, depending upon the type of measure used to assess outcomes.

Teachers report generally positive student outcomes when surveyed, including an

increase in academic achievement (grades, curriculum-based measures), attendance,

motivation, and socialization skills (Lundeen & Lundeen, 1993; Marston, 1996; Walther-

Thomas, 1997). However, when measuring academic progress using standardized

measures, the results suggest that CT may not have a significant impact on academic

achievement (Daniel and King, 2001; Rea, McLaughlin, and Walther-Thomas, 2002).

The limitations in CT research indicate that this teaching method is not supported by

strong empirical evidence. This may be due to the lack of standard delivery of CT within

classrooms because of limited teacher professional development opportunities.

Professional development. Professional development is described as a "vital

component of policies to enhance the quality of teaching and learning in our schools"

(Ingvarson, Meiers, & Beavis, 2005, p. 2). Professional development can influence

teacher change and improve student performance. Research suggests that on-going

professional development is more effective than a one-day workshop format.

Additionally, professional development through the use of coaching or mentoring has the

potential to empower teachers by instilling ownership of their professional growth.

Professional development opportunities for those implementing CT, therefore, can be an

integral part of improving instructional strategies (Friend, Cook, Hurley-Chamberlain, &

Shamberger, 2010; Murawski & Hughes, 2009). The more CT professional development

training that the teachers had, the greater was the teachers' confidence, including positive

attitudes and interest in inclusion (Pancsofar & Petroff, 2013).

Statement of the Problem

Even though professional development is an integral part of improving

instructional practices, teachers report limited professional development opportunities in

order to prepare for CT (Brinkmann & Twiford, 2012; Ingvarson, Meiers, & Beavis,

2005). The lack of professional development creates a practice of CT that is not

standardized; teachers may have false understandings of what CT entails. Instructional

practices may not be implemented in a way that is consistent with the research and best

practices. In turn, the research reflecting the impact of CT is not consistent, and there is

not sufficient evidence reflected in academic standardized assessments to suggest that CT

is an empirically sound practice. Although research suggests the need for professional

development to support teachers implementing CT, there is a lack of evidence-based

professional development surrounding this topic (Austin, 2001; Bergren, 1997; Friend et

al., 2010, Idol, 2006). The lack of professional development reduces the chances that

teachers are implementing CT in a way that produces reliable results.

Before assessing the academic, behavioral, and social impact of CT, it is

necessary, initially, to ensure that teachers understand how to implement CT.

Professional development is a way to provide this guidance, and research suggests that

professional development increases teachers' confidence, interest, and positive attitudes toward CT (Brinkmann & Twiford, 2012). The professional development seminar designed for this study was intended to increase teachers' knowledge of the basic tenets of CT. With an increase in knowledge, teachers may feel more confident and willing to implementing CT in their classrooms. Teachers are more willing to change their instructional practices if they see the influence that it has on student achievement (Guskey, 2002).

Purpose of the Study

The purpose of this study is to determine if a professional development training in a middle school changes teachers' understanding of the basic tenets of CT and improves confidence levels in providing appropriate accommodations and modifications to students with disabilities. An additional purpose of this study is to measure academic achievement outcomes of students taught in a CT classroom, using a standardized formative assessment measure. Teachers who participated in the professional development administered a standardized formative assessment measure before the professional development. To measure progress, a second administration of the formative assessment was administered to students at the completion of the professional development. Assessment results from before and from after the professional development will be used to determine, in general, the influence of the professional development training. This study proposes to address the following research questions:

Research Question 1:

What is the demographic information (age, race, gender, current teaching position, years of teaching, years of CT experience, amount of CT training) of participants participating in the professional development training?

Research Question 2:

Do teachers' understandings of the basic tenets of CT and also their confidence levels in providing appropriate accommodations and modifications to students with disabilities change as a result of a 6-week professional development training?

Research Question 3:

Is there a difference in student academic achievement as measured by a formative assessment tool before and after the professional development training?

Chapter 2: Literature Review

Introduction

Coteaching (CT) is an instructional practice that has gained momentum in the past 25 years. Bauwens, Hourcade, and Friend (1989) initiated this movement of research by including special-needs students within general-education classroom settings through the CT approach. As reflected in this literature review, a wave of CT research was conducted in the 1990s. When educational legislation changed at the turn of the 21st century, CT models were further refined and explored. Teachers generally reported a positive attitude toward including students with special-needs in their classrooms. In addition, teachers typically reported positive student social, behavioral, and academic outcomes after implementing CT. Teachers also indicated a need for further professional development opportunities to strengthen their CT instructional skills.

CT professional development opportunities have been effective in strengthening teachers' confidence levels and interest in including special-needs students. When developing CT professional development opportunities, on-going support should focus on providing teachers with the necessary feedback to assist in refining CT instructional strategies. When teachers implement CT with fidelity, this instructional approach has the potential to improve students' social, behavioral, and academic achievement outcomes.

Legislation

Legislation for education is often created in an attempt to increase student achievement. In turn, legal policies influence the instructional practices of teachers. CT, also referred to as inclusion, collaborative teaching, or team teaching, has changed the way that special-education services are delivered to students with disabilities; this change

was driven by national and state legislation. CT is defined as the "sharing of instruction by a general education teacher and a special-education teacher or another specialist in a general education class that includes students with disabilities" (Friend, Cook, Hurley-Chamberlain & Shamberger, 2010, p. 9). In 2011, Pennsylvania reported that 61.1% of students with disabilities, aged 6 to 21 years, spent 80% or more of their school days within a regular-education classroom setting (U.S. Department of Education, 2015). Because the majority of students are receiving their services within a regular-education classroom, teachers must understand the legal policies influencing the use of CT approaches.

Public Law 941-42 (The Education for All Handicapped Act of 1975) was developed as a result of Congress revealing that of the 8 million students with disabilities in this nation, more than half were not receiving appropriate special-education services. This legislation provided funding to states to identify, evaluate, and support special-needs students. In addition, Public Law 941-42 indicated that all students in the nation are entitled to a free, appropriate public education. Public Law 94-142 contributed to the movement of inclusive classrooms through the provisions of a free, appropriate public education (Bergren, 1997; Brinkmann & Twiford, 2012).

The No Child Left Behind Act of 2001 is another example of how student achievement has been addressed through national law. This act reformed the Elementary and Secondary Education Act of 1965 by increasing accountability measures for all students. Standardized testing was used to measure student outcomes and was administered both to regular-education and to special-education students. Consequently,

the CT use increased so that all students could obtain proficient or advanced levels on standardized testing (Brinkmann & Twiford, 2012).

No Child Left Behind Act of 2001 also stated that all teachers need to be highly qualified in the content area in which they teach. In order to be considered highly qualified, teachers needed to have an additional certification in a content area or have a degree (or the equivalent in credits) in the content area taught. Because special-education teachers historically received a degree in special-education, this regulation limited the content classes that these teachers could teach. However, special-education teachers could work with a highly qualified regular-education teacher in a CT classroom because it was considered "collaborating with a highly qualified teacher" (Bouck, 2007, p. 47). CT classrooms assisted in maintaining staff members who did not immediately meet the highly qualified criteria.

The Individuals with Disabilities Education Act (IDEA) replaced Public Law 941-42 in 2004. This law reaffirmed the need to provide students with a free, appropriate public education. Further, IDEA reaffirmed that special-education services should be provided in the least restrictive environment so that students with disabilities would have access to the general-education curriculum "to the maximum extent appropriate" (IDEA, 20 U.S.C. § 1412). IDEA stated that schools need to provide students with a continuum of services, ranging from least restrictive general education to most restrictive hospital or residential placement (Rozalski, Stewart, & Miller, 2010).

Each Individualized Education Program (IEP) team is responsible to interpret the least restrictive environment for each special-education student. As a result of court rulings, structured methods for determining the least restrictive environment for students

have been developed (Rozalski et al., 2010). In addition, questions that should be answered by IEP teams in order to determine the least restrictive environment are documented on the final pages of the IEP form. The questions include determining what additional supports can be provided to the student for success in the special-education, regular-education, and extra-curricular activities.

IDEA also permitted the use of response to intervention (RTI) for identification of learning disabilities. RTI is generally considered a three-tiered instructional model. Murawski and Hughes (2009) indicated that CT is a way to implement the RTI framework in schools. They defined RTI as being both systematic and proactive. Instead of waiting for students to fail within the general-education curriculum before they receive additional services, children are provided services based on data collected through the RTI process. Murawski and Hughes (2009) defined the three tiers of this model. Tier I instruction is accessible to all students and includes the general-education curriculum. Eighty percent of students are said to have their needs met within this tier. If a student is struggling in Tier I, Tier II may be recommended to provide additional short-term, intensive instruction to supplement the general-education curriculum. Seven to 25% of students receive Tier II supports. If a student is not making adequate process in Tier II, the educational team may consider continuing the instruction for a longer period of time or referring the child for Tier III. Five percent of students receive Tier III instruction, which is generally longer term, more intensive instruction. Tier III may include special-education services.

No Child Left Behind Act of 2001 and IDEA continued to be the statute to which schools in the U.S. abide. In December 2015, The Every Student Succeeds Act (ESSA)

was signed to continue the requirements that schools have high-quality teachers, using

high-quality interventions. Further, unlike previous educational laws, ESSA set standards

to prepare all students for college and career readiness. ESSA further reinforced the high

standards outlined both by No Child Left Behind and by IDEA. This statute will be

implemented during the 2017-2018 school year.

       Because schools are legally obligated to provide special-education services within

the least restrictive environment to the greatest extent possible for all students with

disabilities, CT has emerged as a way to include special-needs students in the general-

education curriculum. The next section will further define CT and the evolution of CT

models.

What is CT?

       In order for educators to implement CT, they must have a general understanding

of the theory and of its historical roots. Unlike traditional teachers, coteachers share

instructional responsibilities in order to achieve the common goal of educating a diverse

group of students (Sileo, 2011). In the 1950s, CT evolved from Trump's work in

secondary schools (as cited in Friend, Reising & Cook, 1993). Trump recommended the

use of this type of instruction to meet the individual needs of students during a time of

teacher shortage. Team teaching, which is similar to CT, was utilized in the 1950s. In this

model, a teacher who had expertise in the given content area would provide a lecture to a

large group of students. After the large-group lecture, the teachers would work on follow-

up activities with smaller groups of students.

       In 1968, Dunn questioned the reasons why special-education services were being

provided in a separate school setting. During the time at which he wrote his article,

students deemed *educable mentally retarded* were provided with special-education

services in alternative school settings with no access to general education. His article

presented reasons against excluding special-needs students. These reasons, including the

use of heterogeneous groups and the amount of progress children with special needs

made in general-education settings, were novel approaches to educating children with

disabilities in the 1960s.

Methods of CT continued to develop as schools integrated special-needs students

in general-education settings. In the 1970s and 1980s, aspects of CT were further defined

by Warwick (1971), who suggested the use of large-group instruction with a follow-up

lesson presented to a smaller group. Additionally, Geen (1985) recommended that

teachers collaboratively plan instruction for students. In the 1990s, CT occurred more

frequently in high schools as compared with middle schools and elementary schools

(Friend & Reising, 1993). Elements of CT developed in schools as general-education

classrooms became more diverse.

The most common approach to CT and the basis of most other models is that of

Cook and Friend (2012), who outlined six instructional approaches; within these teachers

were encouraged to choose the delivery method based on goals and objectives of the

lesson. The first approach, One Teach, One Observe, is delivered when one teacher

provides the instruction while the other teacher observes that particular student or group

of students. This approach can be used when data must be collected during an

instructional lesson. For instance, teachers can observe the best way to address a

student's understanding of instructions or monitor the socialization skills of students

working in cooperative groups. The implementation of this approach requires minimal

collaborative planning time; therefore, this is one of the most common approaches observed in inclusive classrooms.

Similar to the first approach, the second approach, One Teach, One Assist, requires little planning time for successful implementation. The One Teach, One Assist approach can be used when individual students need assistance from a teacher. While one teacher instructs the class, the second teacher works individually with struggling students within the whole-group lesson. This approach is the most widely used by teachers in the beginning stages of CT implementation. However, Cook and Friend (1995) suggested that it should be used sparingly because it does not allow the second teacher, often the special educator, to have the same level of authority as the teacher who is instructing the whole group.

Parallel Teaching, the third approach, is described as each of the teachers teaching half of the class simultaneously in order to provide a smaller learning environment. This smaller group setting can increase teacher interactions and student participation. The lessons delivered during parallel teaching can have the same content and be delivered to heterogeneous groups of students. Cook and Friend (1995) suggested using parallel teaching to review instructional material for an assessment or to prepare for a large-group discussion. This approach requires shared planning between the teachers to determine the concepts to be covered during parallel teaching lessons. Because of the required planning time, this approach is more difficult to implement.

During Alternative Teaching, the fourth approach, one teacher teaches a large group while the other teacher instructs a smaller group. This approach creates an opportunity for a small group to receive more individualized instruction for remediation

or for preteaching skills. For instance, students with learning disabilities may require

preteaching of instructional material before a larger group lesson. Alternatively, students

who are gifted may receive enriched activities through the Alternative Teaching

approach. However, because the smaller group is generally composed of homogenous

learners, students participating in the smaller group lesson may feel stigmatized.

Coteachers need to plan the delivery of remediated or enriched instruction carefully

within the general-education classroom in order to address the social implications that

may result from this approach.

Finally, Team Teaching is delivered by both teachers at the same time to the

entire class. Whether the lesson involves a discussion, direct instruction, or the

monitoring of independent work, both teachers are working together to deliver

instruction. Cook and Friend (1995) suggested that this approach requires coteachers to

feel comfortable in delivering instruction together. This comfort is grounded in a mutual

trust between the coteachers. Because of this necessary trust that may take years to

establish, Team Teaching is perhaps the most difficult approach.

Additional models or differentiated instructional approaches have been built upon

Cook and Friend's six instructional approaches. Vaughn, Schumm, and Arguelles (1997)

endorsed alternative supports within the One Teacher, One Assist model. Walther-

Thomas (1997) defined interactive teaching as an additional method of instruction in

which the coteachers take turns delivering instruction every 5 to 10 minutes. Fishbaugh

(1997) further developed a teaming model to include the consulting model and coaching

model. Within the consulting model, one teacher serves as a consultant to the other

teacher in order to recommend instructional adaptations or modifications. In a coaching

model, one teacher observes the other teacher's instruction to provide feedback on the

delivery.

The current study will focus on Cook and Friend's model of CT because

alternative models are derived from Cook and Friend's theory. Additionally, Cook and

Friend's approaches are described in detail; this is helpful because the teachers who

received the professional development were in the beginning stages of implementation.

Unlike Fishbaugh's model, Cook and Friend's approaches provide not only a specific

method of implementing CT in an inclusive classroom, but also the specific roles of each

coteacher. The suggested structure may help novice teachers or teachers with less

experience in CT to implement these instructional practices with fidelity to the original

model.

Implementation

Teachers have reported the importance of administrative support to the success of

CT (Idol, 2006; Walther-Thomas, 1997). Implementation begins with designating the

coteachers, which is often done by administrators. Although pairing teachers often is a

result of scheduling or experience and areas of certification, research suggests that the

coteachers need to be carefully selected. Simmons and Magiera (2007) suggested that

grouping of teachers should be based on willingness to implement CT strategies and that

the partners should remain together for multiple years if they are successful. In addition,

Lehr (1999) recommended that teachers should volunteer to participate in a CT

classroom. Principals should not only provide materials that teachers request for

implementation, but also should visit classrooms in order to be fully involved.

Administrative support is essential in order for changes to occur within a school.

The initial step of creating a positive CT experience is rapport building. Rapport between coteachers is a foundation of a successful CT relationship and should include the exploration of roles and responsibilities (Dieker, 2001). Sileo (2011) suggested that the beginning stages of building a positive relationship between coteachers should include two tenets: Coteachers need to understand the goals of their classroom by communicating to each other in a manner similar to that of a couple in the early stages of a marriage and need to understand that communication is key in order to blend different perspectives and experiences successfully.

After a general understanding of CT is developed, the coteachers need to plan shared responsibilities and determine roles. The following questions should be answered prior to implementation: Who will plan lessons? Teach lessons? Prepare materials? Choose CT models? Choose assessments? Grade student work? Conversations about the classroom environment and the presentation of a CT classroom should also be conducted during the rapport-building stage. Teachers need to discuss their classroom preferences and "pet peeves" before the school year begins. Additionally, both teachers need to have ownership of the classroom (Magiera, Smith, Zigmond, & Gebauer, 2005).

Often, the preparation aspect of CT is forgotten, thus putting the foundation of the relationship between coteachers at risk. If time to build rapport is insufficient, Soodak, Podell, and Lehman (1998) suggested that hostility toward the students with disabilities who are included in the classroom may be a result. Another consequence of poor rapport building is a misunderstanding of roles and responsibilities. Fennick and Liddy (2001) surveyed 168 general- and special-education teachers to obtain information on roles and responsibilities. Both general-education and special-education teachers reported sole

responsibility for instruction and behavior management. These reports suggest that the teachers in this study did not have agreed-upon responsibilities. Differences in ideas of roles and responsibilities and lack of planning together may cause teachers to return to their more traditional roles.

The outcomes of not discussing roles and responsibilities can be detrimental to the students. Magiera and Zigmond (2005) examined 100 middle-school CT classrooms when the special-education teacher was present and when he or she was absent from the inclusive classroom. The authors suggested that if roles and responsibilities have not been discussed prior to the implementation of CT, general-education teachers spend little time conducting one-to-one instruction with special-needs students. Further, when the special-education teacher was present during instruction, the general-education teacher spent even less time with the special-needs students. Without the appropriate amount of attention during instruction, special-needs students may feel excluded from the general-education setting.

If time is not dedicated to building a positive relationship and shared thinking, the CT experience will also be difficult for the coteachers. When problems arise, communication is a key factor. Teachers must act in a thoughtful manner and must address minor problems before the problems become larger; this is essential to conflict resolution (Ploessl, Rock, Schoenfeld, & Blanks, 2010). When a problem arises, coteachers need to reflect on the rapport that they have built prior to the CT implementation. Sileo (2011) suggested adhering to the following steps to resolve problems: teachers should identify the common goal, brainstorm different resolutions, analyze each resolution, choose a resolution together, and take action. After the action

has been implemented, the plan needs to be evaluated in order to determine effectiveness. When resolving conflict, teachers also should respect cultural differences (Plosessl et al., 2010). As evidenced by the given research, building a positive relationship is the initial key to the implementation of CT.

Once coteachers have established a positive rapport, they should plan CT lessons carefully. Doing so necessitates a common planning time (Fennick & Liddy, 2001; Lehr, 1999; Magiera et al., 2005; Mastropieri et al., 2005; Murawski & Hughes, 2009; Simmons & Magiera, 2007; Wischnowski, Salmon & Eaton, 2004). Dieker (2001) found that teachers expressed a need for common, uninterrupted planning time of approximately 25 minutes per school day. Planning of the curriculum should involve the special-education teacher (Simmons & Magiera, 2007). The general-education teacher should be considered the content specialist, and the special-educator, the learning specialist. These teachers need time to plan their lessons, accommodations, and modifications together during this common time. Dieker (2001) suggested that in order for IEP goals to be addressed within the curriculum, both educators need to have an understanding of the scope of the curriculum. Both teachers should provide suggestions for instruction and monitoring, and these decisions should be based on student outcomes.

Assessment of student outcomes is integral to the delivery of instruction. Conderman and Hedin (2012) suggested that coteachers should develop and plan ways of assessing student progress together. A variety of assessments should be used in the classroom, including the use of curriculum-based assessments, performance-based assessments, formative assessments, and summative assessments (Conderman & Hedin, 2012; Dieker, 2001). Students with special-needs may require an alternative assessment,

such as the use of a portfolio or teacher observations. Teachers must also reflect on

student outcomes and satisfaction gained from instructional methods (Ploessl et al., 2010)

when novel approaches to instruction and assessment are used. Objectives of instruction

and outcomes of CT approaches can be measured, using carefully coplanned assessments.

     Another area that requires careful planning prior to CT implementation is student

discipline. Teachers who create a positive classroom environment may reduce the

prevalence of discipline problems. Daniel and King (1997) recommended that teachers

should use a variety of classroom management strategies that are both preventative and

consistent. Peer support within a general-education classroom appears to be helpful in

creating a positive classroom climate. Teachers can also create a positive classroom

environment by allowing choice of assignments and by using accepting language. High

expectations should be employed for all students, and additional levels of supports could

be provided as needed for special-needs students to attain the expectations (Dieker,

2001). When creating a positive classroom environment, teachers should strive to create

classrooms that are accepting and are tolerant of differences.

     Additionally, the methods used to plan seem to vary, based on school

expectations. Simmons and Magiera (2007) assessed three different high schools, and the

results suggested that all three high schools were planning in different ways. For instance,

the coteachers at one high school were expected to plan lessons together, yet at another

high school, the general-education teacher planned the lesson and the special-education

teacher modified the curriculum to meet the needs of students with disabilities.

Administrators may need to provide a planning framework for teachers in order to outline

expectations.

After the lessons are planned, coteachers can begin to integrate Cook and Friend's approaches to the content of the lessons. In the early stages of a CT relationship, teachers often rely on the One Teach, One Assist approach. In a study conducted by Magiera, Smith, Zigmond, and Gebauer (2005), CT math classes relied heavily on the One Teach, One Assist approach. That is, the general-education teacher delivered instruction to the large group and the special-education teacher monitored individual student needs. In only three observations did the special-education teacher deliver the instruction; only two small-group instructions were observed. This approach also has been used more frequently, most likely because implementation requires a limited amount of common planning (Wischnowski, Salmon & Eaton, 2004).

As coteachers become more comfortable with each other and also with the concept of providing instruction together, other instructional methods may begin to be integrated. Austin (2001) suggested that teachers reported using cooperative grouping and small-group instruction in a CT classroom. Idol (2006) recommended the use of a mixed approach to instruction that includes the use of consulting teaching and cooperative grouping. In alternating traditional roles in the One Teach, One Assist CT approach, students develop the perception that both teachers have the same level of authority in the classroom. In a study conducted by Walther-Thomas (1997), teachers found that if the general-education teacher began the monitoring of individual students during independent work time prior to the special-education teacher, the credibility of the special-education teacher rose. In other words, the special-education teacher was not perceived to be in the role simply and only of assisting the general-education teacher. Additionally, by allowing special-needs students to begin working as the general-

education teacher checked on a few other students, the independence of the special-needs students increased. Alternative roles of each coteacher may assist in building rapport among teachers and may level each coteacher's perceived power within the classroom.

Careful selection of coteachers and meticulous planning may not fully protect coteachers from experiencing challenges, however. Challenges reported may include the cost of CT, the time required, or the limited space in a school building (Friend, Cook, & Reising, 1993). Problems with coplanning may also arise as other teacher duties may infringe upon common planning time (Walther-Thomas, 1997). Additionally, high-stakes testing has been found to detract from the potential for special-needs students to receive the supplemental support they may need in a general-education classroom. The goal of many general-education teachers is to teach content that will be covered on the high-stakes testing because their students' scores may be used to measure the teacher's efficacy. Therefore, in such situations, the content may take precedence over the special-education modifications (Mastropieri et al., 2005).

Challenges can be prevented or reduced by giving teachers the time necessary to build positive relationships, establish roles and responsibilities, and plan together. Much effort needs to be employed prior to the implementation of CT. Administrators can support teachers by accepting volunteers with CT experience and by providing the necessary time that CT requires. Once the implementation process has begun, teachers will require time for reflection, evaluation, and support from administration to attempt novel instructional approaches.

Teachers' Attitudes

When changes are made in schools, teachers' attitudes toward change can influence the likelihood of success. When asked to choose the most important aspect of CT, in a study by Weiner (2003), the majority of the teachers reported that a teacher's attitude was the first or second most important aspect. There is an overwhelming amount of research to suggest that the majority of teachers are in favor of CT. However, there is also research to suggest that there were individuals who were not supportive of inclusive classroom.

Weiner suggested that there are three levels of schools that differ in their responses to CT. The Level I school provided whole class, one-note instruction in the general-education classroom. A packaged curriculum is provided to special-education students in an alternative setting and is not related to the general-education curriculum. Level II schools displayed varying levels of inclusive practices throughout the school building. Although some teachers were implementing instructional practices to ensure that all students can access the general-education curriculum, other teachers were not. Level III schools held high expectations for all students and accepted the challenges of teaching low-performing students. The classes were heterogeneously grouped, and teachers were given common planning time to review assessment results and plan lessons with appropriate accommodations or modifications derived from the assessment results. Although the goal was for schools to implement CT at the Level III, often this type of change takes many years to achieve.

Generally, teachers reported a positive outlook when including special-needs students (Austin, 2001; Bergren, 1997; Fennick and Liddy, 2001; Idol, 2006; Wischnowski, Salmon & Eaton, 2004). Research has suggested that, generally, special-

education teachers, when compared with general education teachers, reported a more

favorable attitude toward special-needs students (Austin, 2001). This may be related to

the experiences that special-education teachers have received during their teacher training

programs (Buell, Hallam, Gamel-McCormick, & Sheer, 1999). For instance, Bergren

(1997) conducted a study of 150 general-education and special-education teachers

working in a suburban district. Teachers who reported a greater amount of special-

education training felt more confident in the ability to modify assignments and

curriculum. Further, teachers who participated in the professional development training

were likely more confident in implementing CT, and their attitudes were more likely to

be positive.

A second study conducted by Male (2011) supported the influence of professional

development on overall teacher attitudes. Male conducted a study of 48 teachers enrolled

in a special-education Master's program in the United Kingdom. The teachers completed

the Attitudes Towards Inclusive Education Scale (ATIES) before and after a 10 week

module of 10 three-hour teaching sessions, 1-2 hours of tutorial sessions, and 30 hours of

independent study. Male found that although the attitudes towards these teachers were

relatively higher at the beginning of the training because they had an interest in learning

more about special-needs students, their overall attitudes were more positive after the

training module. These results again suggested that with more knowledge comes a more

positive attitude toward inclusion.

Teachers in favor of inclusive classrooms reported the following reasons in

support of CT. In a CT classroom, teachers reported that they learned new skills from

their CT partners (Austin, 2001; Bergren, 1997). Additionally, teachers reported that their

students showed improvements in their academic and social development, which influenced their overall attitudes toward CT (Bergren, 1997; Idol, 2006). Teachers reported a favorable attitude toward inclusive classrooms as they observed their students' achievements and their own personal growth.

An example of teachers' attitudes having been influenced by student achievement was highlighted in an article written by Haring and Kelner (2015), coteachers in a middle school building. In this article, the authors reflected upon the positive student outcomes observed during a CT multidisciplinary project. They explained that they had, collaboratively, to reinvent classroom activities to integrate multiple subjects with a more diverse student population; these students excelled in a CT environment. The coteachers were so impressed with the student engagement and progress toward educational standards that they increase the number of CT projects in the years to follow.

Alternatively, there are some teachers who expressed concern and a negative attitude toward CT. Soodak, Podell, and Lehman (1998) conducted a study of 188 general education teachers. The outcome suggested that general-education teachers discriminate against students, based on their disabilities. These teachers showed more hostility toward students with learning disabilities, intellectual disabilities, and behavioral disorders. Further, Soodak et al. found that the more experienced teachers were, the less receptive they were toward inclusion. The authors suggested this hostility may actually be frustration from previous CT experiences. Given the date of this research article, perhaps teachers were adjusting to the shift in educational placement of special-needs students. The historical time frame of the article by Sodak et al. should be considered when comparing more current research about teachers' attitudes towards CT.

Although research has suggested that the majority of teachers are in favor of inclusive classrooms, preparation and training influence their overall attitudes. Teachers' attitudes may change as they experience this type of classroom, and it is important that the instructional approaches and their influence on student outcomes are evaluated carefully. Administrators should support the changes within the schools as the instructional strategies move toward more inclusive practices.

Student Outcomes

Does CT have the research to suggest that it is an evidence-based practice? Analyzing the academic, social, and behavioral impact of CT is instrumental to determine the efficacy of inclusion. A variety of measures have been used to account for the effects of CT. However, when determining the influence of CT on student outcomes, research has indicated mixed results. The results varied depending upon the measures used to assess outcomes, such as teacher reports as compared with standardized academic assessments. Research has suggested that perhaps a combination of service delivery models were most effective and empirically sounds.

When surveyed, teachers generally reported positive student outcomes for special-education and for general-education students when asked to reflect on the influence of CT (Austin, 2001; Mastropieri et al., 2005; Walther-Thomas, 1997). With general-education students who were considered low-performing yet ineligible for special-education, Walther-Thomas (1997) suggested that teachers found students performed better in a CT class as compared with a traditional classroom setting. Austin (2001) found that 91.3% of special-education teachers and 70.5% of general-education teachers reported collaborative teaching to be a beneficial instructional practice.

Academic

When measuring the effect of CT on academic progress for special-education students, grades and standardized assessment measures were considered. Banerji and Dailey (1995) measured success of students with specific learning disabilities who were included in the general-education curriculum. The special-needs students made gains comparable with their nondisabled peers in reading. Wischnowski, Salmon and Eaton (2004) found similar results as Lundeen and Lundeen (1993) because special-education students earned grades similar to general-education students' grades when appropriate accommodations and modifications were provided within a CT classroom.

Is there evidence to suggest that CT is the best intervention for inclusion? Lundeen and Lundeen (1993) conducted a study to compare 318 students' academic achievements when using the resource model (conducted in year 1) and a collaborative teaching program (conducted in years 2). The collaborative teaching program consisted of a general-education teacher and special-education teacher who shared responsibilities within an inclusive classroom. Although special-needs students performed less proficiently on a standardized reading comprehension test than their regular-education peers, special-education students earned grades similar to the regular-education students. Further, special-education and general-education students performed better on their first semester grades than in the previous year when taught within the resource model. However, as the year progressed, grades became more similar to the previous year.

Walsh (2012) indicated that the successful implementation of CT had positive effects, as evidenced on a state standardized test. CT instructional strategies were imparted as a district-wide initiative and included professional development teacher

trainings. Results concluded that special-needs students made twice as much progress in

reading and math, compared with the overall student population during the years in which

CT was implemented, as evidenced on the state assessment. In turn, CT assisted the

district in closing the achievement gap between regular-education and special-education

students. Walsh's study suggested that when implementing CT with a district-wide

initiative supported by professional development training, student academic outcomes

were impressive.

Conversely, some standardized assessments indicated limited evidence of CT

effectiveness. Rea, McLaughlin, and Walther-Thomas (2002) conducted a study in two

middle schools. One middle school implemented a resource model, which included,

primarily, pull-out special-education services. The special-education teacher was not

included in teacher team meetings. The second middle school implemented a "teaming

model" of inclusion. The teams were based on content and were assigned one or two

special-education teachers who attended team meetings regularly. Outcomes were

measured by grades and performance on the Literacy Passport Test (LPT) and Iowa Test

of Basic Skills (ITBS).

This study suggested that students with specific learning disabilities displayed no

significant differences in reading and writing performances on the LPT, when comparing

service delivery models. On the ITBS, there was a higher standard score for students on

the language arts and math subtests taught in a CT classroom and comparable scores in

the areas of reading comprehension, science, and social studies. The mixed results of

comparing service delivery models for special-needs students provided limited empirical

evidence for all subject areas. This was also supported by Daniel and King (1997) who

found that academic gains across various subjects were not evident. Some data suggested

positive outcomes; however, there were other studies that found no significant differences

when comparing service delivery models.

A combination of pull-out instruction and CT approach was, perhaps, the most

effective and empirically supported model for including students within the least

restrictive environment. Marston (1996) compared student reading achievement when

instructed in different environments. The instructional models included inclusive

classroom only, pull-out programs only, and a combination of both pull-out and

inclusion. Students showed the greatest reading growth, as measured by a curriculum-

based assessment, from the combined service delivery model. The author suggested that

schools should provide a continuum of services so that each student's needs were

successfully met.

Klingner, Vaughn, Hughes, Schumm, and Elbaum (1998) suggested similar

findings to Marston (1996). Klingner et al. measured student reading and writing

outcomes after providing CT instruction to 114 students in Grades 3-6 in an elementary

school. The teachers were trained in 4 instructional methods designed to address

heterogeneous classrooms during four professional development sessions and monthly

after school meetings. When measuring outcomes for students with learning disabilities,

20% of the special-needs students showed no improvement on a reading assessment

given at the beginning and the end of the school year. This research revealed that there

was a subgroup of learning disabled students that have severe reading disabilities, and

their needs cannot be addressed in a general-education classroom or with curriculuma

designed for heterogeneous groups.

Social and Behavioral

Empirical evidence suggested that inclusion of students with disabilities in a general-education setting had positive social and behavioral implications. Data regarding social and behavioral implications of CT was gathered by teacher reports on surveys. As compared with academic outcomes, teachers generally reported greater positive student outcomes, particularly in the areas of social and behavioral outcomes.

Regarding behavioral implications, Marston (1996) and Walther-Thomas (1997) indicated that students in a CT classroom had better attendance records. There was also no significant difference in behavioral infractions among students taught in a special-education setting as opposed those taught in an inclusive setting. This suggested that even though the curriculum was more difficult in a general-education setting, the behavior of the students did not change significantly. Banerji and Dailey (1995) suggested that inclusion decreased the stigma of special-education services because special-needs students were not identified within the inclusive classroom setting. The self-concepts of the students with learning disabilities increased, and the classroom environment supported typical peers welcoming and accepting students with specific learning disabilities. Walther-Thomas (1997) indicated that both non-disabled students and special-education students improved in their social skills and often became friends outside of school as well.

However, if the ratio of special-education students and general-education students was not optimal within a classroom, a negative influence on behavior may have resulted. Daniel and King (1997) found that teachers reported more behavioral problems in a clustered inclusive setting due to varying ability levels and the teacher's inability to focus

on overall general classroom management. Careful consideration of each student's strengths and needs should take place when planning the population within CT classrooms so that classroom management can be effective.

When analyzing the academic, social, and behavioral impact of CT, the results were mixed. Although there was some empirical evidence that suggested the grades and performance on curriculum-based measures of special-needs students were comparable to general-education students, there were varying results when outcomes using standardized assessments were measured. Generally, teachers reported positive academic, behavioral, and social outcomes; however, the data were mixed when measuring academic achievement.

Zigmond (2003) reviewed research from the past 35 years to determine if there was evidence for or against CT. The author suggested that there was not enough research to conclude that a single service delivery model was more effective, compared with the others. Zigmond suggested that it was difficult to design research studies that have true independent and dependent variables and control groups to compare. And, generally, the available research limited student samples to those with specific learning disabilities. The author suggested that other disabilities need to be evaluated further.

The expectation of service delivery varies among schools, suggesting that Zigmond's theory about measuring student outcomes is accurate. Opportunities for professional development related to CT can be an avenue to provide teachers with the skills necessary for successful implementation. However, research has suggested that there were limited opportunities for teachers to participate in a standard CT professional development. The next sections of this literature review will further analyze professional

development in the schools. It will also outline the most essential information to include
in CT professional development.

Professional Development in Schools

Professional development is described as a "vital component of policies to enhance
the quality of teaching and learning in our schools" (Ingvarson, Meiers, & Beavis, 2005,
p. 2). Professional development can influence teacher change and improve student
performance. Regarding instructional practices that have positive effects on student
outcomes, Guskey (2002) found that the experiences within the classroom were truly
what changed teachers' instructional approaches. Guskey suggested that teachers' beliefs
and attitudes were altered by the experiences they had in their classrooms. The
opportunity for professional development initiated the cycle of change, but the positive
classroom experiences imparted change.

Too often, school administration imposes professional development upon
teachers. Teachers were more likely to change if they had opportunities to choose the
content of professional development with school administration (Buell et al., 1999;
Rhodes & Beneicke, 2002). A choice of content created a sense of autonomy that
increased the likelihood for positive attitudes toward change. Professional development
trainings can change instructional practices; therefore, developing an understanding of
the best ways to deliver professional development is imperative. Guskey (2003) analyzed
studies conducted by the following agencies: National Staff Development Council,
National Partnership for Excellence and Accountability in Teaching, National Institute
for Science Education, National Governors Association, Eisenhower Professional
Development Program, Education Testing Services, Association of Supervision and

Curriculum Development, Educational Research Services, and the American Federation

of Teachers. He found that there was little agreement in defining the best practices of

professional development among these organizations.

Although there were differing opinions among national agencies, there was some

agreement upon most effective formats and duration. Teachers often received

professional development in the format of a one-day, isolated workshop experience

because it was most cost-effective. However, research has suggested that in order for

professional development to influence student achievement, the duration must exceed

that of a one-day workshop (Abdal-Haqq, 1996; Garet, Porter, Desimone, Birman, Suk

Yoon, 2001; Wayne, Sukyoon, Zhu, Cronen, & Garet, 2008).

Although a workshop format was the most common type of professional

development activity, mentoring and coaching through an induction program was also

generally accepted. IDEA outlines the importance of highly qualified teachers, and part

of obtaining permanent teaching certification in Pennsylvania is to participate in a teacher

induction program. Although each school district offered different material covered

during an induction program, new teachers were typically assigned to a mentor teacher

for more private and on-going professional development opportunities.

Rhodes and Beneike (2002) indicated that although there was no common

definition of coaching or mentoring, "both coaching and mentoring are complex activities

deeply associated with the support of individual learning" (p. 301). There were many

benefits of using the mentoring and coaching format as means of professional

development. Coaching had the potential to empower teachers by instilling ownership of

their professional growth. Leadership teams determined what teachers needed in order to

be successful in the early stages of their careers when developing the content delivered during mentoring sessions. Also, mentoring created a safe relationship in order to share concerns and fears of change, and it had the potential to support the teachers through changes.

How should materials be presented during teacher professional development? Research has suggested that active learning experiences were most efficient. Additionally, the material presented were content specific in order to increase teachers' content knowledge and instructional practices (Birman, DeSimone, Porter, & Garet, 2000; Garet et al., 2001; Guskey, 2003). An evaluation of the professional development training was the most important element that was often disregarded. Guskey (2000) wrote that the evaluation of professional development needed to be formative (on-going), summative (final), and the assessments needed to be based on the goals of the professional development training. He also recommended analyzing the five levels of professional development adapted from Kirkpatrick's (1959) model. The levels included: how the participants reacted, what the participants learned, if the professional development was supported by the organization, if the information could be applied to the classroom, and if the professional development experience influenced student achievement. In order to gather evaluation data, Guskey recommended using questionnaires, structured interviews, and pre/post assessments. Additionally, in regard to student outcomes, he recommended using a variety of academic, behavioral, and social data collected throughout the school year to determine the influence of professional development trainings.

CT Professional Development

The current study was designed because of consistent research indicating that professional development is necessary to increase the successful implementation of CT (Friend, Cook, Hurley-Chamberlain, & Shamberger, 2010; Murawski & Hughes, 2009). There are limited empirically-based CT professional development programs available for teachers. In a study conducted by Brinkmann and Twiford (2012), 53% of general-education and 60% of special-education teachers felt that they received the training, coursework, and field experiences to be prepared to implement CT. This data suggested that approximately half of teachers surveyed reported insufficient CT training experiences. Brinkmann and Twiford's study illustrates the need for CT professional development. Weiner (2003) suggested that professional development could assist in moving toward the systemic instructional practice change.

It was suggested that if teachers received CT professional development, they would be better equipped and would have a better attitude toward this instructional practice (Buell, Hallam, Gamel-McCormick, & Sheer, 1999; Soodak, Podell, & Lehman, 1998). Soodak et al. found that teachers who had more knowledge of CT instructional strategies report less anxiety and increased personal efficiency. Pancsofar and Petroff (2013) conducted a survey of 129 general and special-educators to determine if CT professional development opportunities had an influence on teachers' confidence, attitudes, and interest. The authors found that the more professional development opportunities teachers had, the more confidence they reported, including their possession of positive attitudes and interest in inclusion.

Ploessl, Rock, Schoenfeld, and Blanks (2010) suggested various aspects of CT that need to be addressed within professional development activities. This included

aspects of communication, preparation, instruction, and conflict resolution. Brinkmann and Twiford (2012) found that general-education teachers and special-education teachers reported that communication was the most important skill for CT. Ploessl et al. suggest that teachers can strengthen relationships with their coteachers by understanding their own communication styles and coteacher's strengths and needs, as compared with their own. Activities surrounding the development of a positive rapport between coteachers were often not included in professional development trainings, but these were an integral part of an effective professional relationship. Teachers also reported the need for more professional development in the areas of accommodations, modifications, lesson planning, assessment, and behavior management (Buell, Hallam, Gamel-McCormick, & Sheer, 1999; Brinkmann & Twiford (2012). Idol (2006) suggested assisting teachers in the ability to use heterogeneous cooperative grouping when designing professional development.

Conclusion

The most effective ways of delivering professional development and necessary content for CT implementation was integrated into the professional development training designed for the current study. This study was designed to provide evidence that professional development training would support teachers in implementing CT within their classrooms. As suggested within this literature review, CT can be an integral instructional practice that can change student outcomes and improve teachers' attitudes and confidence toward including special-needs students. Further, CT is an instructional approach that schools can use to abide by educational legislation and provide the least

restrictive environment for special-needs students. With professional development

trainings, a standard way of delivering CT in classrooms can be developed.

Chapter 3: Methods

Overview

This pilot study is proposed to examine the role of professional development in changing teachers' understanding of the basic tenets of CT as well as its effect on the confidence levels of implementing the CT approach. This examination used surveys to compare each participant's understanding of CT, each one's confidence level, and instructional practices before and after an on-going professional development opportunity. Comparisons of student achievement as a result of teachers' participations in a CT workshop were also measured through a formative assessment tool administered before and after the professional development.

Participants

The participants recruited for this study were employees of a suburban school district and lived within driving distance of this district in Pennsylvania. A total of 11 middle-school teachers of varying certifications and years of experience participated in this nonrandom study. To be included in the study, participants had to hold a Pennsylvania Teaching Certificate. Individuals who did not have a Pennsylvania Teaching Certificate were not eligible to be participants in this study. Teachers with varying levels of experience of CT were included in the study. Coteachers were encouraged to participate together, but this was not a requirement. Eight of the twelve participants were implementing CT at the time of the professional development opportunity.

To advertise the professional development training, the principal of the middle school sent all certified teaching staff an e-mail to describe the specific content of the

professional development. Relevance, objectives, and information about the presenter were included as part of this e-mail. Teachers interested in the experience were asked to attend a brief informational meeting after school with the leader of the professional development. At the informational meeting, more detailed information was provided about the content, and teachers were given an opportunity to ask questions. Teachers also provided their available times and situations so that the sessions could be scheduled. Twelve teachers chose to participate because they had an interest in the content of the professional development.

After Professional Development Session 1, Participant 05 decided not to continue in the study because of personal reasons. Participant 05 spoke with the leader of the professional development in person to discuss discontinuing participation. As a result, post survey data for this participant were not collected.

Measures

Surveys were developed for this study to assess changes in understanding the basic tenets of CT and the confidence levels of implementing the CT approach. Presurveys and postsurveys were developed to analyze the changes and the influence of the professional development. The first part of the CT professional development survey posed questions about each participant's demographic information (see Table 1). This demographic information included gender, age, race, and years of teaching experience. Further questions were posed in the demographic section, specifically about teaching and experience in CT. In addition, participants were asked to provide hours of previous CT professional development.

The second part of the survey measured the participants' understanding of the basic tenets of CT and their confidence levels in providing appropriate accommodations and modifications to students with disabilities. The first item asked participants to define CT in their own words. The second item asked participants to explain the reasons why CT is important. This item provided insight regarding each participant's beliefs about CT. The next two items, using a 5 point Likert scale, measured confidence levels in CT and also knowledge about providing accommodations and modifications in an inclusive classroom. The fifth item asked teachers to explain their understanding of accommodations and modification to determine if teachers understood the difference between these terms and could provide examples of each. The sixth item asked teachers to rate aspects of CT based on their personal opinions regarding the levels of importance. The choices for the sixth item were based on common areas of CT for which teachers within the research reported a need. This item provided priorities for the implementation of CT from the participant's perspective. The presurvey concluded with the sixth item (See Appendix A).

The postsurvey included Items 1 through 6 just described, followed by an additional reflection section. Item 7 asked teachers to describe the most beneficial professional development activity from their perspectives. Item 8 asked participants to explain any areas that should be included in future CT professional development trainings. Finally, participants were asked to rate their overall experiences of the professional development training, using a 5-point Likert scale (See Appendix B).

Presurveys and postsurveys for each participant were compiled and placed in an individual manila envelope. Participants were issued a number, which was written on the

surveys as well as on the envelopes, to preserve anonymity. Names of each participant were labeled on the outside of the envelopes. Presurveys were distributed through the school's main office where each participant had a designated mailbox. Directions for distribution and collection of the presurveys were provided to participants via e-mail.

Directions for the postsurvey were given to participants during the sixth professional development session. Envelopes with both surveys were distributed to participants at the final session as well. The participants were asked to return their surveys after the completion of the training. Surveys were returned to the leader of the professional development through the main office mailbox system.

A formative assessment measure was used to determine if student achievement changed as a result of teacher participation in the professional development training. The Classroom Diagnostic Tools (CDT) is an individually administered diagnostic assessment developed by the state of Pennsylvania. Students at this middle school took this formative assessment multiple times per year to measure progress toward Pennsylvania Assessment Anchors and Eligible Content included in the Pennsylvania System of School Assessments (PSSA). Students in Grades 6 through 8 were administered the CDT in September 2015, prior to the professional development, in the areas of Math, English Language Arts, and Science. The CDT was administered a second time after the professional development in December 2015. CDT data for students who received instruction from teachers who participated in the professional development were compared with data for students of teachers who did not participate in the professional development training.

Procedure

The professional development series consisted of six 1 hour sessions. Based on availability, participants chose to attend morning or afternoon sessions. Sessions were scheduled before and after the participants' contracted workdays. A room in the school's library was used for the professional development.

The objectives of the professional development included providing general and special education teachers with the opportunity to apply CT models and strategies to their classrooms and also provided them with opportunity to reflect upon their instructional practices. Because planning time is required in order to implement CT successfully, time for planning was integrated into the sessions. Most sessions were similar in structure and included a brief lecture about the topic, time for discussion and practice, and a weekly goal for each teacher to implement in his or her classroom before the next session. Weekly goals were developed based on the session's content with the hope that teachers would immediately apply new instructional practices. The leader of the professional development training served as a coach or mentor while teachers were practicing their new skills. The last session concluded with a teacher discussion and reflection on CT implementation. The following topics were covered during the sessions:

Session 1. An introduction of CT and overview of educational legislation related to CT were presented. Checklists of coteacher roles and responsibilities were given as a guide for teachers to begin discussing roles and responsibilities within their CT classroom.

Session 2. Cook and Friend's (2012) CT model was presented to teachers. Suggestions for lesson plan templates were also provided, and teachers were given time to plan lessons, integrating Cook and Friend's model.

Session 3. Teachers were presented with handouts explaining examples of and the differences among accommodations and modifications. Teachers discussed the implementation of these concepts within their classrooms and were given time to plan for differentiation.

Session 4. This session was a follow-up from the discussion of accommodations and modifications; teachers were presented with a handout explaining these different levels of accommodations and modifications. Teachers also discussed examples of how to coordinate curriculum standards with individual student goals.

Session 5. At this session there was a discussion of the importance of having a common agreement among coteachers when managing student behavior.

Session 6. The final professional development session provided a time for teachers to reflect upon their current CT practices and future directions.

Chapter 4: Results

Overview

Descriptive and frequency data obtained from teacher surveys were examined

prior to analyzing the influence of a 6-week professional training in co-teaching (CT). A

total of 12 teachers completed the presurvey and 11 teachers completed the postsurvey.

Of the 11 teachers, one teacher did not answer all questions on the postsurvey. The

summary data are provided throughout this chapter organized by research question.

Research Question 1

What is the demographic information (age, race, gender, current teaching

position, years of teaching, years of CT experience, amount of CT training) of

participants participating in the professional development training?

Ten of the teachers enrolled in the professional development training were female

and two of the teachers were male. Of the teachers ($n = 12$), 100% indicated their race as

Caucasian. Ages of participants ranged from 27 to 62 years, and years teaching ranged

from 2 to 30 years. Teachers reported a range of 0 to 15 years of CT experience. Eight

teachers who enrolled had no prior CT professional development training. For the

teachers who did report prior professional development training, the hours ranged from 0

to 16 hours and were obtained at the Delaware County Intermediate Unit, St. Joseph's

University, and the Philadelphia School District. Demographic data are displayed in

Table 1.

Table 1

Participant Demographic Information with Post Intervention Training Hours

Participant Number	Age	Current teaching position	Years of teaching experience	Years of CT experience	Training hours in CT (Pre)	Training hours in CT (Post)
01	30	Learning Support/ Special Education	7	6	2-3	8
02	51	Spanish	6	0	0	6
03	42	Reading/ Special Education	19	2	0	6
04	27	English	5	.5	0	6
05	61	Librarian	17	17	0	---
06	44	Reading	15	0	0	6
07	50	History	20	15	12	12
08	37	Science	11	5	0	0
09	41	Science	8	0	0	6
10	52	Math	30	10	10	42
11	62	Reading Specialist	29	5	16	16
12	27	Reading	2	0	0	6

Research Question 2

Do teachers' understandings of the basic tenets of CT and confidence levels in providing appropriate accommodations and modifications to students with disabilities change as a result of a 6-week professional development training?

Responses of teachers' understanding of the basic tenets of CT were scored either as (a) limited understanding, or (b) partial/full understanding. An interrater reliability analysis using the Kappa statistic was performed to determine consistency among raters. Rater 1 was the individual who designed this study. Rater 2 was an educator working in the school where the intervention took place. Rater 2 did not participate in the study. The measured Kappa for teachers' understanding of basic tenets of CT and the importance of CT ranged from .80 to 1.00, indicating a strong agreement among raters.

Likert ratings were compared to measure pre and post confidence levels of teachers and their understanding of the basic tenants of CT. Teachers' understanding of the basic tenets of CT before the professional development training ($M = 3.09$, $SD = .700$) was not significantly different from their understanding post intervention ($M = 3.54$, $SD = .68$), $t(10) = -1.614$, $p = .138$. Teachers reported a marginally significant difference in confidence levels before the intervention ($M = 3.33$, $SD = 1.11$) as compared with after the intervention ($M = 3.88$, $SD = .78$), $t(8) = -2.294$, $p = .051$. Table 2 presents the means and standard deviations for these groups.

Table 2

Results of t-test and Descriptive Statistics of Teachers' Understanding of the Basic Tenets *of CT, Confidence Levels in Providing Appropriate Accommodations, and Modifications to Students with Disabilities*

	Before intervention		After intervention			95% CI for mean difference		
	M	*SD*	*M*	*SD*	*n*		*T*	*df*
Understanding	3.09	.700	3.54	.68	11	-1.08	-1.61	10
Confidence	3.33	1.11	3.88	78	9	-1.11	*-2.29	8

* *p* = .051

All participants reported that CT is important before (*n* =12*)* and after (*n* =11*)* the intervention. Teachers reported the following reasons for importance: students can access grade-level materials; teachers and students have opportunities for various perspectives; students receive assistance from two teachers; special education students receive increased support in general-education settings; students receive more individualized instruction, and teachers receive more support for behavior management.

Teachers were asked to rate common planning time, professional development, teacher attitudes, support from administration, and positive relationship with coteacher from most important (1) to least important (5). Frequency data are provided in Table 3 for the percentage of teachers who rated the importance of five aspects of CT as most important.

Table 3

Percentage of Teachers Reporting Common Planning Time, Professional Development, Teacher Attitudes, Support from Administration, and Positive Relationship with Coteacher as Most Important Aspects of CT

Aspect	Pre-Survey	Post-Survey
Teacher attitudes	41.5%	33.3%
Common planning time	25%	22.2%
Positive relationship with coteacher	18.2%	22.2%
Professional development	18.2%	8.3%
Support from administration	0%	11.1%

Teachers were asked to identify the types of accommodations and modifications most typically used in their classrooms. Frequency data are provided in Table 4 to illustrate the list of accommodations and modifications that teachers identified as being used in their classrooms. Teachers were able to identify 18 accommodations or modifications pre intervention; 19 strategies were listed post intervention.

Table 4

Number of Teachers Reporting Accommodations and Modifications Typically Used In Classrooms

Accommodation/Modification	Pre-Survey	Post-Survey
Cooperative grouping	0	1
Presentation of instruction	0	1
Multisensory instructional approach	0	1
Extra review	0	1
Small group testing	1	1
Guided notes	4	2
Whole group/ small group/ individualized instruction	1	1

Brainstorming	1	0
Teaching mnemonics	1	0
Use of games	1	0
Chunking instructional material	1	0
Reading in small groups	1	0
Guided Notes	4	2

Research Question 3

Is there a difference in student academic achievement as measured by a formative assessment tool before and after the professional development training?

Student academic achievement of teachers who participated in the CT professional development training (intervention group, $n = 162$) was compared with the student achievement of teachers who did not participate in the training (control group, $n = 100$). Intervention and control groups were organized and compared by class subject (science, reading, or English), subject of assessment (Science or English Language Arts), and grade level. Comparisons were analyzed for those teachers of the same subject and grade level who participated in the intervention with those teachers who did not participate in the intervention. The assessments were given three times during the school year; therefore, all three assessment scores were used for the Science assessment and for the English Language Arts assessment. The first assessment was administered before the professional development activity; there were two assessments administered after the professional development. The first assessment was administered in September and early October. The intervention began after the first assessment in mid-October and concluded in November. The second assessment was delivered in December and the third assessment also took place in December.

Table 5 provides the descriptive statistics of students included in the comparison. The results conclude no main effect occurred from the first assessment to the third assessment, $F(2, 520) = 1.836$, $p = .161$.

Table 5

Means and Standard Deviations of Control and Intervention Student Academic Achievement

	Assessment 1		Assessment 2		Assessment 3		
	M	*SD*	*M*	*SD*	*M*	*SD*	*n*
Control	899.75	124.39	881.40	131.06	908.92	123.32	162
Intervention	903.531	110.79	905.40	122.65	924.51	124.00	100

Chapter 5: Discussion

Summary and Significance of Findings

Educational legislation mandates schools to provide special-needs students with an education within the least restrictive environment. Coteaching (CT) is an instructional strategy used by schools as a way to include students with disabilities within the general education curriculum to the maximum extent appropriate. Unfortunately, evidence to support CT as a strong evidence-based practice is limited. The limitations in CT research may be a result of the lack of standard delivery of CT within classrooms because of limited professional development opportunities. Teachers can become skilled in the art of inclusion through the use of ongoing, consistent professional development. Through the use of professional development, teachers may become more confident and better skilled in providing appropriate accommodations and modifications to their students.

The purpose of this study was to determine if a professional development training in a middle school changes not only teachers' understanding of the basic tenets of CT, but also their confidence levels in providing appropriate accommodations and modifications to students with disabilities. An additional purpose of this study was to compare academic achievement outcomes of students taught in a CT classroom with students in a traditional classroom. A summary of the results and implications for significance are as follows and are organized by research questions.

Research Question 1

What is the demographic information (age, race, gender, current teaching position, years of teaching, years of CT experience, amount of CT training) of participants participating in the professional development training?

The current study sought to address the research indicating that professional development is necessary to increase the successful implementation of CT (Friend, Cook, Hurley-Chamberlain, & Shamberger, 2010; Murawski & Hughes, 2009). Similar to previous research findings, 66% of teachers enrolled in this professional development training reported no training in preparation for CT instruction. Some teachers who reported having experience in CT instruction had no prior training. This finding suggests that teachers continue to require professional development training in order to implement CT instructional strategies with fidelity and confidence.

Weiner (2003) suggested that teacher attitudes were thought to be the first or second most important aspect of CT. Consistent with the research, the majority of participants in this study rated teacher attitudes before and after the intervention as the most important aspect of CT. This rating provides important implications for change because teacher attitudes need to be the primary target in order to increase the possibility of CT implementation. Should teachers have a negative attitude toward CT instructional practices and toward the concept of including students with disabilities, this may influence the fidelity of instructional practices.

Common planning time was the second most important aspect of CT reported by participants. At this particular middle school that was utilized in the research, teachers are scheduled for common planning time throughout the week within the disciplines and grade-level teams. However, participants reported a need for longer planning periods within the school day or prior to the school year to increase the possibility for change in instructional practices. Teachers generally reported administrative support as not being the most important aspect necessary to implement CT instructional strategies.

Discussions with participants, however, indicated that they did feel administrative support was, indeed, necessary for change. One participant spoke about the need for administrators to choose an instructional focus and priority. Participants reported that changes within the school setting need to be done with a purpose and teacher perspectives need to be considered as part of the process.

Research Question 2

Do teachers' understandings of the basic tenets of CT and their *confidence levels in providing appropriate accommodations and modifications to students with disabilities change as a result of a 6-week professional development training?*

A significant change was not evident in teachers' understanding of the basic tenets of CT as a result of the professional development training. Generally, teachers reported similar basic tenets in both pre and postsurveys, when compared. Teachers may have referenced similar basic tenets because the 6-week intervention may not have been sufficient time for change. Alternatively, teachers may have had some background knowledge about the basic tenets of CT prior to enrolling in the professional development training. These results are significant because they suggest that teachers require time to change their instructional practices. Even with mentoring and a continuous short-term professional development training, teachers showed limited change in their understanding of the basic tenets of CT over a 6-week period.

Bergren (1997) suggested that teacher confidence levels increase as a result of professional development experiences. This finding was partially supported by the current study. During the final professional development session, teachers generally reported feeling more confident in the area of providing appropriate levels of

accommodations and modifications for their students. This strategy was covered during two hour-long workshop periods; therefore, the teachers may have felt more confident in this area because of the time dedicated to this content. Further, teachers were given opportunities to bring current student work with them and receive mentoring in providing accommodations and modifications based on student individual needs. Their confidence levels may have increased as a result of the teachers' active role and use of relevant student data.

All participants believed that CT is an important instructional strategy. Overall, teachers acknowledged a willingness to implement instructional strategies for a more diverse group of students. As suggested in previous research, teacher attitudes toward CT were generally positive (Austin, 2001; Bergren, 1997; Fennick & Liddy, 2001; Idol, 2006; Wischnowski, Salmon & Eaton, 2004). The reason for implementation seemed to be based on the change in student population. Teachers acknowledged the diverse group of students that they are expected to include in the general education curriculum. Participants also indicated that inclusion of students with disabilities is difficult and requires an additional set of skills.

Research Question 3

Is there a difference in student academic achievement as measured by a formative assessment tool before and after the professional development training?

Students were assessed using the Classroom Diagnostic Tools (CDT), an individually administered diagnostic assessment developed by the state of Pennsylvania. Students at this middle school take this formative assessment multiple times per year to measure progress toward Pennsylvania Assessment Anchors and Eligible Content

included in the Pennsylvania System of School Assessments (PSSA). Overall, there was

no difference in performance for students who were in a CT classroom or intervention

classroom, as compared with a classroom having a single instructor who did not

participate in the intervention. These results may support research suggesting limited

evidence that CT influences student achievement (Daniel & King, 1997; Rea,

McLaughlin & Walther-Thomas, 2002). Although this study was not designed

specifically to change student academic achievement, increasing student performances on

standardized testing has become a major focus in schools.

Limitations

A few limitations are evident as part of this research design that may influence the

overall reliability of the results. A limited sample size and selection of participants may

contribute to a low level of generalizability. In addition, the survey used to measure

teacher changes was designed for this study and therefore does not have reliability and

validity with other similar measures. The third research question addressed the influence

of this professional development training on student achievement. However, teachers

working within the school have attempted many interventions to support their students.

Therefore, many factors, not controlled for, may have contributed to the change in

student achievement.

This study ended with 11 participants, suggesting that the sample size was too

small to generalize results. Participants volunteered for this intervention; therefore, they

may have already had an understanding, a positive attitude, and an interest in including

students with disabilities. Participants in this study were teachers in a middle-school

setting, which also limits the generalizability of the study for elementary and high school

staff populations. Because this survey was a self-report, the results may contain a bias. In addition, the inclusion of a question to understand the reasons why teachers choose to change or not to change their instructional practices would have been beneficial. This question would have assisted in future planning to determine the best way to assist teachers in changing their instructional approaches.

While measuring student academic achievement, a variety of factors may have contributed to individual student scores. Teachers may have used other interventions, such as curriculum-based materials, activities reflecting the school-wide goals, and other instructional strategies to influence student achievement. Additionally, a general decline in student scores occurred from the first to the second administration of the CDT. School administrators and teachers suggested that the decline may have been related to the fact that the second administration time period occurred near a holiday break. They suggested that students may have put forth less effort during the second administration. Based on these factors, the intervention cannot be considered a sole factor influencing student achievement.

Future Directions

Because evidence suggesting that CT instructional practices can increase student achievement continues to be limited, future research needs to focus on which instructional practices will increase student achievement. Current legislation requires students with disabilities to be included within the general-education curriculum to the maximum extent appropriate; yet, school staff continue to have difficulty understanding how best to adhere to federal and local regulations. Without this type of understanding,

school staff may not be offering the best type of instructional practices for students to achieve more successfully

Walsh (2012) found that the successful implementation of CT accounted for significant academic gains for special-needs students in the areas of reading and math, as measured on state testing. Walsh's study highlighted the importance of a district-wide initiative for focused professional development training. Because the participants in this study were only a part of a larger district, future research should explore not only the influence of district-wide, purposeful professional development trainings, but also how these trainings can influence academic achievement. If the professional development training had been accessible to a larger population and had been focused upon consistently, perhaps the outcome of the training would have had a greater influence.

Although participants seemed interested in changing their instructional practices during training sessions, observed change was limited across the 6-week period. When teachers were asked to attempt a CT instructional strategy at the end of each training session, participants were not always consistent in adhering to this request. Each year, new instructional practices are introduced to teachers, but information to determine the extent to which teachers actually change is limited. District and school administrators need to understand the factors that assist teachers in changing their instructional practices so that new instructional initiatives can be successful. Professional development trainings can be designed based on the results of this future research.

Conclusion

The current study revealed that this small sample of participants held a generally positive attitude toward inclusion and recognized the importance of this instructional

approach. Participants identified the most important aspects of CT necessary for implementation. Although the change in teachers' understanding of the basic tenets of CT was not significant, a marginally significant increase in confidence levels was reported. When analyzing the influence of CT on student achievement, no evidence suggested a difference between scores of the intervention group and the control group. Although student achievement was not the primary goal of this study, ideally, evidence-based instructional practices are utilized to increase academic achievement.

CT can be an integral instructional practice that makes it possible to change student outcomes and improve teachers' attitudes and confidence toward including special-needs students. Further, CT can be an instructional approach that schools use to adhere to educational legislation and provide the least restrictive environment for special-needs students. However, more research is needed to determine the strength of this practice or possible other ways to include students with disabilities within the general-education classroom and increase overall student achievement.

References

Abdal-Haqq, I. (1996). Making Time for Teacher Professional Development. Retrieved from ERIC database (ED400259).

Austin, V. L. (2001). Teachers' beliefs about co-teaching. Remedial and Special Education, 22(4), 245-255.

Banerji, M., & Dailey, R. A. (1995). A study of the effects of an inclusion model on students with specific learning disabilities. Journal of Learning Disabilities, 28(8), 511-522.

Bauwens, J., Hourcade, J. J., & Friend, M. (1989). Cooperative Teaching A Model for General and Special Education Integration. Remedial and Special Education, 10(2), 17-22.

Bergren, B. A. (1997). Teacher Attitudes toward Included Special Education Students and Co-Teaching. Retrieved from ERIC database (ED408754).

Birman, B. F., Desimone, L., Porter, A. C., & Garet, M. S. (2000). Designing professional development that works. Educational Leadership, 57(8), 28-33.

Bouck, E.C. (2007). Co-teaching… not just a textbook term: Implications for practice. Preventing School Failure: Alternative Education for Children and Youth, 51(2), 46-51.

Brinkmann, J., & Twiford, T. (2012). Voices from the field: Skill sets needed for effective collaboration and co-teaching. International Journal of Educational Leadership Preparation, 7(3), 1-13.

Buell, M. J., Hallam, R., Gamel-Mccormick, M., & Scheer, S. (1999). A survey of general and special education teachers' perceptions and inservice needs

concerning inclusion. International Journal of Disability, Development and
Education, 46(2), 143-156.

Civic Impulse. (2016). S. 1177 — 114th Congress: Every Student Succeeds Act.
Retrieved from https://www.govtrack.us/congress/bills/114/s1177.

Conderman, G., & Hedin, L. (2012). Purposeful assessment practices for co-teachers.
Teaching Exceptional Children, 44(4), 18-27.

Cook, L., & Friend, M. (1995). Co-teaching: Guidelines for creating effective practices.
Focus on Exceptional Children, 28(3), 1-16.

Daniel, L. G., & King, D. A. (1997). Impact of inclusion education on academic
achievement, student behavior and self-esteem, and parental attitudes. The Journal
of Educational Research, 91(2), 67-80.

Dieker, L. A. (2001). What are the characteristics of "effective" middle and high school
co-taught teams for students with disabilities?. Preventing School Failure:
Alternative Education for Children and Youth, 46(1), 14-23.

Dunn, L.M. (1968). Special education for the mildly retarded: Is much of it justifiable?
Exceptional Children, 35 (1), 5-22.

Fennick, E., & Liddy, D. (2001). Responsibilities and preparation for collaborative
teaching: Co-teachers' perspectives. Teacher Education and Special Education:
The Journal of the Teacher Education Division of the Council for Exceptional
Children, 24(3), 229-240.

Fishbaugh, M.S. Models of Collaboration. Boston, MA: Allyn and Bacon.

Friend, M. & Cook, L. (2012). Interactions: Collaboration skills for school professionals
(7th Edition). Boston, MA: Pearson.

Friend, M., Cook, L., Hurley-Chamberlain, D., & Shamberger, C. (2010). Co-teaching: An illustration of the complexity of collaboration in special education. Journal of Educational and Psychological Consultation, 20(1), 9-27.

Friend, M., Reising, M., & Cook, L. (1993). Co-teaching: An overview of the past, a glimpse at the present, and considerations for the future. Preventing School Failure: Alternative Education for Children and Youth, 37(4), 6-10.

Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. American Educational Research Journal, 38(4), 915-945.

Geen, A.G. (1985). Team teaching in the secondary schools of England and wales. Educational Review, 37, 29-38.

Guskey, T. R. (2000). Evaluating Professional Development. Thousand Oaks, CA: Corwin Press.

Guskey, T. R. (2002). Professional development and teacher change. Teachers and Teaching: Theory and Practice, 8(3), 381-391.

Haring, D. & Kelner, T. (2015). Why we got serious about interdisciplinary teaching. Educational Leadership, 73 (4), 68-72.

Idol, L. (2006). Toward inclusion of special education students in general education a program evaluation of eight schools. Remedial and Special Education, 27(2), 77-94.

Individuals with Disabilities Education Act, 20 U.S.C. § 1412 (2004).

Ingvarson, L., Meiers, M., & Beavis, A. (2005). Factors affecting the impact of professional development programs on teachers' knowledge, practice, student outcomes & efficacy. Education Policy Analysis Archives, 13(10), 1-29.

Kirkpatrick, D. L. (1975). Evaluating training programs. San Francisco Tata: Tata McGraw Hill Education.

Klingner, J. K., Vaughn, S., Hughes, M. T., Schumm, J. S., & Elbaum, B. (1998). Outcomes for students with and without learning disabilities in inclusive classrooms. Learning Disabilities Research & Practice, 13(3), 153-161.

Lehr, A. E. (1999). The administrative role in collaborative teaching. NASSP Bulletin, 83 (611), 105-111.

Lundeen, C., & Lundeen, D. J. (1993). Effectiveness of Mainstreaming with Collaborative Teaching. Retrieved from ERIC database (ED368127).

Magiera, K., Smith, C., Zigmond, N., & Gebauer, K. (2005). Benefits of co-teaching in secondary mathematics classes. Teaching Exceptional Children, 37(3), 20-24.

Magiera, K., & Zigmond, N. (2005). Co Teaching in Middle School Classrooms Under Routine Conditions: Does the Instructional Experience Differ for Students with Disabilities in Co Taught and Solo Taught Classes?. Learning Disabilities Research & Practice, 20(2), 79-85.

Male, D. B. (2011). The impact of a professional development programme on teachers' attitudes towards inclusion. Support for Learning, 26(4), 182-186.

Marston, D. (1996). A comparison of inclusion only, pull-out only, and combined service models for students with mild disabilities. The Journal of Special Education, 30(2), 121-132.

Mastropieri, M. A., Scruggs, T. E., Graetz, J., Norland, J., Gardizi, W., & Mcduffie, K. (2005). Case studies in co-teaching in the content areas: successes, failures, and challenges. Intervention in School and Clinic, 40(5), 260-270.

Murawski, W. W., & Hughes, C. E. (2009). Response to intervention, collaboration, and co-teaching: A logical combination for successful systemic change. Preventing School Failure: Alternative Education for Children and Youth, 53(4), 267-277.

No Child Left Behind Act of 2001, 107-110, § 115 (2001).

Pancsofar, N., & Petroff, J. G. (2013). Professional development experiences in co-teaching associations with teacher confidence, interests, and attitudes. Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children, 36(2), 83-96.

Ploessl, D. M., Rock, M. L., Schoenfeld, N., & Blanks, B. (2010). On the same page: practical techniques to enhance co-teaching Interactions. Intervention in School and Clinic, 45(3), 158-168.

Rea, P. J., McLaughlin, V. L., & Walther-Thomas, C. (2002). Outcomes for students with learning disabilities in inclusive and pullout programs. Exceptional Children, 68(2), 203-222.

Rhodes, C., & Beneicke, S. (2002). Coaching, mentoring and peer-networking: Challenges for the management of teacher professional development in schools. Journal of In-Service Education, 28(2), 297-310.

Rozalski, M., Stewart, A., & Miller, J. (2010). How to determine the least restrictive environment for students with disabilities. Exceptionality, 18(3), 151-163.

Sileo, J. M. (2011). Co-teaching: Getting to know your partner. Teaching Exceptional
        Children, 43(5), 32-38.

Simmons, R. J., & Magiera, K. (2007). Evaluation of co-teaching in three high schools
        within one school district: How do you know when you are truly co-teaching?.
        Teaching Exceptional Children Plus, 3(3).

Soodak, L. C., Podell, D. M., & Lehman, L. R. (1998). Teacher, student, and school
        attributes as predictors of teachers' responses to inclusion. The Journal of Special
        Education, 31(4), 480-497.

Vaughn, S., Schumm, J. S., & Arguelles, M. E. (1997). The ABCDEs of co-teaching.
        Teaching Exceptional Children, 30(2), 4-10.

Walsh, J. M. (2012). Co-teaching as a school system strategy for continuous
        improvement. Preventing School Failure: Alternative Education for Children and
        Youth, 56(1), 29-36.

Walther-Thomas, C. S. (1997). Co-teaching experiences: The benefits and problems that
        teachers and principals report over time. Journal of Learning Disabilities, 30(4),
        395-407.

Walther-Thomas, C., Bryant, M., & Land, S. (1996). Planning for effective co-teaching:
        The key to successful inclusion. *Remedial and Special Education*, 17(4), 255-264.

Warwick, D. (1971). Team Teaching. Retrieved from ERIC database (ED081717).

Wayne, A. J., Yoon, K. S., Zhu, P., Cronen, S., & Garet, M. S. (2008). Experimenting
        with teacher professional development: Motives and methods. Educational
        Researcher, 37(8), 469-479.

Weiner, H. M. (2003). Effective inclusion: Professional development in the context of the

classroom. Teaching Exceptional Children, 35(6), 12-18.

Wischnowski, M. W., Salmon, S. J., & Eaton, K. (2004). Evaluating co-teaching as a

means for successful inclusion of students with disabilities in a rural district.

Rural Special Education Quarterly, 23(3), 3-14.

Zigmond, N. (2003). Where should students with disabilities receive special education

services? Is one place better than another?. The Journal of Special Education,

37(3), 193-199.

Appendix A

Co-Teaching Professional Learning Community Pre-Survey

Demographic Information

Gender: (circle)   Male   Female

Age: _____

Race: _____

Years of Teaching Experience: _____

Experience Co-Teaching? (circle)   Yes   No   If yes, how many years?

_____

Professional Development in Co-Teaching (circle)?   Yes   No

    If yes, how many hours (approximately)? _____ Where?

_____

Current Teaching Position: _____

_____

_____

Please answer the following questions WITHOUT accessing references or other sources. This survey is meant to determine the level of prior knowledge of co-teaching. There are no incorrect answers.

1. What is co-teaching?

2. Why is the co-teaching important?

3. Rate your confidence level in co-teaching (circle one).

1	2	3	4	5
Not at all confident	A little confident	Somewhat confident	Quite a bit confident	Very much confident

4. Rate your confidence in providing appropriate accommodations and modifications to students with disabilities.

1	2	3	4	5
Not at all confident	A little confident	Somewhat confident	Quite a bit confident	Very much confident

5. Explain how an *accommodation* is different from a *modification*. Give an example of each.

6. Rate the following aspects of co-teaching from most important (1) to least important (5).

___ Common planning time
___ Professional development
___ Teacher attitudes
___ Support from administration
___ Positive relationship with co-teacher

Appendix B

Co-Teaching Professional Learning Community Post-Survey

<u>**Demographic Information**</u>

Gender: (circle)   Male   Female

Age: _____

Race: _____

Years of Teaching Experience: _____

Have you had experience co-teaching?   (Circle)   Yes   No

        If yes, how many years? _____

Have you had professional development in co-teaching (Circle)?   Yes   No

        If yes, how many hours (Approximately)? _____ Where?

_____

Current Teaching Position: _____

_____

_____

Please answer the following questions WITHOUT accessing references or other

sources. This survey is meant to determine the level of prior knowledge of co-

teaching. There are no incorrect answers.

1.   What do you understand co-teaching to be?

2.   Do you think co-teaching is important? Why or why not?

3. Rate your confidence level in co-teaching (circle one).

1	2	3	4	5
Not at all confident	A little confident	Somewhat confident	Quite a bit confident	Very much confident

4. Rate your confidence in providing appropriate accommodations and modifications to students with disabilities.

1	2	3	4	5
Not at all confident	A little confident	Somewhat confident	Quite a bit confident	Very much confident

5. Rate the following aspects of co-teaching from most important (1) to least important (5).

___ Common planning time
___ Professional development
___ Teacher attitudes
___ Support from administration
___ Positive relationship with co-teacher

6. Describe an accommodation or modification that you typically use in your classroom.

7. What was the most beneficial activity included in the Co-teaching Professional Learning Community?

8. What other areas (if any) would you like to have included if there are future co-teaching professional development opportunities?

9. Rate your overall experience with the Co-teaching Professional Learning Community.

1	2	3	4	5
Poor	Fair	Good	Great	Excellent

Appendix C

Co-Teaching Learning Community Description

Target Audience: General Education Teachers and Special Education Teachers

Relevance: Current research suggests that there continues to be a need for professional development surrounding the concepts of co-teaching. Effective professional development in this area has been proven to reduce anxiety in teachers and increase job satisfaction.

Objectives: These 6 one hour learning community sessions are designed to be active and collaborative. An additional half hour will be reserved for completion of a pre and post survey. General and special education teachers will have an opportunity to apply co-teaching models and strategies to their classrooms and also have an opportunity to reflect upon their practices. It is preferable that co-teachers participate together, but it is not required to participate.