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Observation and Coaching As a Professional Learning Model To Support the Implementation of Co-teaching

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ABSTRACT

OBSERVATION AND COACHING AS A PROFESSIONAL
LEARNING MODEL TO SUPPORT THE
IMPLEMENTATION OF CO-TEACHING

by

Mary Alice Henley

Chair: Shirley A. Freed

ABSTRACT OF GRADUATE STUDENT RESEARCH

Dissertation

Andrews University

School of Education

Title: OBSERVATION AND COACHING AS A PROFESSIONAL
LEARNING MODEL TO SUPPORT THE IMPLEMENTATION OF
CO-TEACHING

Name of researcher: Mary Alice Henley

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Date completed: January 2016

Purpose

This qualitative study provides a description of a professional learning model using observation and coaching for teachers who participated in training regarding co-teaching to support the implementation of co-teaching.

Method

The study involved participants who were general and special educators from grades K-12 across urban, rural, and suburban school districts in Connecticut. The study included 329 observations of 136 co-teaching teams from 44 schools in 14 districts over the course of 14 years. Classroom observations of 15-20 minutes were initiated in schools with co-teachers in their natural settings using an open-ended observation protocol

recorded on the Connecticut Co-Teaching Technical Assistance Visit Observation Tool. Each co-teaching team was observed at least twice. Observations were transcribed and coded to construct thematic matrices. Some of the teams also used an innovation configuration map to self-evaluate their progress in implementing co-teaching. An iterative, recursive process of sorting, categorizing, and linking data into narratives was used to make meaning and provide a rich description of co-teaching.

Results

A qualitative study design was used to obtain a deeper understanding of co-teaching. The narratives share how the co-teachers in the study experienced the development of parity and identified the necessary ingredients to use each of the six co-teaching approaches. The data came from notes by coaches during observation and coaching and the results of the self-evaluations using the innovation configuration map.

Four themes emerged from the data in response to the first research question. They are: (a) the importance of the development of parity; (b) a wide range of co-teaching approaches were identified in the initial observations; (c) during the second observation, coaches identified usage of more co-teaching approaches that allowed for more intensive instruction; and (d) influence of planning time on the use of co-teaching approaches. Narrative examples for each theme were provided.

The second research question yielded four categories related to teaching behaviors and instruction. They were: (a) instructional strategies; (b) grouping strategies; (c) classroom/behavior management; and (d) specially designed instruction. Narrative examples for each category were given.

Conclusions

Observation and coaching are professional learning models that are recommended to support the implementation of co-teaching. Future research studies should address how co-teaching can improve student outcomes and close achievement gaps for student achievement. Additionally, greater attention needs to be paid to the use of specially designed instruction according to the needs of the students.

Three recommendations for practice were suggested to address certain aspects of the professional learning models in this study. The recommendations were: (a) modifications to the observation tool (CT TAV-OT); (b) expansion of work with the co-teaching innovation configuration maps (IC Maps); and (c) consideration of additional coaching models.

Two areas were recommended for future research. Studies were suggested for taking a deeper look at the professional learning models of observation and coaching. Additional were suggested for the focus on student achievement.

Andrews University

School of Education

OBSERVATION AND COACHING AS A PROFESSIONAL
LEARNING MODEL TO SUPPORT THE
IMPLEMENTATION OF CO-TEACHING

A Dissertation

Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

By

Mary Alice Henley

January 2016

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DEDICATION

For God, who is good all the time! All thanks and praise to Him as He provided me with the strength to persevere through life's challenges in order that I may complete this doctoral journey. Those very challenges humbled me and made me a better servant leader.

I can do all things through Him who strengthens me. Phil 4:13

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CHAPTER 1

INTRODUCTION

Co-teaching has become exceedingly popular as a service delivery model for students with disabilities. The use of co-teaching in K-12 schools has the potential to lead to significant improvement in student outcomes. This study contributes to the scholarly understanding of co-teaching as shaped through the professional learning models of observation and coaching with co-teachers after training.

Background to the Problem

The social, academic, and cultural make-up of classrooms is rapidly evolving and is presenting a wide continuum of needs of the students in K-12 schools. These needs have expanded so that educators are faced with the challenge to consider age, gender, socioeconomic status, ability/disability, and race as they provide instruction. More and more students come to school with a multitude of mental health and behavioral issues as well as physical, intellectual, behavioral, and/or emotional disabilities that range from mild to severe. The National Center for Education Statistics (NCES) reported in the *2012 Digest of Education Statistics* that 6,295,816 students, ages 3-21, received special education services in 2000. In 2010, that number had increased to 6,419,405 students (Snyder & Dillow, 2013). In addition, 336,990 students were identified in 2007 as gifted and talented in academics, the arts, or athletics. Students also are becoming increasingly diverse in terms of ethnicity growing from 38.8% in 2000 to 47.6% in 2010. The number

of students participating in English language learning programs increased from 8.7% in 2002-2003 to 9.8% in 2010-11. Growing numbers of students were born in poverty from 15.4% in 2000 to 20.7% in 2011. Also to be considered are the large numbers of students who are homeless (Bassuk, Richard, & Tsertsvadze, 2014).

As schools have changed, the recognition of shared responsibility for all students has increased. Berdine (2003), in an overview of and commentary on the 2002 report *The President's Commission on Excellence in Special Education: Implications for the Special Education Practitioner*, cited the recommendation that children with disabilities be considered general education children first and that their education be provided in the least restrictive environment (LRE). McLeskey, Landers, Williamson, and Hoppey (2012) reported that for the majority of students with disabilities, LRE is in the general education classroom with their peers. Within a general education context, students are given access to general education curriculum and instruction provided by a general education teacher. However, students may still need direct or indirect specialized instruction or support from special educators. This has expedited greater collaboration between special education and general education teachers (Friend & Cook, 2013). The progressive inclusion of students in K-12 schools is based on a philosophical belief system that provides for the welcoming of all students into the learning community. Schools can become places where all students feel valued, empowered and supported.

Co-teaching brings students with disabilities into the general education classroom. When compared to special education classrooms, general education classrooms typically address and cover richer depths and greater amounts of academic content. The emphasis is on instruction, albeit whole class instruction. However, there is comparable one-to-one

instructional time to address student needs. In the case of students with more severe disabilities, there tends to be greater involvement of nondisabled peers and less attachment to adults which can result in more positive student outcomes (Hines, 2009).

The development of multi-tiered systems of support and emphasis on the use of evidence based practices gives opportunity for educators to implement scientifically based instructional practices like curriculum-based measurement to identify and address academic problems early. Educators can also work together to provide early intervention services for students who are at risk of later identification and placement in special education (Connecticut State Department of Education, 2008).

As more children with physical, intellectual, emotional, and other disabilities learn alongside their non-disabled peers, educators continue to debate, discover, and determine how to include and teach these students in their classrooms. Multiple researchers have determined that co-teaching has emerged as a relatively common option for accomplishing this goal (Friend & Bursuck, 2015; Gerber & Popp, 1999; Walther-Thomas, Korinek, & McLaughlin, 1999). However, the potential of co-teaching can only be realized when teachers are provided specific instruction, practice, and experience in developing the skill sets required (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009; Friend & Bursuck, 2015; Scruggs, Mastropieri, & McDuffie, 2007). Co-teachers who know how to collaborate and partner in a shared classroom will use more co-teaching structures and share co-teaching roles and responsibilities. This content is often included in teacher preparation courses, but if it is not addressed high-quality professional learning related to co-teaching is imperative. Co-teachers should participate in training and other professional learning prior to implementation (Waldron &

McLeskey, 2010) and follow-up with observation and coaching in order to change their practice (Salend, Gordon, & Lopez-Vona, 2002). It is best to have both co-teaching partners participate in the training and professional learning (Friend, Cook, Hurley-Chamberlain, & Shamberger, 2010).

Cosier, Causton-Theoharis, and Theoharis (2013) did a study with a sample that involved more than 1,300 students. The students were labeled with disabilities and were between the ages of 6 to 9, within 180 school districts. They determined that there was a positive correlation between the number of hours students with disabilities spend in the general education classroom and their academic achievement. They cautioned against generalizing this to students with severe disabilities since there was disparity in how school districts placed those students. This supports previous research such as the study by Rea, McLaughlin, and Walther-Thomas (2002) that determined students with learning disabilities who were served in inclusive classrooms earned higher grades and achieved higher or comparable scores on standardized assessments. The students also had greater attendance and similar numbers of incidents regarding behavior.

Since students with disabilities typically achieve more when they are afforded the opportunity to learn in general education classrooms there are implications for current classroom, school, and district practices related to access to general education contexts for students with disabilities. To move from a continuum of placements model to a continuum of services model signifies a shift toward services provided to students with disabilities in general education contexts as much as possible before considering a separate placement, thus creating social and academic equity for all students (Cosier et al., 2013).

Inclusion of students with disabilities into general education communities can be done successfully through the use of co-teaching. Co-teaching is a service delivery model that is the purposeful merging of teaching styles, backgrounds, and areas of expertise of two educators. It results in a synchronized flow of instruction and strategic support for each and every one of the students in the class. Students with disabilities are supposed to receive the necessary support and special education services, as well as the opportunity to take their rightful place in the general education classroom and learning community. This affords them access to the general curriculum, access to their peers without disabilities, and access to both special and general educators. Co-teaching is much more than the mere addition of a special education teacher to any classroom where students with disabilities are present for some portion of the school day (Friend et al., 2010).

Co-teaching has garnered considerable attention in the literature over the past two decades. The majority of reports, articles, and research studies have focused on describing co-teaching programs and practices, including teachers' roles and relationships (Cook & Friend, 2010; Weiss, 2004). Some have addressed issues related to logistics and challenges such as the provision of planning time and scheduling (Strogilos & Tragoulia, 2013; Vaughn & Bos, 2012). More studies are now appearing that investigate the impact of co-teaching on student learning and behavior (Scruggs, Mastropieri, & McDuffie, 2007; Walsh, 2012; Emmer, Sabornie, Evertson, & Weinstein, 2013).

Statement of the Problem

As schools move toward the use of co-teaching to provide a more inclusive environment for students with special needs, professional learning has evolved to better assist teachers in doing so. Research exists that shows the benefits of using co-teaching as

a service delivery model. However, the co-teaching research base does not provide a clear understanding of what happens as teachers implement co-teaching or how to do so effectively. Thus, a critical gap of knowledge exists regarding professional learning models for K to 12 teachers to best implement co-teaching in general education classrooms. Filling this gap will allow co-teaching practices to continue to advance as teachers make changes in their current practices.

Purpose of the Study

The primary purpose of this study was to describe a professional learning model that used observation and coaching for teachers who participated in training regarding co-teaching. Guidelines for what co-teaching should look like were found on the innovation configuration map or IC Map (Hall & Hord, 2006) developed by groups of coaches and educators in this study. This study contributes to reducing the gap in the literature regarding how observation and coaching support educators as they implement co-teaching.

Research Questions

The following research questions related to professional learning based on observation and coaching of co-teaching were formulated to guide the study:

1. When teachers have participated in professional learning specifically related to co-teaching, what themes emerge from notes recorded by coaches during observations in the classrooms and follow-up coaching sessions?
2. When teachers have participated in professional learning specifically related to co-teaching, what are the teaching behaviors and instructional strategies they are observed using, that integrate the elements of co-teaching and instruction?

Research Design

This is a qualitative study using an existing data set (Eisner, 1991; Lichtman, 2013). Data had been collected through classroom observations and coaching sessions over the course of 15 years. The instruments used were developed and refined by a team and are described in detail in Chapter 3. The educators in this study attended training on co-teaching prior to observation and coaching. This study reports on the data that came primarily from notes by coaches during observation and coaching. There is a smaller subset of data from 57 teachers who used an IC Map to self-evaluate where they were as they implemented co-teaching. The existing data were analyzed using typical qualitative analysis methods to identify themes in the experiences of teachers who are endeavoring to implement the innovation of co-teaching.

Conceptual Framework

This study is driven by three major concepts: professional development/learning designed to integrate theory, knowledge, and practice (Killion & Crow, 2011); change through the implementation of an innovation (Hall & Hord, 2006); and co-teaching as a service delivery model for students with disabilities (Friend & Cook, 2013). These three concepts form a conceptual framework that leads to implementation of the innovation of co-teaching through a cycle of professional learning that includes observation and coaching.

The first concept, *designing professional learning to integrate theory, knowledge, and practice*, can be seen in the proposed co-teaching model. In order to successfully implement a co-teaching model, general and special educators who are new to co-teaching are asked to understand and learn new skills and practices. Co-teachers are

provided opportunity to practice and demonstrate this new knowledge and these skills. The findings of Joyce, Showers, and Fullan (2002) showed that given the four components of training (i.e., knowledge/theory, modeling/demonstration, practice, and peer coaching) if only the first three are used, there was very limited use of the innovation in the classroom, while adding the fourth, peer coaching, significantly increased the number of educators who used the targeted innovative practice.

Joyce et al. (2002) proposed the use of peer coaching groups to encourage the integration of research-based strategies into current teacher instructional practices. The use of immediate feedback through observation and coaching provides professional learning that can provide assistance in understanding the application and relevance of this new skill set as co-teaching is put into practice. The approaches of co-teaching are implemented more efficiently and more effectively based on an assumption that the more teachers know, the better they will teach (McLeskey & Waldron, 2004). The principles of andragogy or ‘the art and science of helping adults learn’ were formulated by Malcolm Knowles (1984) and reinforce the premise that the experience of receiving feedback provides for learner-centered and interactive activities during job-embedded learning. That is, adult learners are most interested in learning when there is immediate relevance to the work they are attempting.

This transfer of knowledge after training to practice continues in the current movement in the field of professional development towards the notion of professional learning. Teachers must play an active role when they are adding knowledge, changing beliefs, and changing practice. An emphasis on affording time and support for teachers allows them to connect new experiences to their repertoire of teaching practices.

The second concept in the framework of this study is *change through the implementation of an innovation*. Hall and Hord (2006) articulated 12 principles of change:

1. Change is a process not an event. Understanding a skill and gaining competence in that skill can take three to five years.
2. There are differences between development and implementation of an innovation that must be recognized.
3. Change begins and ends at the individual level.
4. Innovation (or change) comes in different sizes. The amount of time, resources and especially effort can vary with regards to implementation.
5. Interventions are the actions and events that are key to the success of the change process
6. Without implementation of new practices, there will be no change in outcomes.
7. Administrator leadership is essential for the change to occur.
8. As a strategy, a mandate can work.
9. The school is the primary unit for change.
10. There is a core belief that change is a team effort.
11. Appropriate interventions can reduce resistance to change.
12. The context of the school will influence the process of change.

The above 12 principles are interwoven throughout the professional learning experiences designed for the co-teachers in this study. Personal reflection on practice, participation in collaborative groups, and inquiry into the classroom via observation and

coaching are interventions used as co-teachers gained knowledge while learning within their classrooms. The co-teachers in this study learned that co-teaching takes considerable amounts of time, resources and efforts. They were coached to change the ways they plan, instruct, and assess the students in their classroom. The active involvement of building principals or vice-principals was often noted by co-teachers when asked as to what supports they were receiving in their school. This helped build sustainability of the co-teaching.

Although most of the special educators involved in this study seemed to have no choice regarding co-teaching, when provided supports, they embraced the change and were co-teaching. The use of observation and coaching helped with resistors such as general educators who felt a loss of control over their environment by being forced to share. Special educators identified concern about meeting the needs of their students when they were given limited isolated time with them so there was uncertainty about the co-teaching actually working. And in some cases, both general and special educators found this process somewhat painful. The coaching sessions provided opportunity for facilitation of these feelings by honoring and respecting their existence.

The third concept in the framework of this study is that of *co-teaching as a service delivery model for students with disabilities* (Friend & Cook, 2013). The concept has been actualized and serves as the base of a Connecticut professional learning model regarding co-teaching which is discussed thoroughly in Chapter 3. This model provides co-teachers with support to integrate the co-teaching approaches into their own classrooms, understanding of how the various approaches are related to one another, and recognition of how the varied use of the approaches provides the greatest benefit for the

students in the classroom. Other critical elements of this professional learning model are based on teachers collaboratively making decisions about selecting and designing teaching activities, constructing classroom communities and instructional contexts, and integrating teaching and learning strategies into the co-teaching classroom. These actions are inherently different when done by two educators versus a singular teacher in a more traditional setting.

Definitions

The following definitions provide context for the study:

Coaching: A job-embedded professional learning model that allows co-teachers to focus on the technical aspects of instruction (Joyce & Showers, 1982).

Collaboration: An approach of professional interaction that co-teachers employ. It is based on mutual goals, parity, shared responsibility for key decisions, shared accountability for outcomes, shared resources, and the development of trust, respect, and a sense of community. Collaboration means that resources, power, and authority are shared.

Co-Teaching: A service delivery option for providing specialized instruction or services to students with disabilities within a general education setting with a diverse blended group of their peers by two or more professionals (Friend, 2014).

Co-Teaching Approach: A structure used that guides the division of roles and responsibilities of each of the co-teachers during instruction. For this study, there are six primary approaches: one teach/one assist, one teach/one observe, station teaching, parallel teaching, alternative teaching, and teaming (Friend, 2008).

Curriculum: All the planned experiences to which a learner may be exposed in order to achieve their learning goals. These experiences, built on core content, add the critical transfer of knowledge to both general and special education students in the general education classroom setting. This allows the teacher and the student to embrace everything that is happening contextually and environmentally.

Differentiation: Differentiation is proactively planning instruction to address the needs of a diverse group of learners. Co-teachers use differentiation when they adjust instruction to help students learn information, remember what they have learned, and demonstrate that they have learned it. Differentiated instruction is rigorous curriculum for all students taught with varying levels of teacher support, task expectations, and methods for learning based on the students' abilities and interests. Through differentiated instruction, students are provided choices about how and what they learn. They participate in setting learning goals and making a connection with their experiences and interests (Tomlinson, 2014).

Feedback: An interactive, empirically driven, problem-solving process. Feedback is built into the coaching session that occurs after an observation.

Implementation: Implementation of professional learning are changes in educator practice that occur over time. These changes may be achieved with the provision and integration of a variety of supports to embed the new learning into practices. In this study, the professional learning was on co-teaching and implementation was supported through observation and coaching. The use of constructive feedback and self-reflection provided support as teachers endeavored to implement co-teaching in their classrooms. There was no specific delineation of stages or levels of implementation but rather a move along a self-

defined “continuum from novice to expert through application of their professional learning” (Killion & Crow, 2011).

Inclusion: A philosophical belief that all students should be welcomed and valued members of the school community. It is also the provision of access to general education curriculum in a general education classroom.

Innovation Configuration Map (IC Map): A tool used in this study that helped co-teaching teams to focus on the major components of co-teaching, to concentrate on observable behaviors, and to self-assess their co-teaching (Hall & Hord, 2006).

Observation: Used in this study as a formal classroom visit that lasted 15-20 minutes or more and resulted in the provision of both verbal and written feedback to co-teachers in a coaching session.

Parity: When each person’s contribution is equally valued, and each person has equal power and responsibility in decision-making. Co-teachers must believe that they have something unique and valuable to contribute to the instruction and that this contribution is valued by the other.

Professional Learning: Job-embedded opportunities designed for educators that are grounded in day-to-day teaching practices within a continuous cycle of improvement. Educators work together to find solutions to authentic and immediate problems of practice during the work day (Croft, Coggshall, Dolan, & Powers, 2010). Observation and coaching with feedback were job-embedded in this study.

Delimitations

This study is delimited to observation forms filled in by coaches who observed co-teachers in Connecticut. The co-teachers in this study had completed comprehensive

professional learning in co-teaching through the State Education Resource Center (SERC) and all had been observed at least two times. The study included some co-teaching teams that used the IC Map. This study is not addressing where co-teachers were on the IC Map. It does not attempt to define what stage of implementation a team was in because that would be speculation on the part of the researcher as there is no data to support that determination. The IC Map was used as a tool by the coaches for teams to self-evaluate and reflect on progress. Other facets of student performance such as academic achievement were not investigated. Measurement of student outcomes was limited to observed academic engagement.

Limitations

The first limitation is that observation itself is constrained by what the coach can actually observe. Consideration needs to be given regarding the level of skill of the coaches for recognizing essential occurrences, providing accurate feedback, and communicating clearly what they saw. The use of observation typically necessitates disciplined training and thorough preparation (Patton, 2001). The observational tool used has no published reliability or validity, and although based on theoretical guidelines for co-teaching practice, has not been determined to be psychometrically rigorous.

The second limitation is associated with the challenges of conducting research in authentic settings. Gersten, Baker, and Lloyd (2000) attributed the lack of investigative studies on the effectiveness of special education instructional approaches to the difficulties associated with the design of school-based intervention studies. While natural settings generally are not appropriate for experimental manipulation, they do afford certain advantages. Research has demonstrated co-teaching is affected by a number of

situational factors (Mastropieri et al., 2005) and may therefore be best investigated in a realistic context (Borko, 2004). However, the complexities of the numerous variables that exist in a classroom range from variations in teacher experience, preparation, and expertise to differences between students assigned to co-taught classrooms. Teachers involved in co-teaching arrangements select from a variety of instructional arrangements and teaching strategies. Unique to co-teaching, a second teacher also compounds complexity by introducing an entire set of variables related to professionals' preparation, expertise, and experiences.

The third limitation involved the timing of observations. There was no set schedule for the first observation or between follow-up observations. Each co-teaching team progressed in its own way at its own speed. This was further complicated by the necessity of scheduling observations in advance. Out of courtesy for the co-teachers, as well as to ensure that the co-teachers would be present, all observations were pre-arranged. It is possible that the advance notice predisposed the actions of the co-teachers, and they might have acted differently if they had not been notified in advance or if the technical advisor doing the observation had not been present. Since the co-teachers knew that they were going to be observed and coached for co-teaching, they may have initiated plans that were more diverse than if they had not known they were being observed.

Significance of the Study

Despite these limitations, this study is significant in that co-teaching continues to be prevalent in K-12 schools as an element of school reform, and collaboration is a major component of this model. The results of this study inform the use of professional learning models with co-teachers to facilitate the implementation of critical elements of

collaboration and co-teaching. Co-teaching can provide appropriate support for students with disabilities and students who struggle academically and behaviorally in the classroom.

Summary

Chapter 1 has included an introduction to the study, a brief overview of its basis, background information, definitions, purpose, and research questions. In Chapter 2, a review of the literature on professional learning, particularly the models of observation and coaching is provided, as well as a brief summary of the research and history of co-teaching. Chapter 3 offers a description of the research questions and the methodology/research design including details of the research instrumentation and the data collection procedures. Chapter 4 details the analysis of the data, the themes, and the results of the study. Chapter 5 discusses and analyzes the results. It also includes implications for further practice and recommendations for future research.

CHAPTER 2

LITERATURE REVIEW

Introduction

This chapter presents a review of the literature as background for the study in the use of observation and coaching to support educators as they implement co-teaching. The shift from the use of professional development to the evolution of job-embedded professional learning models is explored. The consideration and use of standards for professional learning and stages of implementation are addressed. To provide context, the history and research on co-teaching is summarized.

A Shift from Professional Development to Professional Learning

In reality, professional learning is something most teachers and educators do every day, as we reflect on our professional practice, work together, share ideas, and strive to improve student outcomes. Although more rigorous research is justified, including both experimental and non-experimental, the existing research base does provide important guidance for the design of high-quality job-embedded professional learning.

Flaws in the Traditional Approach

The groundwork for shifting from professional development to professional learning becomes evident when the flaws in professional development are investigated.

Englert and Tarrant (1993) identified six major flaws in the traditional approach to professional development. Some of these remain concerns over 20 years later. They are: (a) teachers were given only limited opportunities to extend their professional knowledge. Typical professional development consisted of one- or two-day in-service sessions or professional conferences. Programs often were presented as quick and easy solutions with immediate results without emphasizing the amount of effort change can take; (b) professional development sessions did not take into account the experience, knowledge, beliefs, concerns, and attitudes of teachers. Programs were presented as if they applied uniformly across a variety of settings, subject matter areas, and teachers; (c) the focus was not on the changes in classrooms but more on the agenda of the innovator or researcher; (d) not enough time was given for teachers to learn new processes and make them their own; (e) learning was not acknowledged as a social process versus a private one. Learners need time to talk about what they are learning; and (f) emphasis was on the use of instructional scripts, guides, and packages which limited teachers in making the necessary instructional decisions based on their professional judgment. Consideration of each of these six concerns need to be addressed to create professional learning opportunities that will be a better use of time and result in greater change in teacher practices for the benefit of the students.

Focused Support for Teachers

In 1996, the National Commission on Teaching & America's Future published *What Matters Most: Teaching for America's Future*. It considered how imperative it is that teachers be well prepared and provided with ongoing professional learning and appropriate support. The Commission further identified the need for this professional

learning to be focused on teachers' classroom-related knowledge and skills around the learning processes. A district-wide approach was replaced by professional learning that was results driven, standards based, school focused and job embedded (Sparks, 1997). Focus on the unique needs and culture of individual schools became crucial. Professional learning became job-embedded and allowed time for teachers to study the art and science of teaching and learning. Professional learning was being recognized as an indispensable process without which schools could not hope to prepare all students versus a frill that could be cut when budgets got tight. It was becoming a permanent addition to the policies, infrastructure and practices of a school (Darling-Hammond & McLaughlin, 1995). This shift resulted in changes in the design of professional learning. Teachers were provided with opportunities to share what they knew and what they wanted to learn and then, ultimately, to connect their learning to the contexts of their teaching.

Darling-Hammond and McLaughlin (1995) wrote:

Teachers learn by doing, reading, and reflecting (just as students do); by collaborating with other teachers; by looking closely at students and their work; and by sharing what they see. This kind of learning enables teachers to make the leap from theory to accomplished practice. In addition to a powerful base of theoretical knowledge, such learning requires settings that support teacher inquiry and collaboration and strategies grounded in teachers' questions and concerns. To understand deeply, teachers must learn about, see, and experience successful learning-centered and learner-centered teaching practices. (p. 83)

Professional learning can support teachers in their ongoing acquisition of skills and strategies that enabled them to teach well. Evidence indicated that what teachers know and can do was the most important influence on what students learn (National Commission on Teaching & America's Future, 1996).

Links Between Teachers' Learning and Classroom Practice

Borko (2004) explored the complex links between the design of professional learning opportunities, teachers' learning during professional learning activities and subsequent changes in classroom practice. She recommended the production of well-specified and clearly articulated research projects on professional learning. Her suggestion was that professional learning designers collaborate with researchers, drawing upon their experiences to make thoughtful, informed decisions about the designs and methods most appropriate to the specific questions being asked.

In a 2009 study, Darling-Hammond and colleagues reported that teachers in the United States participated in similar amounts of short-term, one-day workshops as other countries do. However, where other countries provided opportunity and time to participate in long term job-embedded types of professional learning that allowed for collaborative work on instruction and planning, this pattern was not found in the United States. Educators were often not provided with the opportunity to conduct action research on the outcomes of their classroom practices in order to guide curriculum, assessment, and professional learning decisions (Darling-Hammond et al., 2009).

Job-embedded professional learning should enhance and improve day-to-day teaching practices particularly content-specific instructional practices so as to improve student learning (Croft, et al., 2010; Hirsh, 2009). It should take place in schools, embedded into the workday of teachers. When using authentic and immediate problems of practice, educators assessed and found solutions to meet students learning needs as part of a cycle of continuous improvement (Brown-Easton, 2015). High-quality professional learning became cooperative, inquiry-based work for educators aligned with

state standards for student academic achievement and any related local educational agency and school improvement goals (Hirsh, 2009; Brown-Easton, 2015).

High quality professional learning enhances reflection, promotes collegiality, increases transfer of newly learned skills, supports the ongoing refinement of a practice, and fosters a common lexicon that facilitates dialogue. This shift away from the traditional training model to a model where learning is interlaced in the context of the work in the classroom can show continual improvement.

Benefits to Professional Learning

When given the time, space, structures, and opportunity to be learners, teachers benefit as well as their students. Follow-up support to teachers has long been identified as an important feature of more effective programs. If teachers are going to apply professional learning to their classroom teaching, they must have the motivation, belief, and skills to do so (Borko, 2004; Showers & Bennett, 1987). Teachers need access to ongoing school collaboration and, if possible, follow-up consultation with experts.

Yoon, Duncan, Lee, Scarloss, & Shapley (2007) found a lack of rigorous studies to address the effect of teacher professional learning on student achievement. Over 1,300 potential studies were examined and only nine met the evidence standards of the What Works Clearinghouse. Of those studies, the teachers who received 49 or more hours of professional learning were able to boost student achievement by 21 percentile points or more. The professional learning should be intensive, sustained, content focused, coherent, well defined, and strongly implemented (Garet, Porter, Desimone, Birman, & Yoon, 2001). The ultimate goal was improvement in student learning outcomes (Guskey, 2003). Fullan (2000) encouraged schools to find success by creating themselves as places where

teachers regularly focused their efforts on student work through assessment and then adjusted their instructional practice to get better results.

In 2009, Darling-Hammond et al. worked with the National Staff Development Council and published the report *Professional Learning in the Learning Profession: A Status Report on Teacher Development in the United States and Abroad*. This report emphasized the importance of school-based learning and job-embedded coaching as necessary components of effective professional learning. Doing so connoted a direct connection between a teacher's work in the classroom and the professional learning the teacher received. Other researchers supported giving teams of teachers the opportunity to engage in professional learning that is practical and interactive, is delivered in an engaging and collegial manner, so that they applied the experiences and became more results-oriented (Fogarty & Pete, 2010).

Categories of Knowledge

In order to be successful learners, teachers need to understand the importance of the new knowledge and skills they are being asked to acquire. McLeskey and Waldron (2004) further conceptualized this idea by identifying three categories of knowledge that teachers need to possess. The first category was identified as *knowledge-for-practice*. The more teachers know – the better they will teach. Evidence showed that teachers seldom used practices they were taught by an outside expert who presented subject matter, instructional strategies, or effective interventions through one-time sessions or seminars.

The second category was considered *knowledge-in-practice*. Cochran-Smith and Lytle (1999) noted this was largely based on the thinking that teaching is a craft that in practice can be uncertain as it needs to be responsive to the specifics of each classroom in

a school. Teachers become better as they learn through experience. They can do so by taking time for personal reflection on what they are doing in the classroom, working in collaborative groups, and using inquiry regarding their classroom.

The third category of knowledge is that of *knowledge-of-practice*, best defined as learning that was job-embedded or constructed within an environment closely connected to the teacher. This category is not only about improved practice, but sustainability of those practices.

Graner, Ault, Mellard, and Gingerich (2012) published a white paper at the University of Kansas which addressed the category of knowledge-of-practice. Professional learning sessions and provision of technical assistance to teachers cannot remain just a series of sit and get or one-time only events. These activities need to be engaging as educators need to see the relevance of what they are discussing to their everyday classroom. They need to change and adapt what they learn to fit the context of their classroom. Desimone (2011) stressed how it was important for schools to become professional learning communities. Schools need to become places where teachers interact and engage in discourse over time and across settings. They discuss their work and the use of various instructional and management strategies, both successful experiences and troublesome ones. But mostly, educators need to support one another in their learning rather than relying on the outside expert. Real change occurred when professional learning became a combination of theory, demonstration, practice, feedback and coaching (Graner et al., 2012).

In addition to changes in the delivery of professional learning, changes occurred in the research paradigm on professional learning. Hill, Beisiegel and Jacob (2013) found

the field of professional learning research had reached a crossroad. Prior to 1990, evaluation of professional learning to determine success was focused on the effectiveness on a small scale, typically through teacher self-reports of change in knowledge or anticipated change in action. Additionally a ‘happiness quotient’ was determined as to the level of satisfaction of the participants regarding the session (Guskey, 2002).

Shifts in the field of education to be more data-driven and more goal-oriented led to the creation of more direct measures of teacher knowledge and classroom practice in various teacher evaluation systems that can be tied to professional learning. As the field evolved, there was movement toward the integration of research-based strategies and innovations into a teacher’s repertoire in the classroom. Gersten, Taylor, Keys, Tolfhus & Newman-Gonchar (2014) did a summary of the research on effective professional learning in math. They found limited causal evidence. In the few studies where they did see positive effects on student math proficient, a significant amount of time was invested in the professional learning. Also noted was the focus was not only on the content of math, but on the pedagogy and practice of it in the classroom.

Characteristics of Effective Professional Learning

The Gersten et al. (2014) study (2014) provides support for the thinking done by Desimone (2009). She argued for a core conceptual framework featuring five key characteristics of effective professional learning: content focus, active learning, coherence, duration, and collective participation. She further supported the idea that professional learning is a fundamental step towards reforms in teaching and learning, thus justifying the use of best practices to measure its effects. Better professional learning opportunities can help to maximize outcomes for both educators and the students they

serve. Collaboration between teachers serves as both an influential device in professional learning and a driver for school improvement. Furthermore, when educators participated in professional learning that was linked with school improvement, it improved their teaching.

Standards for Professional Learning

To help the country make the shift from professional development to professional learning, one organization was instrumental in supporting that change. Learning Forward, the professional learning association formerly known as the National Staff Development Council (NSDC) promotes a set of *Standards for Professional Learning*. These standards have helped to define the components and characteristics of professional learning by bringing to the forefront of the conversation what effective teaching practices are looked-for to improve student results. These standards helped to guide the professional learning model on co-teaching that is being used in this study. The design of every aspect of the training, observation and coaching reflect the research and evidence-based practices promoted by Learning Forward. By using these standards, the professional learning has a set of expectations and indicators that guide the learning, facilitation, implementation, and evaluation so as to ensure equity and excellence for the participating educators. Because it is designed this way, the professional learning possesses great potential to change what educators believe, know, and are able to do; in other words, their will and skill. The changes in educators' will and skill result in a wider repertoire of effective strategies and instructional practices. The use of those strategies and practices allow educators to meet performance expectations and address student learning needs. As educator practice improves, students have a greater probability of success. This success

can create a cycle of continuous improvement in that the teachers seek to get even better together. In this study, co-teaching is the focus for what educators need to change in what they know, in their skill and will to do it, and in their repertoire of effective teaching strategies and instructional practices.

The standards helped to drive the development of a comprehensive, collaborative, and intensive professional learning model on co-teaching as used in this study. The co-teaching model is school based and personalized; it is systemic and data driven. It seeks to build capacity and if sustained, the co-teaching will continue to provide support and services to the students in these schools (Killion & Crow, 2011).

Implementation

The simplest definition of implementation is to put a plan into effect. However, that simplicity becomes much more complex when context is considered. Context can play a central role in implementation. Context can include the social, cultural, economic, political, legal, and physical environment, as well as the institutional setting, comprising various stakeholders and their interactions, and the demographic and epidemiological conditions (Peters, Adam, Alonge, Agyepong, & Tran, 2013).

In an effort to further understand and define implementation in relation to change in practice, the reader can reconsider the twelve principles of change articulated by Hall and Hord (2006) and introduced earlier in Chapter 1.

There are three principles in particular that speak to implementation and help to further define implementation in relation to this study. The differences between development and implementation of an innovation must be recognized. Given that co-teaching is the innovation in mind, the development would be the investment in time to

train and bring co-teachers together to begin the use of co-teaching. Implementation would be the actual use of co-teaching, or what needs to be done to get it established.

This brings in the next principle for consideration. In order for implementation to occur, there needs to be adequate time, resources and effort put into implementation. In this study this translated to the additional professional learning experiences of observation and coaching. Through those observations, a coach could look to see if any changes in teacher behavior were occurring such as the use of a co-teaching approach. One additional principle to consider is that if there is no implementation of new practices, there will be no change in outcomes. The purpose of co-teaching is to give students with IEPs access and opportunity in general education settings. If the teacher behaviors do not change in the way they co-plan, co-instruct, and co-assess students, then implementation may not have been met.

Others have also investigated implementation in an effort to define and put it to practice. Fixsen, Naoom, Blase, Friedman, and Wallace (2005) faced a challenge in completing a review of implementation literature due to the lack of well-defined terms. Sometimes implementation just meant ‘used’ in a general sense or ‘put into effect’. At other times it meant a set of methods to purposefully help others make use of a program on a broad scale. Their monograph synthesized the results and found “broad agreement that implementation is considered a decidedly complex endeavor” (p.2). They found that training – no matter how well done – by itself was not an effective implementation method. They did find good evidence that shows that successful implementation requires a long term multilevel approach. They also specified a process to put things into practice a chosen activity or program.

The implementation process clearly recognizes that implementation occurs in discernible stages. There are core components or ‘drivers’ that can be used for successful implementation of evidence-based practices and programs. It should be noted that the stages and drivers are not linear or separate; each is embedded in the other in interesting combinations. For the purposes of this study, these stages are outlined with the complexity removed.

The stages are exploration, installation, initial implementation, full implementation, and sustainability (Fixsen et al., 2005). The stages are seen as dynamic within schools, since moving back toward the beginning stage is a likely occurrence as personnel and circumstances change. The exploration stage is the critical starting point. Taking the time for exploration saves time and money and improves the chances for success. During exploration, readiness is assessed by a support team. To the extent that a school is not ready, the support team is accountable for helping create readiness.

The installation stage occurs when time is used to acquire or repurpose the resources required to do the work. Selecting staff, identifying sources for training and coaching, providing initial training for staff, finding or establishing performance assessment (fidelity) tools, locating space, and assuring access to materials and equipment are among the resources that need to be in place before the work can be done effectively.

Initial implementation begins when the innovation is being used for the first time. During this stage, educators are attempting to use newly learned skills (e.g., co-teaching) in the context of a school that is just learning how to change to accommodate and support the new ways of work. This is often considered the most fragile stage due to the ineptness

associated with trying new practices and the complications associated with changing old ways of work. Often educators just give up and go back to familiar routines or business as usual.

The initial implementation stage is extremely challenging. External support for change can be provided at the practice level, organization level, and system level. This involves support from internal as well as external coaches to establish and sustain changes to the point of integration into daily work. A support team can be provided to assist staff as they strive to become competent as co-teachers.

Full implementation is reached when fifty percent or more of the intended practitioners, staff, or team members are using an effective innovation with fidelity and good outcomes. Full implementation is difficult to achieve and sustain without the necessary implementation supports. In the full implementation stage, the new ways of providing services are now the standard ways of work and are routinely provided. Implementation supports are part of the way the school functions. A support team remains essential to the ongoing success. The work of the support team is to ensure that the gains in the use of effective practices are maintained and improved over time and through transitions of leaders and staff (Fixsen et al., 2005).

For this study regarding the innovation of co-teaching, it was important to recognize that the personal costs of implementation are high for teachers. Time plays a forceful role in the learning of new skills. Even when co-teaching was thoroughly explained and discussed at the beginning of professional learning, it cannot be grasped all at once. Like all learners, teachers needed time to learn new processes as individuals and with co-teaching, with each other. Given that the process of change is developmental, it

was anticipated that what co-teachers take away from professional learning sessions are the elements that directly related to their own immediate interests, needs, and goals.

Through time and practice, as co-teachers integrated each piece into practice, they were ready to use a new piece. The learning was learner-centered and interactive; and it was meaningful. Collaborative discussions between general and special educators helped them make sound decisions about the limited instructional time they have with their students to incorporate interventions, and to design and use intensive instruction and learning strategies into their co-taught classroom.

During the first year of co-teaching, co-teachers are growing comfortable with the various co-teaching practices and are adjusting to fit them within the context of their classroom. Co-teachers continue to go through various stages of development in their perceptions and skills in using any innovation, particularly one as complex as co-teaching. The professional learning monitors their progress and adapts responsively in order to provide changing levels of support so the co-teachers can reach full implementation and eventual sustainability.

Consider the study by Duffy (1993) who found that in order to become successful, “teachers need to be authorized to use their own judgment, their own minds, when conducting strategy instruction.” In fact, he reported that teachers were successful “only when they stopped looking for prescriptions to follow and began relying on their own judgment to help low achievers become strategic” (p. 244). Instructional scripts and guides have tended to circumvent the minds of teachers rather than help them figure out how to take charge of their own instruction.

Professional learning opportunities are needed to encourage teachers to shape and modify instructional innovations for their own particular contexts. Further, instruction prescribed ahead of time cannot capture the complexity of responding appropriately on a moment-to-moment or day-to-day basis in response to the evolving developmental states of students. A better course of action is one in which teachers are involved as constructors of knowledge. Involving teachers as active participants rather than as passive recipients increases the likelihood that teachers assimilated innovations into practice, and in the process, acquire greater knowledge and teaching expertise. In this study, when co-teachers are viewed as partners in the development and implementation of co-teaching, they gain a deeper sense of ownership and commitment to the goals and procedures of the program. The influence this thinking has on the way professional learning is provided for co-teachers is profound. The professional learning on co-teaching must have flexibility regarding implementation, so that co-teachers have full control in adapting, adopting, or emphasizing particular content. The co-teachers become active and equal partners with the staff developers in the professional learning.

Observation as a Professional Learning Model

One of the two professional learning models used was observation. As defined in this study, observation was a formal classroom visit that lasted 15-20 minutes or more and resulted in the provision of both verbal and written feedback to co-teachers. The observations took place in the classroom, in real time, with current students, and they were centered on the integration of co-teaching with instruction by looking at the co-teaching approaches implemented, teacher interactions observed, and instructional strategies used.

Observation is a process that enables researchers to learn about the activities of the people under study in the natural setting through witnessing and possibly participating in those activities. DeWalt and DeWalt (2010) found this active looking can help researchers answer descriptive research questions by assisting the development of a holistic understanding of the use context of the innovation under study. Observations in a classroom provide an opportunity to note who interacts with whom to investigate communication, both verbal and nonverbal; and to determine amounts of time spent on different classroom strategies. However, observation can be one the most time consuming and expensive models of professional learning (Ice, 2004).

Observation has been heralded as the most unbiased form of data collection, although bias can exist (Desimone, 2009). Specifically, the use of observation can remove the bias from self-reporting on surveys or by teachers reporting on what they do in their classroom. However, some studies have found that there can be significant correlations between observations and self-report provided the survey questions seek reliable data versus opinion or speculation. The questions must focus on teacher practices within a clearly delineated time frame. The questions should focus on the ‘what’ teachers did versus how well they did it. If they are well constructed and well administered, observations can provide useful data, likewise if they are poorly done, observations run the risk of being skewed and biased. Observation can be used to measure the quality and quantity of what teachers are doing in the classroom.

Observation can be used to measure the quality and quantity of what teachers are doing in the classroom. For example, Pianta, Belsky, Houts, and Morrison (2007), when observing fifth grade classrooms, found that children worked in whole-group or

individual-seatwork settings for 91.2% or most of the day. They spent very little time in small-group instruction. About 20% of that whole group or individual time, teachers were instructing students on managing materials or time. These were not co-taught classrooms, but there are huge implications for change that need to be addressed in the way instructional time is spent. One of the benefits of co-teaching is to be able to increase the intensity of instruction typically through small group instruction, thus the push to use the approaches of station, alternative, and parallel. If co-teachers use the time for intensive, specialized, direct instruction, perhaps students will make greater academic and social behavioral gains.

Observation can provide a data collection method, or a treatment integrity tool. This treatment integrity, or fidelity, can be simply defined as the extent to which an intervention is delivered as intended (Lane, Bocian, MacMillan, & Gresham, 2004). Knowledge of how well an intervention has been implemented is imperative to being able to infer intervention effectiveness and critical to improving student outcomes. Observation literature indicates that to maximize feedback provided by observers, data need to be descriptive rather than evaluative (Friend & Cook, 2013). Therefore, administrators and other observers need to be able to walk into a classroom knowing what the goal of the observation is and be able to clearly describe what they want to collect, see, and hear. Becoming an efficient, skilled, and astute observer of learning takes quality training, practice, and collaborative reflection between observers (Merriam, 2014). School leaders do not have to be experts in all content areas to conduct high quality observations, but they do have to be highly knowledgeable in pedagogy and be a keen observer of student learning evidence. Templates and lists for observation can help

by providing cues, things to look specifically for, and a common nomenclature. The structure provided by such tools does not preclude the observer from noting other factors in the classroom, interviewing students, or recording descriptive notes.

Focusing on the data specific to co-teaching classrooms can provide particular insight for those teachers to improve their practice and increase their skills in co-teaching. To assist administrators in observing co-teaching, Murawski and Lochner (2011) developed a checklist that provided specific items for administrators to ask for, look for, and listen for when observing co-teachers to assess their collaborative activities and, more importantly, to help guide them in their efforts to shape and improve their teaching. Items on the checklist addressed co-planning and co-instructing included evidence that both co-teachers have had input and were working with all students in the classroom.

Observable Elements in Co-Teaching

Consistency in the determination of what is observed in classrooms with co-teaching revolves around three crucial elements: students, educators, and instruction. The first element is the *expectations of students in co-teaching*. For the most part, when coaches are doing an observation, they should be unable to identify which students are the ones with IEPs based on which teacher they are working with during the observation (Kamens, Susko, & Elliott, 2013). This serves as an indicator that the students work with each of the co-teachers as appropriate. Both teachers should be aware of what each student's needs are as well as goals and objectives if there is an IEP. Both teachers should have differentiated the instructional strategies and teaching practices they will use to make sure those needs are met. This would seem most likely to be true for those students with milder or invisible disabilities.

The second observable element focuses on the *role of the special educator*. Primarily, a special educator should be observed to be an equal teaching partner. The special educator should work with all students; however, they also work with specific students individually or in targeted groups for more intensive instruction. This suggests that the special educator will be the instructional specialist, providing strategies, modifications, adaptations, differentiated instruction and specially designed instruction as warranted by what is written on the IEP. The special educator knows the needs of the students with IEPs, including modifications and accommodations as determined in the IEP; implement the goals and objectives of those IEPs and monitors student progress.

The third observable element is *instruction*. There should be a move away from lecture. Instruction being observed should consist of multiple opportunities that actively engage students in the learning process. Engagement helps improve performance and long-term retention of information while meeting student learning preferences. Co-teaching allows time for the use of strategies that support basic skills including pre-teaching, re-teaching, and reciprocal teaching. This can help level the playing field for all students.

In co-taught classrooms, instructional strategies are used to support all students. For example, when they use pre-teaching, co-teachers introduce concepts and skills to students who need extra support before they are introduced to the class as a whole. Co-teachers can also use re-teaching which provides students with opportunities to review concepts and skills. This repetition supports learning and using information well. Co-taught classrooms should have evidence of the use of graphic organizers or different ways for students to bring together information in print. The use of reading strategies

such as previewing, predicting, identifying headings and key words, and use of context clues to support reading across the curriculum should be readily observed.

Research on Using Observations in Co-Teaching

Weiss and Lloyd (2002) found that a majority of observed co-teaching teams primarily used a version of the one teach/one assist approach with the special educator typically in the assisting role. Administrators should be questioning the co-teachers to determine if this is happening. By definition, co-teaching means having two teachers in the same classroom rather than one teacher alone or a teacher and a paraprofessional. The special educator should not be serving as a paraprofessional. Thus, administrators must ensure that teachers are engaged in something that is substantively different from that of more traditional instruction (Murawski & Lochner, 2011).

There are very few studies of what co- teachers actually do in the classroom despite the argument made by Mastropieri and colleagues that what co-teachers are doing and its relation to students' success can help to better understand and improve co-teaching practices (Mastropieri et al., 2005). When off-site training sessions are coupled with classroom observations and feedback relative to the demonstrated co-teaching and differentiation strategies, the professional learning can be individualized to address each teacher's needs (Walsh, 2012).

In a study done by Kamens et al. (2013), a number of administrators indicated that they observed the co-teachers at the same time, while in contrast, others reported that they observed the co-teachers separately, particularly when they were responsible for only observing one teacher of the co-teaching team. Administrators often noted that even when they observed both teachers at the same time, they usually met with the teachers

individually. When asked what they were looking for in the observation, for the most part, the administrators expected to see both co-teachers actively engaged with students during the lesson. They hoped for signs of true collaboration within a positive classroom environment. They defined that as shared planning that included looking at and modifying the curriculum and instruction if students needed it. Many administrators looked at the interaction between the students and the two teachers. They said that it should not be readily apparent as to which students were in the class and required support. If it were always the special educator working with one group of students, it looks less like co-teaching and more like in-class resource time. While flexibility and multiple observation formats can be beneficial, consistency is also wanted in relation to formal observation practices. The design of the observation and coaching components in this study was built around this need for consistency, yet allowed for flexibility of the observation tool as the coaches adjusted to the context of the classroom they were observing.

Pancsofar and Petroff (2013) found that when given more opportunities to learn about co-teaching, teachers were “more confident in their co-teaching practice and demonstrated higher levels of interest and more positive attitudes about co-teaching” (p. 83). Certainly training should occur, but observational measures of co-teaching practice can also be important to determine outcomes. The use of longitudinal designs, in order to examine the impact of professional learning on co-teaching relationships and performance, was highly recommended.

Zigmond and Matta (2004) observed 41 secondary co-teaching pairs and they did not see special educators offering elaborate explanations or providing explicit strategic

instruction to facilitate learning or memory of the content material. Murawski (2006) conducted a study involving teacher observation and documentation of their actions in an effort to measure treatment integrity. A pattern appeared with the lack of specially designed instruction provided for students with disabilities. Co-teachers spent the vast majority of teaching time using large-group instruction even when opportunity for individualization was apparent. Very few differences were observed in curriculum, instruction, behavior management, or assessment including the agenda, content, and method of instruction. The primary difference seen in co-teaching classrooms was that having two teachers available allowed one of them, usually the special educator, to circulate and help with questions or assignments. The observations also showed a large percentage of time was spent on non-instructional items. It appeared clear that the teams observed were not making use of the opportunity co-teaching offered concerning instruction.

The results of these studies merit addressing the following questions: ‘What is happening instructionally in co-taught classrooms?’, ‘What instruction is occurring in co-taught classrooms that makes it different from instruction in other classrooms?’, ‘What instructional approaches, strategies, and techniques are efficient and effective, and which are not?’, and ‘Which support mechanisms are necessary to make co-teaching work?’ Currently, only recommendations by advocates and those promoting the use of co-teaching provide any answers to these questions. Observation in the classrooms can reveal what is taking place allowing for investigation on the use of different instructional approaches and the eventual evaluation of student outcomes. Observations can help build understanding of what is going on in both successful and unsuccessful co-taught

classrooms. Specific feedback built into the process, discussion, and reflection adds relevance for teacher learning and facilitates transfer of new skills into practice (Zepeda, 2014).

Controversy exists as to whether or not teachers should be given prior notification before an observation. Does the element of surprise ensure that observers are seeing representative examples of a teacher's practice? Does the unnecessary anxiety and stress make observation more about evaluation and accountability than about improvement? Ho and Kane (2013) found that the element of surprise may not be necessary. Both formal scheduled observations and informal ones provided evidence of changes in instructional practices that were used. In this study, co-teachers were scheduled and informed in advance the date when they would next be observed.

As a professional learning model, classroom observations provide data that can be used to enrich conversations during professional learning community meetings, individual teacher coaching conferences, and staff meetings. The data from observations can be disaggregated by age, content area, or other categories. The data can be used to support school improvement goals, increase collaborative planning, design professional learning, and reach a common understanding of what quality pedagogy looks like. At their core, classroom observations are about coaching, building up professional practice, and supporting better outcomes for students.

Coaching as a Professional Learning Model

Coaching is the second professional learning model addressed in the study and is defined as a job-embedded model that allows teachers to focus on the technical aspects of instruction (Joyce & Showers, 2002). A study by Kretlow and Bartholomew (2010)

demonstrated the positive effects of in-service and coaching on instructional quality.

Coaching is used as a way to meet teachers where they are in their own practice setting to help them learn via supportive critique and dialogue after observations.

Coaching is on-going, continuous, reflective learning. When done well, coaching permits a collaborative relationship between an expert and a practitioner to grow and allows for the exchange of specific knowledge and skills related to instructional practice. A coach should observe, listen, and support; they do not dictate the right answer. They ask open-ended questions and facilitate focused one-on-one discussions. Coaching is about the application of instructional strategies. It is about descriptive feedback that is not meant to be judgmental. The coaching is not meant to be used for performance evaluation purposes. Coaching is based on observable events in settings to allow for collaborative problem solving to improve practice. It can assist teachers in identifying priorities and developing action plans. The context of the setting must be considered for each observation. Coaching teachers improves their ability to implement innovations such as co-teaching when they feel comfortable and confident in doing so (Knight, 2011).

Coaching takes place in the school, before or after an observation, away from students, and centers on issues of actual practice. Coaching differs from mentoring in its focus on the technical aspects of instruction, rather than the larger personal and nonacademic features of teaching (Rowley, 2005). Typically, instructional coaches have expertise in the applicable subject area and related teaching strategies.

Instructional Coaching: Professional Development Strategies that Improve Instruction is a thorough and comprehensive study done by King et al. (2004) for the Annenberg Institute for School Reform. The report identifies multiple findings that offer

validation for coaching. The evidence shows that coaching encourages reflection and collaboration. Coaching offers the opportunity to provide support to teachers as they seek to apply their learning in deeper, more frequent, and consistent ways. When coaching is part of embedded professional learning within a school, it can have a positive impact on the culture. Neufeld and Roper (2003) found that coaching can result in an increase in the use of new learning and reciprocal accountability. They determined that coaching distributes leadership and keeps the focus on teaching and learning.

Coaching to Support Co-Teaching

One of the major outcomes sought in using coaching as a professional learning model with co-teaching has been to increase the co-teachers' combined repertoire of instructional strategies and modifications. Direct training is generally necessary and involves modeling, role-playing, rehearsal, and feedback. Coaching allows co-teaching teams a chance to practice new skills. A multitude of instructional strategies can be brought into any classroom, but particularly into co-taught classrooms because two educators are present. Co-teachers may need to be taught to make lesson and assessment modifications through the use of strategies such as books on tape, extended time, and compacting. They will need to assess and identify the specific areas of need to improve performance of students with disabilities.

Coaching can help create a trusting environment where co-teachers are supported in their efforts to take intellectual risks and report on their failures and feelings of inadequacy as they change their teaching practices. Co-teachers who sought to understand their own practice through shared inquiry, dialogue, and decision-making were highly respected and their leadership in seeking solutions was recognized by others.

Consequently, when problems occurred, co-teachers can feel safe in sharing their difficulties because the group mutually owned problems and the community worked together to seek remedies to educational problems.

Feedback as a Component of Coaching

A large component of coaching is to provide feedback to those observed. Feedback is to be viewed as an interactive, empirically-driven, problem-solving process. What went well during the lesson? What did not go well during the lesson? What are the goals for the next lesson? Three key findings identified in a study by Gersten and Brengelman (1996) support the use of coaching with feedback for teachers who are learning to co-teach. They found that coaching needed to include regularly scheduled feedback with specific and focused comments on the actions of the teacher. Second, they emphasized the need to recognize the reality of teaching by addressing the need for co-teachers to identify and use instructional approaches that are feasible to use and fit within the context of their classroom. Finally, the authors found that concrete and constructive feedback as follow-up for teachers increased the likelihood of their learning and implementing new instructional practices.

History and Research on Co-Teaching

Early History of Co-Teaching

The history behind co-teaching begins when Bauwens, Hourcade, and Friend (1989) introduced the term *cooperative teaching* to the field as a direct service delivery option for addressing student needs in general education classrooms, and it slowly began to grow in popularity. They envisioned cooperative teaching as a means of implementing

the national call for increased inclusive education for all students. The cooperative teaching model brought together and used effectively the unique and specific skills of each professional. General educators knew curriculum and were skilled in management of large-groups. Special educators were expert in task analysis, adapting curriculum, providing accommodations or modifications, as well as behavior analysis and management.

A significant shift occurred when Friend and Cook (1992) sought to distinguish *co-teaching* from cooperative teaching. They defined it as two or more professionals who jointly deliver substantive instruction to a diverse, or blended, group of students in a single classroom. Decades later, Friend and Cook (2013) further refined the definition and co-teaching is now recognized as a service delivery model still with two professionals and a diverse group of students but with more of an emphasis on the access to a general education setting for students with disabilities. Most importantly, students with IEPs must be provided the specialized instruction or services they need to be successful.

One area of focus for study was the benefits for students, especially those with disabilities. Vaughn, Elbaum, Schumm, and Hughes (1998) found that the number and quality of students' friendships improved when students transitioned from exclusionary educational settings back into the general education classroom supported by co-teaching or consultation models. The same was true for levels of peer acceptance.

Walther-Thomas (1997) did a three year study that advocated for the use of co-teaching as an instructional practice in order to benefit all students, regardless of where they were on a continuum of ability. She identified an additional benefit for all students

in that co-teaching added diversity of perspective to the teaching and learning. Whether the co-teachers were from the same or complementary disciplines, learners sensed the differences, some subtle and others profound, that teachers brought to the various sections of the curriculum. With the purposeful combination of a general educator and a special educator in a co-teaching team, the needs of the students were forefront to the experience. She found that co-teaching, when implemented with integrity, improved student outcomes, such as increased self-confidence and self-esteem, academic performance, social skills, and peer relationships. This was true for students with and without disabilities. Students had greater acceptance of each other and benefited from increased individual attention which led to academic improvement.

Many studies have focused on the perception of co-teachers regarding their teaching partnerships. Co-teachers often report increased feelings of worth, renewal, partnership, and creativity. Benefits for the co-teachers include improved morale. Co-teachers often find relief and support through the camaraderie with one another. They share the joys and highlights while having someone to help them work through problems constructively when an issue arises. Another benefit is the lower student-teacher ratio which allows for more direct instruction and/or determination of accommodations and modifications that can actually be implemented. Instruction becomes more intensive with smaller groups; there is more progress monitoring, and readjusting plans as co-teachers work through the curriculum. Co-teachers benefit from shared accountability and responsibility for all the students in the class.

Co-teachers, for the most part, identified the benefits of mutual professional support, as well as personal and professional growth which included a renewal of purpose

and a broadened perspective toward students. Co-teachers can observe firsthand what other professionals do in the classroom regarding best practices. The benefits for teachers were plentiful, yet simple enough, such as teachers learning from one another while acquiring a respect for each other's frame of reference. This led to sharing ideas for planning, instructing, and assessing and ultimately resulted in providing students the opportunity to have two adults who supported their engagement and learning in the classroom (Eisen, Tisdell & Imel, 2000).

Beyond teacher perception studies, the research base for co-teaching up until 2000 was virtually nonexistent. The bulk of the literature described types of collaborative relationships, how co-teaching was being used, and barriers to co-teaching. Descriptive information existed about what co-teaching was supposed to look like, but there was a lack of data-based literature concerning the procedures and outcomes of co-teaching in practice. As the face of special education continued to change and the demand for greater accountability and achievement increased, educators sought large-scale, long-term research that used comparison groups of non-co-taught classrooms to specifically examine academic and behavioral outcomes for students with disabilities. The little research that had been done had focused primarily at the elementary school level, and little of it showed conclusively that co-teaching produced positive outcomes for students with disabilities.

The complexity of the research during this time does show some conflicting and contradictory data. For example, Klingner, Vaughn, Hughes, Schumm, and Elbaum (1998) found that students with disabilities and students at risk significantly increased their fall-to-spring achievement in reading while in co-taught classrooms. The gains were

not significant for math achievement. However, some students with learning disabilities were not successful, and they recommended that those students continue to receive one-to-one individualized support.

Unfortunately, the research done on co-teaching during this time period was not focused on the fidelity of implementation. In a review of the literature, Reinhiller (1996) provided a descriptive summary of ten co-teaching studies. Three studies reported positive changes in student attitudes as indicated by comfort level in general education classrooms, or student outcomes as determined by accuracy and length of sentences written, accuracy of spelling, or grades with co-teaching. But as Reinhiller pointed out, the majority of the studies "...although interesting, do not contain sufficient data to determine the effects of co-teaching on student achievement or on long range instructional improvement" (p. 41).

A literature review done by Welch, Brownell, & Sheridan (1999) provided a broad, general picture of co-teaching from a variety of sources, not just data-based studies. This approach was different from most literature reviews as they looked at position papers, technical guides, and articles on the topic of co-teaching. The reviewers may have chosen this route given the paucity of empirical research available to them. Welch and his colleagues (1999) found that the research that had been reported lacked experimental designs and only reported student-based outcomes in general terms. The review suggested that teachers have a good attitude toward co-teaching and are satisfied with it. This review was generally supportive of co-teaching but, as the authors observed, reflected a very limited knowledge base in what was then still a relatively new trend particularly in regards to student outcomes.

In a subsequent study, Welch (2000) did a descriptive analysis of co-teaching in two classrooms. This was a formative experiment with a specific goal of 20% increase in student performance on curriculum-based assessments in reading and spelling through the use of co-teaching. The teachers worked to continually improve their co-teaching and modified based on the data collected until the goal was achieved. The author found that co-teaching improved the academic gains of all students in the two elementary-level classrooms, but the overall increase in mean performance of students with learning disabilities was not statistically significant. He also noted that the practical significance of students' progress was encouraging. Specifically, students with IEPs participating in the study exceeded targeted goals for reading fluency and word recognition. He found the initial results mixed but promising; the results were certainly not conclusive and should be considered cautiously. The author indicated that further research was needed not only on student outcomes but also on which forms of co-teaching were used and what amount and type of professional learning teachers received.

From 2000 to the Current Co-Teaching Field

Co-teaching became a very popular instructional delivery model for students with mild-to-moderate disabilities, particularly in an era of school reform and restructuring for inclusion (Friend et al., 2010). However, doing experimental research on co-teaching was difficult. Factors such as the nature and severity of the disability, difficulty in making random selection in school-based settings, and the effects of teacher quality on academic and social outcomes should be addressed. Despite these obstacles, the pace of the research on co-teaching took on an intensity and specificity greater than it had had in previous years.

Effectiveness of Co-Teaching

The narrative review of the research by Weiss and Brigham (2000) revealed large gaps in the knowledge base on co-teaching. After collecting over 700 articles, books, chapters, documents, and dissertations on co-teaching or collaborative instruction, only 23 met the determined criteria for being considered high-quality studies. They had found that few of the studies actually identified specific instructional actions on the part of the co-teachers so it was difficult to discern if there was any appropriate and specially designed instruction provided to meet the specific needs of students who have disabilities.

Murawski and Swanson (2001) completed a meta-analysis of the research to determine effectiveness of a co-teaching model in an inclusive setting and concluded that insufficient data prevented clear determination of the effectiveness of a co-teaching model. The authors gathered 89 articles, which they narrowed to 37 actual research studies, and of those studies, only six contained sufficient information for a quantitative analysis. They looked only at studies that had calculated effect sizes on items such as grades, achievement scores, and social/attitudinal outcomes for students. Four characteristics verified co-teaching: (a) general education and special service providers were present; (b) they shared space; (c) the partners had co-planning time; and (d) the teachers worked with a heterogeneous group of students. The study should have lasted more than two weeks, excluding time spent with pre- and post-testing. Murawski and Swanson reported effect sizes for individual studies ranging from low to high, with an average total effect size in the moderate range. They also noted that treatment integrity was a concern as none of the studies had reported explicit measures. The authors

concluded co-teaching was moderately effective on influencing student outcomes. Co-teaching had had a small to moderate positive effect on reading and math scores of students with disabilities, but they called for more research with experimental and control groups with a specifically identified student population to better determine how co-teaching differs from other practices or when no special educational services are provided. They also emphasized the importance of conducting research on co-teaching that included both successful and unsuccessful co-teaching pairs rather than just studying those that were successful.

Scruggs, Mastropieri and McDuffie (2007) conducted a meta-synthesis of qualitative research on co-teaching. They sought to integrate the themes and insights gained from 32 individual qualitative research studies into one higher order synthesis to gain broad understanding of this body of research, yet respecting the integrity of the individual studies. The studies used qualitative research methods such as teacher interviews and surveys. Overall, administrators, teachers, and students perceived co-teaching as being beneficial for all involved. Scruggs et al. (2007) identified the following themes: the need for sufficient co-planning time, compatibility of the co-teachers, and the importance of administrative support. They also found the dominant co-teaching approach used was 'one teach/one assist', or 'support teaching', where one taught and the other observed or assisted. Unfortunately, the special educator in the team often held this subordinate role; when special education co-teachers did possess adequate content knowledge; they assumed greater levels of instructional responsibility. Many special educators expressed concern over feeling as though they were little more than an instructional aide. They also found teachers were benefitting and growing as

professionals, however, personal compatibility, as well as volunteering, was central to the success of co-teaching.

Scruggs and his colleagues (2007) were also highly concerned about the lack of attention to student outcomes in co-teaching research. They described the absence of instructional innovation in co-teaching classrooms and concluded that “if the qualitative research to date represents general practice, it can be stated that the ideal of true collaboration between two equal partners—focused on curriculum needs, innovative practice, and appropriate individualization—has largely not been met” (p. 412). They recommended that co-taught classes become far more dynamic and innovative than what research suggested they were. The authors concluded that more research was needed.

Moving from large scale meta-analyses, there are significant smaller studies that contribute to the research on the effectiveness of co-teaching. Wilson and Michaels (2006) surveyed over 300 secondary students (one-third were students with disabilities) about their perceptions of co-teaching, finding that all students responded positively to co-teaching, citing higher grades and better literacy skills. The students received more support and liked learning from different teaching styles. They said they would choose to participate in co-taught classes again. Teachers generally reported that they had benefited professionally from co-teaching experiences. With two trained adults in the classroom, students were able to receive more attention. Students with IEPs had their individual needs met more readily.

Various researchers, using methods such as case studies, semi-structured interviews, observations, videotaping, and surveys, that have shown the effectiveness of co-teaching and its benefits for students and teachers. Their findings provided continued

support to use co-teaching. The three following studies are examples of the research that supported the use of co-teaching. The first example study was done by Austin (2001). He completed semi-structured interviews of 92 New Jersey co-teachers in K-12 who had co-taught for at least one year, most at the secondary level. General educators indicated they felt the practice contributed positively to the academic development of all their students. Reasons cited included a reduced student-teacher ratio, the benefit of access to the expertise and viewpoint of their co-teacher, and the value of using remedial strategies and review for all students. Austin argued that school districts and teacher education programs need to provide training, practices, and supports in order to fully prepare teachers to serve in inclusive classrooms. He noted that ignoring such a responsibility would “shortchange these teachers and, ultimately, their students” (p. 254).

The second research study examined was by Dieker (2001), who found that when class size and caseloads were properly determined, the reduced student-teacher ratio became an instrumental factor for success. The individual teaching styles of the co-teachers helped to provide a differentiated learning environment for all students. The creation of a positive climate, use of active learning methods, and high expectations for both behavior and academic performance resulted in positive perceptions of co-teaching by teachers and students. This provided support for co-teaching as a service delivery model.

A third example of research to support co-teaching was done by Dieker and Murawski (2003). They reported on numerous studies that found all students benefited from having two teachers who used various instructional strategies and co-teaching structures. Teachers saw increased cooperation among their students, exposure to peer

models for appropriate behavior, additional attention given to students, and academic benefits. These benefits were noted for students without disabilities as well as those students with disabilities. Few students with disabilities failed to succeed in co-taught classes. They also found that if co-teaching was to work, the two educators had to have more than just good intentions. They had to be collaborative as they planned, monitored, and evaluated the successes of their efforts. But the primary relationship in the classroom had to be that of student and teacher. Collegiality between co-teachers was important, but the effect of collaboration was judged on what changes transpired for students during instruction.

A few studies looked at the academic achievement of students, particularly whether students with disabilities were given access to the general curriculum. The results of co-teaching ranged from no negative impact on the achievement of the general students (Hines, 2009) to significant academic improvement of students with disabilities (Fontana, 2005; McDuffie, Mastropieri, & Scruggs, 2009). Students benefited from working with a content specialist, as well as a professional who modified instruction to meet their individual needs.

The standards-based reform movement has focused attention in schools on students mastering content in the sciences, social studies, world languages, technology, and literature. This shift means all teachers need to deepen their content knowledge and, even more importantly, their knowledge of the specific pedagogy necessary to promote student success in that content area. All staff members in a school where co-teaching is a service delivery model should be provided with professional learning that at the minimum provides them a basic definition/understanding of co-teaching. Co-teaching

partners ought to have extended opportunities to learn about co-teaching expectations and discuss essential topics.

Other studies addressed various different aspects of co-teaching by looking through numerous lenses. One such study was done by Kloo and Zigmond (2008). They suggested that co-teaching is one way to ensure that students with disabilities receive access to content instruction by being taught by content specialists in general education classrooms. This emphasis on teachers who are content specialists also applied to instruction for English-language learners. Following the lead of special education calling for more inclusive practices for students with exceptional needs, an emerging trend has appeared toward the use of co-teaching and push in models of instruction to serve linguistically diverse students in the general classroom setting (Dove & Honigsfeld, 2010).

Magiera and Zigmond (2005) observed that co-teachers used smaller instructional groups; students had more time on task; teacher–student interactions increased; and greater student participation was noted than occurred in solo-taught classes. Unfortunately, they also found that when the special educator was in the room, the general educator interacted with the students with disabilities less often.

Murawski (2006) noted that students with LD in co-taught classrooms did not achieve better standard test scores than did those in resource, or self-contained special education classrooms. However, the scores only told part of the story. She found by looking at the pre- and post-score differences for the spelling and reading comprehension subtests (areas frequently of concern for students with LD), students in the co-teaching condition did do better than their LD counterparts in other conditions, but on others, they

did not. She speculated that the impact of the teacher, whether in co-teaching situations or not, may be the determining factor and suggested the need for further research efforts in this area.

Research on co-teaching has even occurred internationally, such as the study by Tremblay (2013). His results revealed “significant differences were observed in the effects on student outcomes in reading/writing and on attendance, as the co-teaching model was shown to be globally more effective compared with the special education setting” (p. 251).

Mastropieri et al. (2005) looked at several long-term qualitative investigations regarding the implementation of co-teaching across a variety of different settings and content areas. Using analytic induction and the constant comparative method to report findings across all case studies, they identified three major themes. The first theme was the content of the class. They found that it did not wield a significant influence on the success of the co-teaching. However, the interaction between course content and teacher knowledge did appear to have a substantial influence on co-teaching. Rather, it was the level of content knowledge that determined the dominant teacher. The second theme considered that when high-stakes testing was a big factor, classroom instruction and collaborative efforts were quite different. Testing created pressure for teachers to cover content at a rapid pace, which took precedence over maximizing student learning. The third theme indicated that the relationships between the co-teachers was a major critical factor and strongly impacted the success or failure of the inclusion of students with disabilities. To truly be successful, both educators demonstrated a mutual respect for and trust of the other particularly in regard to each other’s respective field of expertise. They

also found that years of experience did not appear to be a factor in co-teaching pairs that worked well together. A contributing factor toward success was the practice of effective teaching behaviors. When both teachers showed enthusiasm, maximized student engagement, and used motivational strategies. When structure and clarity were provided there was greater success.

More recently, Conderman and Hedin (2013) advocated for assigning the special education teacher the role of *strategy leader*. They believed this would provide a clear role and purpose for co-teaching, add evidence-based practices and specially designed instruction to the classroom, and help students with disabilities more efficiently meet goals on their individualized education program. They found that a special educator could research, share, and model a strategy for the general educator and together they infuse the strategy into the general curriculum.

Walsh (2012) wrote of the results of the research he had done over his 20-year tenure in Maryland. He found consistently beneficial effects and marked improvement in the performance of students with disabilities at all school systems when they were provided with increased access to general education for instruction through co-teaching. He found that co-teaching did have a positive effect on student achievement. Additionally administrators, teachers, and students perceived benefits of co-teaching for general and special education students both socially and academically. The use of co-teaching as a high-leverage strategy for addressing the closing of achievement gaps was suggested by Walsh. He determined that there were several system-level strategies that contributed to the positive correlation between student performance and the increased access to general education classrooms provided to students through co-teaching. The most significant

strategy that proved essential in the continuous improvement of co-teachers was systemic and continuous professional learning in order to support co-teaching teams. This is highly supportive to the conceptual framework of this study, particularly in keeping with a professional learning model that focuses on the use of observation and coaching as follow up to training.

Other research has identified factors that are often barriers to the fidelity of implementation of the co-teaching service delivery model. The potential barriers include looking at co-teaching as a place versus instruction; lack of specific content expertise of the teachers; the extent and level of their teaching experience; co-teacher compatibility, including differences in philosophies or personalities; unclear roles for general and special educators; availability of joint co-planning time; lack of co-teaching training or access to observe exemplary co-teaching practices; limited resources; scheduling issues; and a lack of administrative support (Conderman, Bresnahan, & Pedersen, 2008; Dieker & Murawski, 2003; Friend et al., 2010; Leatherman, 2009; Mastropieri et al., 2005; McDuffie, Scruggs, & Mastropieri, 2007; Weiss, 2004). Remaining concerns as to the appropriateness of using a co-teaching model tended to be focused on: students who are disruptive or aggressive; large class sizes; unbalanced curriculum – life skills vs. content; a need for structured socialization between students; and special educators frequently being pulled for crisis intervention or special education meetings (Wilson & Blednick, 2011). These remaining concerns and potential barriers are not universal but tend to be situational specific.

Proponents for co-teaching argue that it is a viable model for the effective inclusion of students with disabilities into general education classes. Co-teaching allows a

special educator to be directly involved in the planning and teaching lessons, in contrast to the consultation model in which the special educator offered suggestions or helped with modifications without direct support. Co-teaching provides a direct means of special education service delivery that is neither stigmatizing nor isolating to special education students. This is quite attractive to those who questioned the efficacy and isolation of pull-out programs. Students with disabilities received the content expertise of the general educator and the disability expertise of the special educator. Educators who demonstrate an open mindset and possess the attributes of shared vision, shared decision-making and shared leadership are more likely to implement and sustain co-teaching (Murawski & Dieker, 2008). More research is warranted, as more needs to be understood about what takes place in co-taught classrooms, for whom this setting and instruction are effective, and which supports and resources go into making this setting and instruction as effective as possible.

Research Specific to the Three Dimensions of Co-Teaching

The instructional cycle allows for focus on three particularly important dimensions of co-teaching: co-planning, co-instructing, and co-assessing. When co-teachers share responsibilities in each dimension, they are better able to use evidence-based and value-added instructional practices and to provide differentiated instruction (Conderman & Hedin, 2012; Friend et al., 2010).

Co-planning

The first dimension of co-teaching in the instructional cycle is *co-planning*. Co-planning is dialogue that requires the participation and involvement of both co-teachers.

It is time and labor-intensive, as both co-teachers reflect upon lesson objectives and goals, relate the learning to standards, and provide input on artifacts such as assignments and assessments. Co-planning can serve as an excellent professional learning opportunity, because teachers share ideas, use past experiences, collectively develop an understanding of students' learning needs, and discuss effective teaching strategies. Scheduled shared planning time allows co-teachers to use the varying expertise of each other to better provide students with more individualized and differentiated learning experiences.

A meta-synthesis of qualitative research completed by Scruggs et al. (2007) identified what co-teachers desired in order to have successful implementation. One of the most frequently mentioned issues was the importance of planning time for co-teaching, noted in nearly all of the investigations. In many studies, co-teachers considered the lack of adequate planning time a serious problem and shared their struggles to find this time. It is almost impossible to locate a study in the co-teaching literature in which shared planning time is not referred to as an essential element. Common planning time, or lack thereof, can affect co-teachers' relationships (Austin, 2001; Dieker, 2001; Keefe & Moore, 2004; Kohler-Evans, 2006; Scruggs et al., 2007; Strogilos & Tragoulia, 2013; Walther-Thomas, 1997). Given this fairly universal understanding that co-planning time is essential to successful co-teaching, early discussions between co-teachers should have a heavy emphasis on how they will juggle planning for the co-taught class (Friend et al., 2010; Magiera, Smith, Zigmond, & Gebauer, 2005; Mastropieri et al., 2005; Potts & Howard, 2011).

Co-instructing

The second dimension of co-teaching in the instructional cycle is *co-instructing*. A major strength of co-teaching comes from the many opportunities to use innovative instructional practices that would be far less practical in a classroom with just one teacher. So what remains critical is the actual instruction that is provided. In most co-teaching research, it was found that general educators, even when co-teaching, favored strategies that could be applied to the class as a whole. Buckley (2005) concluded from her study of middle school social studies co-taught classes, that the general educators planned globally versus for individuals. Hence, when a special educator suggested a particular strategy, the general educator wanted it to be provided for the whole class. Additionally, it was found that the general educators' reliance on traditional methods was a source of frustration to the special educators (Buckley, 2005). It is possible for a special educator to take on a full range of instructional roles, transitioning between activities, introducing new content, giving directions for an activity, providing instruction, and giving students feedback (Cobb & Mata, 2002). So when special educators focused on their role of developing modified materials, such as study guides for the textbook chapters with fill-in-the-blank worksheets indicating page numbers where answers could be found, and whole class instruction remained the norm, the special educator likely found few if any opportunities to provide the specialized instruction that students with IEPs need (Cooper, Him & Scott, 2015).

A more contemporary view toward co-teaching emphasizes bringing specially designed instruction into the general classroom along with the special education teacher. Students with IEPs should be receiving the specially designed instruction that will best

address their unique needs in relation to their specific disability. This might mean special materials or specific teaching techniques. Specially designed instruction has an intensity that is different than standard classroom instruction. It is more explicit and involves direct instruction. It is often a planned, systematic, well-scaffolded approach to learning tasks. It can involve the interpersonal skills some students need. It can mean study skills, test-taking skills, and organizational skills to succeed academically. Specially designed instruction might mean changing the pace of instruction. The collaborative working relationship between the co-teachers can influence how specially designed instruction is negotiated and applied to the co-teaching they do in the general classroom.

The analogy of being in a professional marriage has long been attached to co-teaching. Along with negotiating the complexities of being in a professional marriage, co-teachers also need to think as if they are in the medical profession. They must constantly diagnose the educational needs of their students in order for the students to achieve full potential. Co-teachers need to understand their students, follow evidenced-based standards of practice, and use expert judgment. Co-teachers need to have student learning as their focus, knowing what they need to teach and knowing how to facilitate the learning of that content. Co-teachers also need to be innovators, collaborators, and problem-solvers.

Co-assessing

The third and final dimension of the co-teaching instructional cycle is *co-assessing*. This dimension of co-teaching is often neglected in the professional literature. When co-teachers understand assessment as a process for gathering data on student performance to inform instructional decision-making, they have a unique opportunity to

ensure an instructional environment that can mean success for all students. Co-teachers need to take the time to discuss their assessment and grading philosophies. As they reflect on best practices in assessment, co-teachers need to be deliberate and plan so that assessment is different than if they were teaching a class on their own. They need to share assessment responsibilities which include development of systems for collecting pupil performance information, graphing the data, and creating guidelines for interpreting the results. They should frequently do joint reviews of repeated and multiple quantitative measures of pupil performance such as test scores, report card grades, and curriculum-based measures. When monitoring student progress carefully through the analysis of student data, the information is essential to guide lesson planning. Data collection can occur through the use of many of the co-teaching approaches such as one teach/one observe, alternative teaching for varied assessments, independent work completion at stations. Co-teachers can also use typical formative and summative assessments that show student academic growth.

Analysis of data helps co-teachers to pinpoint what students have learned and helps them make sound judgments about their instruction. When co-teachers co-assess, they manage to find ways to differentiate assessments and the means to ensure that students with disabilities receive necessary accommodations and grading adaptations as directed by their IEPs. This information feeds into the instructional cycle by informing appropriate grouping for instruction as well as necessary accommodations or modifications for instruction.

Researchers rarely have investigated the effects of co-assessment in co-taught settings. Specifically, how do co-teachers establish ways to capitalize on each other's

expertise in determining student growth, vary types of and methods for evaluation, or differentiate assessments based on students' individualized education programs (IEPs)? Magiera and Zigmond (2005) reported that special educators in co-taught classrooms frequently monitored students' progress during independent practice; however, they did not discuss subsequent teacher decision-making processes facilitated by this monitoring. Hang and Rabren (2009) conducted co-teaching surveys with teachers and students. The 31-item teacher survey included only two assessment related items, and the 19-item student survey included only one. None of the classroom dimensions during co-teaching observations related to assessment. Similarly, Harbort and colleagues (Harbort et al., 2007) coded secondary co-teachers' classroom behaviors using momentary time sampling; however, none of the coding categories explicitly referred to assessment or evaluation of student performance (Conderman & Hedin, 2012).

A Professional Learning Model to Support Co-Teaching

By 2010, co-teaching appeared to be a preferred means for providing educational services to students with disabilities in the general education classroom environment (Ploessl, Rock, Schoenfeld, & Blanks, 2010; Pugach & Winn, 2011). Since change in the way classrooms were structured to meet the needs of all students through the use of a co-teaching service delivery model was the goal, the professionals delivering the instruction certainly required the proper training and follow-up professional learning opportunities. It was argued that teachers should have received this information in their preparation programs. When professional learning was school-based, collaborative, and embedded into their daily lives as co-teachers, it became much more effective. This included the addition of coaching and follow-up activities for on-going continuous

growth as a co-teaching team. Because co-teachers were learning to expand their roles and accept new job responsibilities, professional development assisted them in this personal journey of change when tailored to their individual needs

To have the most impact, this professional learning should occur prior to the start of the use of co-teaching. The training should be accompanied by follow-up coaching and the provision of other supports that have evidenced change in teacher practice (Nelson, Slavit, Perkins, & Hathorn, 2008). Professional learning around co-teaching should be accessible in any PK, K-8, middle school or high school that seeks to be inclusive of all students and that has embraced instructional practices designed to provide challenging learning environments to children with very diverse learning characteristics or needs. All staff members in a school where co-teaching is a service delivery model should be provided with professional learning that at the minimum provides them a basic definition/understanding of co-teaching. Co-teaching partners should have extended opportunities to learn about co-teaching expectations and discuss essential topics.

Special educators in today's schools must show competence at teaching the content of multiple subjects. They must work in various settings, teaching and adapting content across all levels. Added to this complexity are ever-changing reform efforts that are driving forces in the entire education system, including service delivery models and teacher roles. Secondary special educators are accountable for teaching an even broader selection of topics than their elementary school counterparts. They have to provide students with even more in-depth content-area and learning strategy instruction, provide vocational and transition planning, as well as teaching basic reading and writing skills (Mastropieri & Scruggs, 2001; Wasburn-Moses, 2005). Primarily, special educators must

have the collaboration skills that enable them to negotiate roles and responsibilities in the co-taught class and to provide the necessary instructional supports for students with disabilities (Cook & Friend, 2010). They need to understand how their knowledge and skills can facilitate learning in a co-teaching setting. The special educator identifies unique learning needs of individual students and develops curriculum and instruction to meet those needs. They also know learning strategies, motivational techniques, curriculum adaptations, IEP constructions, and characteristics of disabilities. Without these skills, special educators are more likely to remain teaching assistants than become instructional partners (Scruggs et al., 2007). Although the topic of co-teaching was gradually finding its way into special education teacher preparation programs, it became equally important that co-teaching was addressed in the preparation of general education teachers (Duke, 2004; Friend et al., 2010).

General educators often find themselves co-teaching with special educators, but they also can be expected to work with related service providers such as speech/language clinicians, occupational therapists, physical therapists, or counselors. They also may be given the opportunity to co-teach with Title I teachers and/or teachers of students who are gifted and talented as well as teachers in ESL programs. It is imperative that general educators participate in professional learning on co-teaching (Friend et al., 2010).

Professional learning represents a critical venue for schools to provide teachers the acquisition of unique skills and strategies to co-teach. As early as 1990, Friend and Cook maintained that teachers were being “set up to fail” because they enter “their profession with content expertise and method,” but “without the skills to work effectively with their colleagues” (Friend & Cook, 1990, p. 77). Additionally, “What remains clear is

the strong need for a continued dialogue concerning the theory of collaboration for school professionals, its translation into appropriate practices, and its impact on outcomes for students with disabilities” (Cook & Friend, 2010, p. 3). This was reiterated by Ploessl, et al., (2010) who noted that the lack of preparedness of the teachers can be the greatest obstacle to successful co-teaching. Co-teaching relies on two sets of instructional skills. Research-based instructional practices used by teachers alone and an additional set of skills rarely used when teaching alone specifically building and maintaining strong positive collaborative relationships with parity and equity in teaching roles.

Co-teachers need professional learning that supports their commitment not only to working within an equal partnership but also to developing new competence in areas such as creating shared lesson plans, communicating frequently and effectively with fellow teachers, and resolving differences in a way that strengthens, rather than weakens, the collaborative relationship (Gerber & Popp, 2000, Gately & Gately, 2001; Piechura-Couture, Tichenor, Touchton, Macisaac, & Heins, 2006; Rice, Drame, Owens, & Frattura, 2007).

The need for teacher training for co-teaching is well established (Cook & Friend, 1996; Darling-Hammond, 2009; Friend & Bursuck, 2015; Murawski, 2006; Scruggs et al., 2007; Walther-Thomas, Bryant & Land, 1996). Teachers need to be provided information in how to co-teach effectively and efficiently. It cannot be assumed that teachers are able to enter a co-teaching relationship, however willingly, and significantly change their teaching styles readily to maximize the co-teaching potential. As with any new teaching technique, ongoing professional learning is mandatory for co-teaching to be

successful. Topics might include co-teaching approaches, supervised practice, problem-solving, and planning (Friend et al., 2010).

Idol (2006) found in interviews with co-teachers that they felt that more professional learning related to inclusion was needed. Co-teachers also requested professional learning on how to make appropriate instructional and curricular modifications and the use of cooperative, heterogeneous learning groups. Since inclusion can be challenging, more professional learning opportunities should be made available on how to effectively support teachers of inclusive classrooms in a variety of ways, including consulting teaching, cooperative teaching, instructional assistants, and teacher assistance teams. Visiting schools where inclusion is practiced was suggested for those educators who preferred the more traditional methods such as pullout programs.

The overall success and failure of co-teaching can often depend on two items – the quality and timing of the professional learning received as well as the attitudes of the educators involved. Although ‘choice’ is preferred so that collaboration is voluntary, many if not most of the special educators in co-teaching had no choice as the LRE determined for the students was the general classroom with supports brought in as written in the child’s IEP. Despite the fact that they had not volunteered, special educators often rose to the professional challenge and embraced the co-teaching with a positive attitude and open mind and heart. In other words, they chose to succeed.

Conclusion

After an extensive review of literature on observation, coaching, and co-teaching, it is apparent that support to educators plays a significant role as they implement the innovation of co-teaching. A collaborative job-embedded professional learning model

such as the one proposed in this study combined the use of observation and coaching to better assure that co-teaching is implemented with integrity and fidelity. Standards for professional learning and implementation as defined in the study complemented the identification of developmental stages of co-teaching and provided context and background to the study. The results from this study can be used to inform other educators seeking to use co-teaching.

CHAPTER 3

METHODOLOGY

Introduction

This chapter provides the specifics of the research design, the role of the researcher, and a description of the participants. It also contains an explanation of the instruments used: the Co-Teaching Technical Assistance Visit Observation Tool (CT TAV-OT) and the Innovation Configuration Map (IC Map). The coaches' notes from the observations and coaching sessions with 136 co-teaching teams were the data for this study. Data also included 57 IC Maps as completed by some co-teachers. Data analysis methods are explained as well as the necessary information regarding trustworthiness, generalizability, and ethical considerations.

Research Design

Co-teaching is considered a complex phenomenon and thus a qualitative design was judged the most appropriate form of inquiry to untangle the elements of this innovation. Qualitative research, as a form of social inquiry, provides interpretive methods to better understand the social reality of co-teaching. The use of a generic approach allowed for the selection of elements from various qualitative methodologies in the collection and analysis of the data for this study (Lichtman, 2013). These various methodologies provided a way to describe the co-taught classroom and to offer insights about the attitudes, perceptions, and interactions, perspectives, and worldviews of the

teachers that were observed. This detailed account of the innovation creates a better understanding of the dynamics of co-teaching. The use of a qualitative research design allowed for the opportunity to bring readers of this study as close to the reality of co-teaching as possible, by portraying an image of the classroom, as if they themselves had visited.

A major strength of qualitative studies is their ability to get at the processes that lead to outcomes (Maxwell, 2012). Knowledge is often discovered versus constructed in qualitative research; it is evolving and emergent. The flexibility of a qualitative research design allowed for a great deal of creativity and freedom in how to undertake this study. Choices of what design aspects to incorporate and which analytical tools to use with the data that had been collected bear a resemblance to a basic hermeneutic approach of interpretive inquiry by seeking to understand the meaning of parts within a whole (Grbich, 2007). The use of hermeneutic inquiry involves going into the field, collecting data, and subjecting these data to a critically reflective process of data analysis to determine ‘what is going on’ and that, in turn, guides the next phase of data collection.

With complex social phenomena such as co-teaching, qualitative research offers a way for investigating simultaneously its multiple variables of potential importance. This study is anchored in classroom observations which allowed the study of the use of co-teaching approaches and co-teacher relationships as they occurred naturally, without constraint, manipulation, or control. It provides a rich and holistic account of the co-teaching observed and offers insights into the dynamics, qualities, and, perhaps, the essential nature of the phenomena of co-teaching (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005).

Through the analysis of existing data from two tools, the CT TAV-OT and the IC Map, a description of co-teaching will be put forward. By capturing the everyday experience of co-teachers and looking at the areas of strength and/or weakness as they implement can result in greater understanding of and improvements in co-teaching. Important problems of practice can be effectively employed as well as potential solutions.

Role of the Researcher

Merriam (1998) compares the researcher in qualitative studies to a detective in that the researcher spends time searching for clues, following leads, and looking for missing pieces in an attempt to put together a puzzle of the problem under investigation and answers associated with the research questions posed. When the researcher is one of the primary sources of data collection and analysis, the issue of objectivity arises. Thus it is important to know what I brought to this study.

I am an advocate for students with disabilities and a firm believer that co-teaching is most often the best service delivery model to ensure that the least restrictive environment for most students is the general classroom. I have been an employee of Connecticut's State Education Resource Center (SERC) for the duration of the study. SERC has a history of providing co-teaching training and technical assistance to educators since 1998. From 1998 to 2014, SERC records show that thousands of educators from the 169 public school districts, including the Connecticut Technical High School System and the six Regional Education Service Centers (RESCs), have attended one or more sessions on co-teaching. School districts that have benefited from this professional learning model served as sites for this study. Some are urban districts characterized by low socioeconomic status (SES) and racial diversity with two-thirds or

more of the students eligible for Free and Reduced Price Meals (FRPM). The districts are majority minority, educating student populations that are two-thirds or more Black and Hispanic/Latino. Suburban and rural districts are also in the study in order to have demographics of the entire state represented. I started the Co-Teaching Initiative at SERC in 1998 and worked with a design team to develop the trainings with Marilyn Friend, Ph.D. as an advisor. The design team also looked at the work of other researchers and authors at that time (Cook & Friend, 1995; Dieker & Barnett, 1996; Reinhiller, 1996; Salend et al., 1997; Walther-Thomas, 1997). As the work moved into the schools, I developed the CT TAV-OT with members of the design team. See Appendix A. I then worked with SERC's Director of Technology to create the database that houses the data from completed observations.

I served as one of the 22 trainers and coaches who worked with co-teaching teams included in the study. I had established relationships with many co-teachers. Based on multiple successful experiences in providing professional learning to co-teachers and working with them over extended amounts of time, I may have been inclined to see the positives. I had no decision-making authority at the school level, as all administrative decisions regarding scheduling and assignment of personnel remained under the sole jurisdiction of the school principals. As a result, I had minimal conflicts of interest in serving both as researcher and trainer/coach in these schools. I had been a doctoral student at Andrews University while conducting research in the field of co-teaching for a portion of the time period from which the data were collected.

Participants

The participants in this study were educators from across multiple school districts in Connecticut. They self-identified as general educators, special educators, Title 1 teachers, reading teachers, language arts specialists, math specialists, and speech and language pathologists. Some identified as grade level teachers (e.g., K, 1, 2,) and some chose the content area they taught, e.g. Science/Health. Some specifically identified as co-teachers.

There were 615 observations of 452 co-teaching teams in 91 schools in 21 districts over the course of 14 years. Schools were in urban, rural, and suburban settings. Some schools had populations of over 2000 students while others enrolled fewer than 100 students. Academic classes in math, science, English, social studies, health, and world languages as well as vocational classes were observed across K-12 grade levels.

Purposive sampling was used in the selection of observations for data analysis (Merriam, 1998). The observations were delimited based on the following essential attributes: (a) the participants were special educators, general educators and specialists such as literacy coaches, speech and language professionals, or ESL teachers; (b) teams were assigned at least one co-teaching period during the school day; (c) teams had attended SERC training on co-teaching; and (d) teams were observed more than one time by a SERC trained coach.

Paraprofessionals, substitutes, volunteers, and educators who had not participated in any training and may have been observed were not included in the study. It was noted on some observations that some teams had been put together suddenly due to increased numbers of students, increased needs, or changes in assignments or life matters like

maternity leave or promotions. These teams still received feedback, both positive and critical, from coaches but are not included in the study.

Circumstances, at times, prevented many co-teaching teams from being observed a second time. Only teams observed twice or more were included in the study. Using these two criteria, participation in training and multiple observations, the pool of observations/coaching sessions was delimited. Consideration was given to sorting by other simple demographics such as gender or years of teaching experience. It was determined that such sorting was not possible since observation or coaching notes did not consistently reveal that information, likely since the question was not always asked during the coaching sessions making the data incomplete.

Figures 1, 2, 3, and 4 show that the data used for the study included 329 observations (53.5%) with 136 co-teaching teams (30.8%) from 44 schools (48.4%) in 14 districts (66.7 %).

Figure 1. Observations completed and used in the study

The grade levels of the co-teaching teams used in the study ranged from K to grade 12. The largest number of classrooms was first grade, followed by ninth and tenth grades as seen in Figure 5.

Figure 2. Teams observed and used in the study

Figure 3. Schools visited and used in the study

Figure 4. Districts involved and used in the study

Figure 5. Grade levels in the study

This narrowing of the observations for the study was deemed necessary to determine if there were differences in the use of co-teaching after coaching had occurred.

Instrumentation

Connecticut has an extensive history of the use of co-teaching in schools. Co-teaching has been increasingly employed as general education classrooms have become increasingly diverse in: ethnicity; language; cultural, social, and economic differences; and students with varying interests, abilities and styles of learning. Connecticut districts have specifically used co-teaching to meet the needs of students with disabilities. In Connecticut, co-teaching has been primarily identified as a service delivery system that allows for students with disabilities to spend increasingly more time in general education classrooms, thus increasing time with non-disabled peers.

Many districts used co-teaching primarily as a strategy to meet the goals of the 2002 Settlement Agreement reached in *PJ et al. vs. State of Connecticut Board of Education*. The Settlement Agreement was the legal resolution of a federal class action suit brought against the CT SBOE in 1991 by families of students with intellectual disability (ID) (a disability Connecticut formerly called mental retardation) and other groups, collectively referred to as the plaintiffs. The Settlement Agreement sought to ensure access to general education for students with ID by bringing supports and services into the classroom to the maximum extent possible. The Settlement goals served as an impetus to increase general education learning opportunities for all students with disabilities. The Connecticut State Department of Education (CSDE) accepted co-teaching as a ‘responsible inclusive practice’ that could provide structure for schools to make progress toward meeting the Settlement Agreement goals (*P.J. v. State BOE*, 2002).

Additionally, co-teaching has been a means for Connecticut educators to address the mandates of the Individuals with Disabilities Education Improvement Act (IDEA) which requires that schools provide children with Free and Appropriate Public Education

(FAPE) in the least restrictive environment (LRE), preferably alongside their non-disabled peers. Also, co-teaching has been a response to the requirement of the Elementary and Secondary Education Act (ESEA) that obliges schools to improve educational performance results for children with disabilities. See Appendix B for SERC's 2012-13 Results Based Accountability (RBA) Report Card on Co-Teaching.

Co-teaching has also been used to support the needs of English Learners in the general education classroom. According to the *Data Bulletin from the Connecticut State Department of Education, Bureau of Data Collection, Research and Evaluation (2012)*, 29,527 English Learners (EL) were in the 164 public local education agencies. A total of 139 dominant languages were spoken by Connecticut's public school students in grades K-12 in the 2011-2012 school year, from Afrikaans and Algonquian to Zande and Zurate. However, Spanish accounted for 72% of all ELs, and 97% of them received English language services. Also noted was the four-year graduation rate for ELs in the class of 2010 at 60.1%. The needs of this ever growing population have been addressed through co-teaching as well.

Connecticut's Co-Teaching Initiative involves professional learning that consists of training as well as the use of observation and coaching to determine treatment integrity and build sustainability. The co-teaching professional learning model developed in Connecticut is a job-embedded one which provides a direct connection between the work that co-teachers do in the classroom and the professional learning in which they participate. The co-teaching service delivery model is one that provides excellent support to students with disabilities or other special needs, as well as support to students who struggle but have never been identified as having a disability. It is important that

educators working in co-taught classes are sure that the academic content, instructional strategies and behavior management plans being used are research based and effectively implemented. Keeping that in mind, the CT model was designed with three components: training, observation, and coaching.

Training Component – Connecticut Co-Teaching Initiative

The reader should note that there was no data collected from the training component, so it was not part of the data analysis for this study, but the information has been included as background. This section serves as an explanation of the training experience that co-teachers would have had prior to being observed and coached. The section on the training component includes a table with description of the co-teaching approaches, explanation of the phases of learning anticipated for the co-teachers, and a rationale for why training needs to occur.

The practice of co-teaching is well-established in Connecticut. The training session, titled *Making a Difference through Co-Teaching* was developed and has served as a facilitated learning opportunity for teams about to undertake co-teaching. The ultimate goal of the training is for co-teachers to have a common understanding of the definition of co-teaching, parity, and six co-teaching approaches. The training can range from one to five full day(s) and includes lecture, modeling of approaches, observation, discussion, and analysis of co-teaching teams, and co-planning time for co-teachers to facilitate their use of co-teaching approaches. The training is designed to include active participation of the co-teaching teams, real life examples of how and when to use the co-teaching approaches, alternative presentation models such as video, graphic organizers,

and the actuality of being a learner who is taught using one of the co-teaching approaches.

Since the partnership between the educators is crucial to co-teaching's success, it is typically recommended that joint professional learning for special educators and general educators occurs (Friend et al., 2010). This allows for the necessary conversations about the restructuring of classroom and agreement on teaching procedures. These two educators, who possess distinct sets of skills, are expected to work in a collaborative and coordinated manner to teach academically and behaviorally heterogeneous groups of students in the general education classroom. Professional learning on co-teaching can create flexibility within that structure so that all students can be successful. General educators understand the structure, content, and pacing of the general education curriculum at a district and state level, including indicators and objectives. They bring knowledge of pacing, content development, and classroom management. These skills provide a structure for creating a positive, accepting classroom environment that celebrates the individual differences of all the students.

A great deal of information is shared with co-teachers. They need to embrace the philosophy and theories of inclusion and collaboration, and they must formulate a succinct rationale for implementing co-teaching. They are provided time to learn and build the procedures and practices of co-teaching in their classes, including planning, instruction, and assessment. Through study, research, and practice, in collaboration with others, a SERC Co-Teaching Training Model was developed. Figure 6 depicts the content, skills, and concepts that are part of the training model.

Co-Teaching Approaches

In the professional learning around co-teaching, one of the primary goals is to increase the co-teaching teams' knowledge and use of the co-teaching approaches.

Figure 6. Connecticut co-teaching training model

Being given access to the general curriculum and being provided more instructional options are the two most often reported reasons for co-teaching. So what does the design and delivery of instruction look like when there are two educators present? Multiple approaches may be used in co-taught settings that delineate the roles of each professional in providing instruction. The most common are the six highlighted by Friend and Cook (2013): one teach/one observe, one teach/one assist, station teaching, parallel teaching, alternative teaching, and teaming. The use of these six approaches is meant to be varied

and aligned with the strengths and skills of the educators, the needs of all of the students, the content to be taught, and other variables that might exist in the classroom.

Friend and Cook (2013) first proposed their six co-teaching approaches for inclusive practices in the early nineties. Those six approaches are commonly used today across various programs. Co-teaching teams mix and match approaches as well as create their own hybrids or mutated forms as they generalize the premise of and use for each approach. The selection of which approach to use is based on a number of elements, including the teachers' comfort and knowledge in the lesson to be taught, the students' skill level and capacity to learn the content, the content and the goals and objectives for teaching, and the pragmatics of the classroom which can effect grouping choices. Table 1 gives a summary of each approach, including a description, advantages and disadvantages, and examples for use.

Many researchers refer to these approaches (Friend & Bursuck, 2015; Murawski, 2009a, 2009b; Pugach & Winn, 2011; Salend et al., 2002). In all of the approaches, both co-teachers should have differentiated roles yet equal status in the eyes of students and other teachers. Both co-teachers contribute directly to all students' intellectual and behavioral participation and progress. Co-teachers are taught when to use each of the six approaches to allow for substantive instruction to occur.

For this study, the combination of observation, and coaching after training provided the majority of the teams a level of knowledge, skill, and efficacy to move toward using all six approaches when student needs indicated it best to do so. Beyond the six approaches, some co-teachers developed their own versions of co-teaching approaches.

Table 1

Six Co-Teaching Approaches

Description	Advantages	Disadvantages
One Teach/One Observe		
<ul style="list-style-type: none"> One teacher leads the lesson while the other observes a student or several students for specific behaviors or response to teaching strategies. Co-teachers decide in advance what types of specific observational information to gather during instruction and agree on a system for gathering data. Afterward, the co-teachers analyze the information together. 	<ul style="list-style-type: none"> More detailed observation of students engaged in the learning process. Collection of academic or behavioral pupil performance data, including curriculum-based measurement data. Can lead to enhanced instructional delivery. 	<ul style="list-style-type: none"> Teacher who is observing may feel less than productive and not really teaching. Students can question the authority of the one observing.
<p>Example of Use</p> <p>While Katie introduces a new literacy concept with the entire class, Steve is conducting one-minute samples of target pupils' on-task behavior.</p>		
One Teach/One Assist		
<ul style="list-style-type: none"> One co-teacher provides instruction to the full group while the other circulates purposefully through the room to provide assistance and support to individual or small groups of students as necessary by answering student questions, redirecting students, or managing instructions and behavior. 	<ul style="list-style-type: none"> Sometimes preferred in the initial stages of co-teaching. Can assist the special education teacher in gaining confidence with the rhythm, pacing and content of the general education curriculum. Limited teacher planning is needed. Provides basic support to students with diverse needs. Students can get immediate assistance if needed. 	<ul style="list-style-type: none"> The teacher doing the assisting may feel like a teacher assistant. Students may question the assisting co-teacher's authority. Student-teacher ratio does not change. Students can become dependent on the assisting co-teacher and learn to wait for cues, direction, or prompting before engaging with the material. Co-teachers can tend to focus support on just some students and not the rest of the class.

Example of Use: While running a Morning Meeting, Jim is in front of the room directing students while John is circulating through the room touching base with each student, asking an additional question, (e.g. If today is day 6 what will tomorrow be?)

Table 1 – *Continued.*

Description	Advantages	Disadvantages
Parallel Teaching		
<ul style="list-style-type: none"> Both co-teachers plan instruction jointly after dividing students into two heterogeneous groups and teach simultaneously in the same room. Both teachers can teach the same content but use different materials. Co-teachers can address the same goal but through different lessons, or they can do different lessons. Co-teachers using this approach must also be comfortable using the same types of instructional methods or routines. 	<ul style="list-style-type: none"> Provides a way for both co-teachers to have an active role. Lowers the student-teacher ratio. Allows for increased student interaction and/or student to student interaction. Allows the teacher to monitor individual student progress and understanding more closely. Students have more opportunity to respond and answer questions or share in discussions. Smaller instructional configurations better meet student needs. Allows for greater specificity of instruction designed to meet student needs. Both teachers have active role. Co-teachers can teach to different types of learning styles (e.g., visual, auditory). Both groups can have students with disabilities. 	<ul style="list-style-type: none"> Joint planning is required. Co-teachers need to pace their lessons so that both groups of students receive essentially the same instruction within the same amount of time and the same degree of mastery of content covered. Both co-teachers have to be comfortable with content knowledge. Space can be tight. Noise levels may be high. Co-teachers can feel as if they are competing with each other. Students can be distracted by the other group (Helps to have them with their backs to each other). Students with special needs may be grouped too frequently with the special educator.

Example of Use: In a secondary science classroom, Ana and Violet have grouped the students heterogeneously into two groups for discussion on the complex and controversial topic of evolution. Behavior of some students is taken into consideration and they are grouped accordingly. The smaller groups of students find themselves in slightly safer environments that provide them increased opportunities to respond and engage in higher order thinking. Ana and Violet observe the students in their respective group to determine if a student may need clarification or further instruction on various points.

Table 1 – *Continued.*

Description	Advantages	Disadvantages
Station Teaching		
<ul style="list-style-type: none"> Co-teachers divide instructional content into segments and teach in separate stations around the room. The students are also divided. Each teacher then teaches the content to one group and subsequently repeats the instruction for the other group. Either the students switch from station to station or alternatively, both teachers may move. If students are able to work independently with content, a third station may be established. The independent station is positioned so both co-teachers can monitor it. If there is a student with severe behavior challenges, co-teachers should decide beforehand that student should move to the independent station or possibly be a leader during a second rotation at a station with a teacher present. 	<ul style="list-style-type: none"> Both co-teachers are actively providing instruction and maintain equal status. Lower student-teacher ratio. Increases comfort level of new co-teaching teams. Maximizes the use of both professionals. Through co-planning, both co-teachers can provide input in their area of expertise which can capitalize on their strongest teaching assets. Minimum collaborative planning time is needed. Allows both co-teachers to provide more individualized instruction and feedback to students. Different materials can be at each station. 	<ul style="list-style-type: none"> Significant pre-planning is needed in order to divide up the content. The content in Station Teaching lessons cannot be dependent on the order in which content is being presented due to the student rotation. Both co-teachers have to be comfortable with content knowledge. Space can be tight. Noise level can be difficult. Students need to be capable of working independently or be taught to do so The independent station needs to be monitored.

Examples of Use: When content knowledge is a challenge for the co-teachers in a seventh grade math class, one group of students will receive direct instruction on the content from Mark, the general educator, while the second group will be with Amy, the special educator, who will run a practice or re-teaching activity related to the content learned the previous day. A third station would have students working independently on a task that is monitored by one of the two co-teachers. Other examples of stations that might be led by Amy, who may lack content expertise, are: providing vocabulary lessons grounded in real-world applications; adding visual and kinesthetic models (acting words out) for key terms; using graphic organizers; reading text aloud; or using assistive technology.

In a math class where both teachers are comfortable with the content, one co-teacher might work with solving word problems while the other co-teacher examines the numeracy behind mathematics. The third group can work from a textbook or on computers.

In a science class, one co-teacher might work with the language and understanding of concepts while the other co-teacher manages the students in the lab. The third group can practice vocabulary exercises.

Table 1 – *Continued.*

Description	Advantages	Disadvantages
Alternative Teaching		
<ul style="list-style-type: none"> • One co-teacher takes responsibility for the large group and delivers instruction while the other co-teacher pre-teaches, reteaches, or assesses a small group of students for a short period of time that would benefit from the differentiated instruction. • The same lesson can be taught by each co-teacher in a different way to accommodate different learning profiles. • Co-teachers can use alternative teaching for students who are advanced in their knowledge and need enrichment or, alternatively, students who are failing and need more remediation to be successful in the classroom. 	<ul style="list-style-type: none"> • Allows for specialized, intensive instruction for students who need it. • Lowers student-teacher ratio • Small groups can be pulled for pre-teaching, re-teaching, enrichment/extension activity, interest groups, special projects, make-up work, specific skills, vocabulary, new concepts, social skills instruction, homework remediation, or assessment groups. • If the co-teachers alternate roles, equal status is maintained. 	<ul style="list-style-type: none"> • Purpose and membership must vary or co-teachers risk stigmatizing students by always pulling them out of large group. • Takes individual planning but little or no joint planning time. • Requires both teachers to have a clear role while accounting for differences in content background.

Example of Use: Heather is working with the majority of the class as a large group to review a lesson on quantum theory. Anthony is working with a smaller group doing a warm-up activity to pre-teach the science or mathematics related concepts for the upcoming lesson. In this model students who are struggling are not trying to catch up at the end of each day but are given advanced knowledge to move forward in the process.

Table 1 – *Continued.*

Description	Advantages	Disadvantages
Teaming		
<ul style="list-style-type: none"> One lesson is planned and taught by both co-teachers. Both co-teachers have equal voice, presence, and roles within the entire lesson because they have equal knowledge of the content. Both co-teachers are responsible for the learning of all students in the class, including those with disabilities. 	<ul style="list-style-type: none"> Most interpersonally complex. Veteran teachers can find it gives them renewed energy and they try things they would not have done alone. Can be most complex but satisfying way to co-teach. Synergy and Parity. Affords the ability to model quality team and interpersonal interactions. Allows both teachers to blend their teachings styles and expertise. 	<ul style="list-style-type: none"> Requires a great deal of planning. Requires high levels of trust and commitment. Most dependent on teachers' styles. Harder to achieve at the secondary level and even more difficult in science or mathematics areas with higher-level content. Typically emerges in the second or third year together, although it can emerge sooner when the special education teacher has equal content knowledge and the general education teacher has a strong background in special education.

Example of Use: When they use teaming, Michelle and Barbara take turns leading discussion while the other models or demonstrates.

Each may, throughout a lecture, be asking higher-level questions and providing equal insight into mastering the key concept for the day. As students move to practice activities, both co-teachers work with all students to ask and answer questions equal amounts of the time. Both co-teachers serve as equal coaches to students when they work in cooperative groups or on lab activities.

At the beginning of their partnership, co-teachers are usually uncertain as they attempt to use the different co-teaching approaches. With a great deal of practice and reflection, the co-teaching team becomes more fluent, accurate, and confident. They use the approaches regularly and transition between approaches with ease. Finally, they reach a point of generalization and adapt the approaches to make them work for their classroom. An example of such an adaptation is the co-teachers who created their own version of one teach/one assist to be one teach/two assist so that after a mini-lecture by one teacher, both co-teachers moved about the room assisting, monitoring, and assessing students.

Phases of Learning and Co-Teaching Approaches

There are four commonly delineated phases of learning. Co-teachers are taught that they will typically advance through this predictable series of learning phases in relation to co-teaching before they can fully implement the model.

Starting in the *acquisition* phase, co-teachers are usually halting and uncertain as they attempt to use the six approaches. They have learned the approaches but are not yet accurate or fluent in the use of all six. When they move to the second phase called *fluency* or proficiency, the co-teachers are able to use all six approaches accurately, but slowly. With continued feedback and practice from observation and coaching, the co-teachers move to a third phase called *generalization* or maintenance. Here they demonstrate both accuracy and fluency in the use of the approaches but in limited situations or settings. The co-teachers finally reach *adaptation* phase where they are fluent, accurate, and confident in using the approaches in many situations or settings. The goal is to continue to adapt or modify the use of the co-teaching approaches to meet novel demands in any new situation (Haring, Lovitt, Eaton, & Hansen, 1978).

By understanding and experiencing their own movement through the phases, co-teachers are also encouraged to look for a connection between the phase of learning their students may be in and the most appropriate co-teaching approach to use to advance that learning. This provides the co-teaching team a rationale for the use of that approach. If co-teachers identify the phase of learning their students are with a particular targeted skill, they can better align teaching strategies and instructional practices. This can provide co-teachers with an ongoing decision-making model for effective and efficient instruction (Lee & Picanco, 2013).

Training is Essential

Teacher effectiveness has been identified as one of the most important factors affecting student achievement. It is not surprising, then, that in the current era of standards-based reform wherein all students are expected to achieve more academically, many have called for improvements in teacher effectiveness. Professional learning is essential for co-teachers to be effective teachers.

If co-teaching is to succeed, teachers must have not only the will but also the skill to make it work. Training was the chosen venue toward building both will and skill. Many researchers emphasize the importance of training in co-teaching, citing several examples of training needs such as common conceptual frameworks, language, and sets of appropriate skills (Scruggs et al., 2007; Villa, Thousand, & Nevin, 2008; Friend et al., 2010). Co-teaching has gradually been included in special education preparation programs (Duke, 2004). However, it remains uncommon in the preparation of general educators (Friend et al., 2010). Interview studies and surveys indicate that co-teachers generally admit to little or no training before co-teaching, though they realize its

importance (Fennick & Liddy, 2001; Magiera, Simmons, Marotta, & Battaglia, 2005). General educators need to feel prepared to work with students with disabilities, and special educators need to feel comfortable with the content and curriculum in a general classroom setting. Thus, co-teaching should be a professional learning topic at the university level but also at school, district, and individual educator levels. The appropriate training is necessary for both general and special educators to provide them with the essential knowledge and skills to effectively implement shared planning, teaching, and assessing for all students. All teachers should be trained in using different co-teaching approaches in order to understand their usefulness and be able to choose well in particular classroom settings. In addition, disability training is required, before students can be fully educated in general classrooms. This can also serve to make parents feel that the needs of their children are met in co-taught classrooms (Strogilos & Tragoulia, 2013).

The core content of the CT Co-Teaching Training Model was taught to all co-teaching teams who were observed as part of this study. The content of the training has evolved over time, but emphasis has remained on two of the six focus areas: the definition of co-teaching and approaches; and parity. (Please refer to Figure 6.) When allowed greater time and access, training went deeper into additional topic areas. This was based on the needs of the staff, which varied from school to school. Typical topics included (a) observation and data collection techniques; (b) problem definition and problem-solving skills; (c) informal assessment procedures, including curriculum-based assessment; (d) curriculum-based instructional modification; (e) classroom behavior management techniques; (f) communication skills, including techniques such as active listening, questioning, brainstorming, and negotiation; (g) consultation skills; and (h)

team-building and team-leadership skills (Friend, 1984; Gerber, 1991; Graden, Zins, & Curtis, 1988). As collaboration is the foundation of co-teaching, training emphasized the importance of open and honest communication between the co-teachers while planning so they can outline the roles and responsibilities of each teacher for both teaching and administrative tasks (Villa, Thousand, Nevin, & Liston, 2005).

Participating co-teachers attended training prior to implementing the co-teaching model, typically in the summer before the school year started. The co-teachers were informed of the goals of co-teaching model. They were given an opportunity to ask their questions and share their concerns regarding co-teaching. Often this was done through a merger method, which allowed everyone to have voice and allowed for categorizing concerns into various areas. Typically 12 topics or concerns/questions surface: roles and responsibilities, time for planning, space, schedules, number of students with IEPs, administrative support, work with parents, number of classrooms in which a special educator co-teaches, discipline, grading, content/curriculum, and what co-teaching looks like. Training covered all these topics.

During training, time was dedicated to the definition of co-teaching to provide context and rationale for co-teaching. As previously mentioned, CT uses the definition from the work of Friend (2014). Emphasis was placed on each of the points in the definition for clarification and understanding. Eventually the topic of the training turned to parity. The stage was set from the beginning of a co-teaching relationship that both co-teachers have equal decision-making, responsibility, and accountability. When time is spent sharing philosophies and discussing their belief systems early enough in the

relationship to better understand each other's perspectives and teaching styles, fewer problems regarding parity are likely to emerge later.

When developing a working relationship, co-teachers needed to look at their own style of teaching and communication. Teachers who were unfamiliar with their own teaching and communication habits found it harder to coordinate with those of another person. Various approaches worked such as keeping a private journal, using a self-inventory tool, or having conversation with each other to gain insight. This honest self-examination was the first step toward improving important communication skills that strengthened the relationship between co-teachers allowing them to work toward achieving a common belief system and a shared worth ethic as seen in successful partnerships.

Another method for building the co-teaching relationship was the use of inventories. To guide these initial discussions, co-teachers assessed their skills and strengths using various published inventories (Conderman et al., 2008). Teams also used the Colorado Assessment of Co-Teaching (CO-ACT) (Friend, 2008). A responsibilities checklist laid the foundation for the equivalent contribution of each member of the co-teaching team, ensuring that both individuals take responsibility for the classroom environment. The use of these types of tools has led co-teaching teams to having parity which fostered even greater communication and collaboration.

The concept of team formation revolves around the instructional and procedural belief systems of the teachers and the how these evolve when teachers moved from solo teaching to a co-teaching role. Thus the training shifted to the six co-teaching approaches. A variety of co-teaching approaches were demonstrated and modeled for different

instructional reasons. Co-teachers were provided with information on the ‘how-to’ of the six co-teaching approaches as well as the benefits for each approach, and the potential challenges in their use. Teams watched videos of real co-teaching teams in their classrooms so they could see and hear other practitioners in exemplary model sites model and explain how they used the co-teaching approaches. Training used national examples of co-taught classrooms such as those on *The Power of Two* videos (Friend, Burrello, & Burrello, 2005). CT also collected and used its own video clips of state models for future professional learning sessions. The video clips were interspersed with guided discussions and activities that enabled co-teachers to analyze the practices seen and to apply them to their own classrooms. Professional learning experiences built the capacity of co-teachers to implement a variety of instructional approaches, use grouping and instructional strategies, and take full advantage of both teaching professionals to address the individualized needs of all students in the classroom (Friend & Pope, 2005).

Teams were given time to plan lessons together using each of the approaches. They were asked to try each approach prior to the first follow-up meeting or technical assistance (TA) session so that the discussion can be authentic, job-embedded, and specific to their experiences. The focus was on collaborative delivery and collaborative teaming using the six approaches. Each approach was covered thoroughly. Teams were told to emphasize the use of the parallel teaching, alternative teaching, and station teaching approaches that provide a higher intensity of instruction due to reduced student-teacher ratio. One teach/one observe is promoted for specific times such as the beginning of the year or when data needs to be collected, or at any time when specific student

behaviors needed to be analyzed. One teach/one assist and teaming are used in times of transition between instructional activities.

Next, training moves to discussion on the instructional cycle and how the co-teachers can co-plan, co-instruct, and co-assess. Researchers argued that the most effective way to learn co-teaching is through hands-on experiences with a wide range of collaborative interactions (Austin, 2001; Kluth & Straut, 2003). The CT model suggests that co-teachers should be in training, in a team meeting, or being observed at least once a month for a year or two. Focused discussions with various scenarios regarding potentially problematic areas and barriers are held for reaction by the co-teachers. Co-teachers are taught to use a collaborative problem-solving process. Armed with data from observing and assessing, co-teachers choose the best delivery methods to accommodate the individual needs of their students. For example, the use of parallel teaching often is selected for targeted review and drill with a lower student-teacher ratio by using two groups. Providing a supported time for co-teachers to try out ideas with one another can increase their use of co-teaching. Emphasis is on the importance of assessing the goal of each lesson and how best to utilize the strengths of the teachers and the attributes of each co-teaching approach to meet the needs of the students in the classroom.

The training on co-teaching incorporated a number of best practices previously cited as effective. The training was interactive, with information sharing interspersed with opportunities for discussion and questions by the co-teachers in keeping with an optimal learning environment for adults. The trainers modeled the co-teaching approaches as well as the use of research-based strategies for students with disabilities, such as advance organizers, mnemonics, and structured lessons. Co-teachers are taught

that classroom instructional practices must change substantially; instruction cannot remain whole-class and lecture-driven. Co-teachers are taught principles of effective instruction and practices that are frequently recommended, such as peer mediation, strategy instruction, study skills, organizational skills, hands-on curriculum materials, test-taking skills, comprehension strategies, self-advocacy skills, and self-monitoring. Strategies for the differentiated instruction that is essential for diverse learners in co-taught classrooms are also taught. Methods to tier assignments and scaffolding supports for students with disabilities, along with activities and materials to promote increased student engagement were demonstrated at each professional learning session.

Perhaps most importantly, co-teachers are taught the necessity of specially designed instruction for students with IEPs. This goes beyond differentiation as the specially designed instruction uses assessments and data from the IEP to identify what a student needs in relation to their specific disability. The intensity of instruction is carefully planned and purposeful; it is direct and explicit. Progress monitoring will likely occur in more frequent intervals to determine the effectiveness of the instruction. Dieker and Rodriguez (2013) wrote of multiple ways that special education teachers can provide specially designed instruction and support to students in co-taught classrooms. They can ensure concepts are explicitly taught. Vocabulary should be specifically grounded in the content as well as strategies for reading texts, taking tests and organization skills are integrated into the curriculum.

In training, co-teachers worked together to learn when they should best use each of the approaches. They learned to shape their co-teaching roles not on the whim, personality, or forbearance of the general educator but to the instructional possibilities

and practicalities of the curriculum being taught to meet the needs of the students. They learned to note each other's areas of expertise and to agree upon specific responsibilities and the research-based instructional methods they employed. These frank and pragmatic discussions helped co-teachers develop a shared vocabulary and provided direction for lesson planning and reflection. The discussions helped co-teachers focus on evidence-based methods for instruction and learning, not just their favorite ones. Co-teachers learned to target the skills and strategies that a particular student needs to learn and to adapt the instructional environment if necessary to create opportunities for small-group or individual, direct, intensive instruction. Both co-teachers learned how to help students apply the skills learned in their content classes. Training also gave co-teachers time to be reflective about their practice and to meet regularly to discuss how the co-taught lessons went (Dieker & Murawski, 2003).

If additional time was allowed for co-teachers to be out of their classrooms, additional advanced topic professional learning sessions were made available such as: *Planning for Powerful Instruction*, *IEPs in the Classroom*, *Differentiated Instruction*, and *Supervision & Evaluation of Co-Teachers*.

Observation Component – Connecticut Co-Teaching Initiative

Classroom observations were initiated in schools with co-teachers in their natural settings. It was decided to employ an open-ended observation protocol to reflect the variations that might exist, and the CT TAV-OT was used. (See Appendix A.)

Classroom observations were 15-30 minutes in length. They were deliberately brief to provide a snapshot of the classroom. Indicators of quality that examined implementation integrity included an analysis of the roles and responsibilities of each

teacher and the appropriate use of evidence-based instructional strategies during co-teaching. The CT TAV-OT does not have a satisfactory or unsatisfactory rating, but rather, a place for the coach to identify areas of need. The strategy behind this was to give support to the co-teachers rather than make them feel threatened. The tool served as a means for capturing what was going on in the classroom. It provided the opportunity for specific written feedback on clearly delineated components.

The CT TAV-OT has six sections. The first section requires specifics about the co-teaching team being observed: names, role, grade, as well as the time, date, and place of the observation. The second section records the whereabouts and interactions of each educator in the classroom, based on the six co-teaching approaches. If a team used a number of approaches, then each was recorded. In the third section, the coach completes a drawing of the layout of the classroom, making note of where furniture is placed (rows of desks vs groups of desks). Teachers' movement throughout the classroom was noted, or a lack thereof was noted. Materials and technology in use by each educator and the students in the room were recorded such as books, paper and pen, computer/calculator, manipulatives, multimedia equipment, and visual aids.

The fourth section is for notes which include a description of student behaviors, teacher behaviors, noteworthy classroom or behavior management routines, and instructional strategies used. Notes might include the instruction presented, the activities that were conducted, the interactions between faculty and students, and grouping formats. Some scripting occurred as coaches made note of who did the talking and the tone and tenor of the voices. They recorded which educator was giving assignments and which was providing procedural information or directions to a student or group of students

regarding an activity. They recorded instruction, discussion, drill and practice, written assignments, kinesthetic activities, and projects (hands-on activities resulting in a product). Coaches often made note of nonverbal communication techniques used by co-teachers, when humor and spoken comments for communication. They noted when students sought out both or either teacher for help.

Coaches looked for teacher comfort and competence with the content, curriculum, standards, and goals of the classroom as evidenced by the instructional roles played by each co-teacher. They noted if teachers appeared familiar with content, methods, and materials used. If assessment occurred during an observation, the measures for students were noted. If accommodations for students with IEPs were observable, how they were incorporated was recorded.

During the coaching session, co-teaching teams were asked how much planning time was provided. Notes were taken regarding how they planned and how they shared that responsibility. If changes to the plan occurred spontaneously during the observation, that was noted. Discussion included how classroom rules and routines had been developed and used.

The fifth section of the observation tool provides space for *Highlights* and *Recommendations*. Coaches used these two sections provided feedback on the positive aspects of their class and critical feedback for areas that needed changes. While operating under the premise that co-teaching teams can always improve, coaches also made recommendations to further enhance the shared instructional time. The sixth section provides space for the name of the coach, a signature, and a date for return for another observation if one is to occur.

Coaching Component – Connecticut Co-Teaching Initiative

Semi-structured coaching sessions with co-teachers were held for 15-20 minutes after each observation. Co-teachers were coached together. Sessions were dynamic as the content of the coaching was dependent on what was seen and the responses of the co-teachers. For example, some questions were necessary for clarification of what was observed as well as the planning that went into the lesson. Some frequently used questions were these: Why did you choose that approach? How much time did you have to plan? How were students grouped? Did you meet your objective for the lesson? Additional other questions were driven by the needs of the co-teachers. If more time for coaching was needed, a follow-up session was scheduled. See Appendix C for *Sample Coaching Questions*.

Coaching after professional development sessions on co-teaching helped with the ongoing collaboration and assistance necessary to implement new instructional approaches. This facilitated in reducing the research-to-practice gap. Practice was improved by using observational data that links student outcomes to the desired changes in teachers' practices. Coaching provided co-teachers different ways to evaluate the curriculum. It raised co-teachers' consciousness of teaching strategies and conceptual framework. It helped co-teachers relate changes in students' behavior to the attainment of specific cognitive goals.

Models that influenced the coaching done in the CT model include that of a 'partnership model' between observers/researchers and practitioners (Kelleher, Riley-Tillman, & Power, 2008). Rather than the 'expert coming into the room' mindset, a partnership is formed with the co-teachers regarding implementation and evaluation of the co-teaching. Coaches were able to work with co-teaching teams to increase the levels

of use of various co-teaching approaches when they were more familiar with the classroom and its particular challenges. They worked with the teams to make things better for the educators as well as the students.

Another technique used to influence the coaching component was reflective questioning. This allowed the coach to prepare and ask questions designed to provide the chance for the co-teachers to explore their knowledge, skills, experiences, attitudes, beliefs, and values (Lee & Barnett, 1994). The questions were focused on the observation and also asked about the planning that went into the lesson and the assessment used to determine if the lesson was successful. This had bearing on the next lesson as well. The questions were neutral and non-judgmental. They were questions meant to clarify such as ‘What happened when you did not finish the parallel lessons at the same time?’ They were also questions meant to seek consequence or purpose such as ‘What guided your choice of grouping students for the stations?’ The questions were meant to link various elements of their teaching world such as ‘How has this experience validated or changed your thinking about co-teaching?’

In order to achieve a level of expertise, the study used the professional learning model of coaching tied directly to classroom practice. Through coaching, co-teachers learned how to explain what they were teaching, how to model their thinking processes aloud, how to encourage student inquiry, and how to keep students engaged.

Developmental Stages to Co-Teaching

The level of experience and expertise possessed by the co-teachers in the study could make a difference in the coaching provided to them. Therefore, coaches were trained to consider which developmental stage co-teachers were in at the time of the

coaching session. Gately and Gately (2001) identified three developmental stages in the co-teaching process based on their extensive experience, classroom observations, and training with co-teachers on co-teaching. The first stage is the *Beginning Stage* when co-teachers begin to develop boundaries and establish a professional working relationship. The second stage is the *Compromising Stage* when co-teachers build trust levels as they become more open and honest with each other and see greater give and take of ideas for instruction or classroom and behavior management.

The third stage is the *Collaborative Stage* when the relationship is seen as one of trust and mutual respect for each other as colleagues and professionals. The co-teachers in this stage have a sense of comfort that allows them to work together and complement each other's teaching. In this study, coaches had been trained to recognize that co-teachers in each stage will respond differently to coaching. The observations show that coaches provided co-teaching teams varied and mixed amounts of encouragement and praise; they sometimes acknowledged the challenges the teams faced. Direct constructive feedback was also provided and may have been relative to the stage the co-teaching team appeared to be in. For example if a coach observed a team in the *Beginning Stage*, emphasis was often on the working relationship.

There is a parallel to the developmental stages of co-teaching to the previously discussed Stages of Implementation (Fixsen et al., 2005) in Chapter 1. Teams in the *Beginning Stage* of co-teaching could be considered in the exploration stage. Those teams in the *Compromising Stage* of co-teaching were likely in either the installation or initial implementation stage. Those co-teaching teams that had reached the *Collaborative Stage* of co-teaching were in full implementation or sustainability stages.

Innovation Configuration Maps (IC Maps)

In several districts, additional professional learning sessions provided co-teaching teams with the opportunity to use the Concerns Based Adoption Model (CBAM) which is a widely applied theory and methodology for studying the process of implementing educational change by teachers and by persons acting in change-facilitating roles (Hall & Hord, 2006). Innovation Configuration Maps (IC Maps) are one of the three components in CBAM.

In this study, a previously developed IC Map was utilized for further self-assessment and coaching (Hall & Hord, 2006). In some coaching sessions that occurred between observations, 57 co-teachers independently scored themselves on the IC Map and then paired with their partner and discussed implementation as a team. Please refer to Appendix D to see the Connecticut Co-Teaching Innovation Configuration Map (CT ICMaP). The IC Map pushed co-teachers to ask themselves three questions:

1. What does co-teaching look like when it is in use?
2. What would I see in a classroom where co-teaching is used well?
3. What are teachers and students doing when co-teaching is in use?

An IC Map identifies and describes, in operation, the major components of an innovation, or new practice. There are 12 components identified in the Co-Teaching IC Map. All components were addressed in training, looked for in classroom observations, and/or discussed during coaching sessions. The coaches decided which of the components to discuss with the co-teachers following an observation. Due to the complexity of co-teaching and the amount of detail required, a continuum of behaviors was developed for each of the 12 components. Each continuum has a number of

variations. The IC Map focuses on what the co-teachers are doing and describes something you can “see” happening in the co-taught classroom. Eventually, co-teachers can use the IC Map to evaluate where they are with regards to implementation. The IC Map was used to determine implementation integrity and fidelity of best practice and assisted coaches in providing directions for next steps.

Feedback as One Method of Coaching

Another method of coaching developed was feedback. Feedback was used as part of an interactive, empirically-driven, problem-solving process. ‘What went well during the lesson?’ ‘What did not go well during the lesson?’ ‘What are the goals for the next lesson?’ In this study, feedback was provided directly after an observation in the coaching session in the form of specific and focused comments on the actions of the co-teachers. The coaches addressed the requirement that co-teachers identify and use co-teaching approaches and instructional practices that were feasible within the context of their classroom.

In some schools, other coaching methods included monthly focus group meetings to share experiences with each other, and forums to discuss issues, concerns, and procedures.

Procedure for Instrument Use

Coaches received professional learning on how to observe and coach co-teaching teams in order to build inter-rater agreement. The process for preparing coaches to go into classrooms consisted of four steps. First, coaches attended a session on co-teaching to learn the six approaches. The second step was training the coaches in the use of the CT TAV-OT. Coaches watched videos and recorded notes as if doing an observation. Notes

were compared, data was checked, and an agreement was reached on what was worth noting and what potential recommendations could be made to the team. For the third step, the coach shadowed an experienced coach in the field and then compared notes again. The coach followed the lead of the experienced coach in the debrief/coaching session. In the fourth and final step, the new coach completed the observation and debrief/coaching with the experienced coach watching and providing them feedback. The observations in this study were done only by trained coaches with periodic checks on reliability. Some coaches had to be asked to enhance the quality and quantity of their written documentation of the coaching process.

The co-teaching teams for this study were observed two or three times, once at the beginning of the year and then after intervals of three months or more until the end of the school year. After an observation/coaching session, a copy of the observation tool was given to each of the co-teachers. Copies were not sent to the principal as the observations were not meant to be evaluative but more formative. Co-teachers needed to feel they could take risks with co-teaching. The CT TAV-OT was used in observations and coaching sessions with the 136 co-teaching teams. The coaching notes that were recorded on the observation tool including feedback and recommendations were data for the study.

Most coaches preferred using paper and then transcribed the information from their notes into the Co-Teaching TA Visit Database, an electronic database at SERC. The data can be searched by any one of the following fields: year, date of visit, district, school, grade level, teachers, names of TA providers, the co-teaching approaches that were observed, as well as teaching behaviors and instructional strategies used. Notes

regarding what was seen and heard were scripted into the database as well as comments and recommendations that were recorded during coaching.

Data Analysis

Prior to this study, preliminary data review of the observations was done by checking and tracking the observation data as they were being collected to determine an overall sense of the level of implementation of co-teaching. Given my role as coordinator of SERC's Co-Teaching Initiative, these data were used to determine if any major issues had emerged. This review provided insight into the areas in which co-teaching teams needed greater assistance or required follow-up. It also provided indicators of areas for adjustment in future professional learning sessions. I completed this review after each session, and an overall review was done yearly to direct the professional learning sessions for the coming year. The reviews were brief and superficial but provided some guidance and direction.

For the data analysis to be done in this study, a content analysis method was used to identify common patterns, characteristics, and components or categories (Merriam, 2014). Data collected during the observations and coaching sessions were analyzed in accordance with a modified version of Creswell's plan for qualitative analysis (Creswell, 2003). Coding of transcribed observations was accomplished by sorting coaches' notes to related themes such as parity or planning. Thematic matrices were constructed to identify major themes and associations between them and their implications for future practice and research.

Various sections of transcripts were highlighted as they related to the research questions. Data were coded with a focus on identifying patterns, characteristics and

components such as approaches used, evidence of parity between co-teachers, and instructional strategies used. The codes were used to identify important features of the data that might be relevant to answering the research questions. As the data were pulled apart to allow for the closer examination, I considered free or imaginative variations of each theme. Codes were used to generate a description of and name for themes occurring in the different components (Creswell, 2003).

Familiarization with the data involved reading and re-reading them so as to become immersed and intimately familiar with their content. The data were critiqued by asking the following questions: Who was being observed? What approaches were used? Where were the data collected? and When was the observation, and for how long? “A flip-flop technique” was employed that allows for looking at aspects from different perspectives, turning a concept “inside out and upside down” (Corbin & Strauss, 2014, p. 97). It also meant asking the questions why? so what? and what if? Special circumstances or contextual issues that might have affected the data were considered. I developed a deep understanding of the database content and issues evident and important to address.

Establishing Trustworthiness

Guba and Lincoln (1981) cite four major procedures to establish trustworthiness in qualitative research: credibility, transferability, dependability, and confirmability. The authors compare these concepts to those found in conventional research: internal validity, external validity, reliability, and objectivity, respectively. Credibility (internal validity) is established by utilizing techniques that increase the likelihood of dependable results. The length of time of the data collection, the observation of a sufficient number of classrooms as to differentiate the relevant from the irrelevant, and the triangulation of data all

contribute to the credibility of a qualitative study. Credibility in this study was achieved through the use of on-going repeated observations and coaching debriefing sessions with co-teaching teams.

Transferability (external validity) enables someone to imagine the study happening in another place or time. The description of the entire study needs to be so rich that one could reasonably infer that any imagined setting could be possible.

Transferability was achieved through the provision of both descriptive and demographic details of the co-teachers, their classrooms, the research design, and the context for each observation.

Dependability (reliability) is established by asking the question – How can an inquirer persuade his or her audiences that the research findings of an inquiry can be trusted? An examination of both the research process and product can be used to determine that the study was conducted in a reliable manner, with results that are supported by the data. The dependability (reliability) component of this study was established by the use of the CT TAV-OT as a data collection process for a number of years. There was consistency in the elements identified as focus areas for professional learning in co-teaching such as approaches used, parity of co-teachers, and the amount and type of interaction with all students.

Confirmability (objectivity) is necessary for trustworthiness. Confirmability provides assurance that findings are grounded in the data and not in a personal analysis. If an audit of the process and materials used in the research were done, the resultant audit trail would serve to establish confirmability. In this study, confirmability was found

through the use of a reliable cadre of coaches and the use the same tool and process in each situation.

Generalizability

Qualitative studies view generalizability differently than quantitative research studies. By painting a vibrant portrayal of excellent co-teaching, I have created a way through which co-teaching can be identified. By looking for themes and patterns, I can generalize the images. By trusting this collection of themes and patterns, I have established a theory that provides a description of what occurred during observation and coaching that integrates the elements of co-teaching and instruction.

A reliable image of co-teaching can be used to look at the features of another classroom to see if they approximate the image desired. The image becomes more clearly defined and is used as one of the lenses to interpret another classroom. Images allow us to learn vicariously from the experience of others (Eisner, 1991). By its very nature, all learning involves generalization. The ability to use information in a new situation serves as evidence and the demonstration that learning has occurred. Since no two situations are identical, generalization must happen, although the most critical generalization is that which occurs when readers apply the research to their own contexts.

Therefore, the results of this study on professional learning can and cannot be generalized to co-teaching in all classrooms, schools or states. The readers need to determine whether the findings fit the environment in which they work (Eisner, 1991). The study investigated the effectiveness of observation and coaching on the practice of co-teaching, but the readers must find the universal features of the co-teaching model. Readers must make connections to their own settings and contexts and use the resources

and thinking as a guide for their own implementation and design. Their goals for co-teaching may be the same, but the most effective route to get there depends on a variety of conditions specific to their situations, most particularly the students with whom they are working.

Ethical Considerations

To protect the confidentiality of the co-teaching teams in the study, no personal information beyond name, position, and name of school were collected. In writing the study, no teacher names or names of schools were mentioned; instead, pseudonyms were used in reporting teachers' comments. At times, statements of multiple participants were used to create composite participants. After determining which teams met the criteria of two or more observations, names and schools were hidden so that I did not know the school or teachers I was analyzing. Additionally, in collecting and using the data, the information was entered into a database and when the report is printed as an Excel file, the names and schools were removed from the file before the data were further investigated. After selection, the original observation sheets were redacted by blacking out the names of teachers and schools. Eventually, they were shredded.

Summary

Challenges to conducting research on co-teaching exist. The design of this study attempts to address some of those challenges. First, limiting the study to only co-teaching teams that had been trained provided greater certainty that teams were working with a clearly articulated definition and how it could be implemented with fidelity. Second, there was specificity to the data that were collected through the use of two instruments – the Co-Teaching Technical Assistance Visit Observation Tool (CT TAV-OT) and the

Innovation Configuration Map (IC Map). The coaches' notes from the observations and coaching sessions with 136 co-teaching teams and the IC Maps completed by some teams were the data for this study.

CHAPTER 4

FINDINGS FROM DATA ANALYSIS

Introduction

This chapter presents the findings and results of the analysis of data from notes made by the coaches during their observation and coaching sessions with co-teaching teams. An iterative, recursive process of sorting, categorizing, and linking data into narratives was used to make meaning and provide a rich description of co-teaching. Data were analyzed from two primary sources. The Connecticut Co-Teaching Technical Assistance Visit Observation Tool (CT TAV-OT) was used with all teams. The reader should note that the CT TAV-OT is also called the observation tool in this chapter. The second source of data was the Innovation Configuration Maps (IC Maps) which were used with only some of the teams.

The study focuses on the individual and collective stories about teachers who received support through observation and coaching in order to implement co-teaching in their classrooms. A qualitative study design was used to obtain a deeper understanding of co-teaching and the collaborative practices and teacher behaviors that were evidenced by the use of co-teaching approaches and a variety of instructional strategies. The stories included serve as examples of the 329 observations. They are based on the data from notes recorded by the coaches while observing and coaching co-teaching teams.

The IC Map provided context for the definition of co-teaching for both the coaches and the co-teachers who were being observed. The 12 components on the IC Map reflect the themes from research question one. They helped to clarify the description of co-teaching as it was implemented by some of the co-teachers in this study. Planning, instructing, and assessing are identified as components of co-teaching in the IC Map. The co-teachers who used the IC Map reflected on how they look in the realm of the co-taught classroom.

Research Question #1

The first research question posed is: *When teachers have participated in professional learning specifically related to co-teaching, what themes emerge from notes recorded by coaches during observations in the classrooms and follow-up coaching sessions?* The following sections of the observation tool were used: (a) drawing of room set-up; (b) notes; (c) highlights; and (d) recommendations. Coding was done by reading through the data multiple times which allowed for great familiarity with it and sorting into various themes. See Figure 7 for samples from the observation tool. The narratives and examples throughout the chapter come from notes such as these.

Four themes emerged from the observation data. They are: (a) the importance of the development of parity; (b) a wide range of co-teaching approaches were identified in the initial observations; (c) during the second observation, coaches identified usage of more co-teaching approaches that allowed for more intensive instruction; and (d) influence of planning time on the use of co-teaching approaches.

Figure 7. Samples of recommendations from CT TAV-OT

Findings from each theme will be analyzed and narrative examples provided. The questions used during coaching and the specificity of recommendations made by coaches were recorded in the highlights or recommendations sections of the observation tool.

Before continuing with the findings, it may be helpful to highlight the use of data from one specific section on the observation tool. The drawing of the room set-up helped to determine the use of physical space and is referenced throughout with implications on each theme. The transcribed descriptions in the database regarding room set-up were quite cryptic, which did not garner as much information as desired, so the redacted observation tool forms were revisited. By referring to the actual drawings made by the coaches, a better picture about the use of space occurred. The drawings are basic, but they

get the point across. Student desks were counted and shown where they were placed in the room. Specific attention was paid to the placement of the teacher(s) desk(s). Other elements such as rugs, tables, boards, and windows were often recorded. The coaches recorded if the set-up of the room was student centered and conducive to the co-teaching approaches. Coaches addressed the use of physical space if they thought it would further the use of all six co-teaching approaches.

The Importance of the Development of Parity

The first theme investigated was the importance of the development of parity given that full implementation of co-teaching cannot occur without parity between the co-teachers. It appears that the coaches looked for parity as over 75% wrote comments regarding its presence or lack thereof on the observation tool. In relation to parity, the data were coded into five different areas: (a) roles of co-teachers; (b) teacher to teacher interaction; (c) classroom/behavior management; (d) interactions of co-teachers with students; and (e) student perceptions of having two teachers. Stories from the data were used to illuminate each of these coded areas.

Roles of Co-Teachers

Initial observation can bring with it recognition as to whether or not the classroom space itself seems to be truly shared by the two co-teachers. Notes made on the physical environment include seeing names on doors and desks and both names on board. The coaches looked for ways that the co-teachers had reached parity in their roles. It is hoped that co-teaching teams will move beyond the typical scenario of one co-teacher, frequently the general educator, taking responsibility for the core content/curriculum while the other co-teacher, usually the special educator, moving around the room

assisting students. Instead, all roles should be delineated and shared. This includes planning and providing the specially designed instruction necessary for students with disabilities, planning and teaching core curriculum and content, as well as assessing and monitoring the progress of all students. Reciprocity in these roles, as seen in the roles in the co-teaching approaches, can be an indicator that special educators had become confident in delivering instruction in the content area and at the same time, general educators had mastered the strategies that allowed them to reach students with special needs. The instruction in the classroom was more intensified and specifically tailored to ensure the success of all students.

One particular classroom observed offers such an example about parity in relation to the roles of the co-teachers. The door to the second grade classroom had a sign on it that said “Welcome to Our Room” with apple decorations. A large red apple had Mrs. Smith in black letters in the middle. A smaller green apple had Miss Jones in smaller print. This small apple was the same size as those of the students. The coach noted that she “was not surprised” when she observed “Mrs. Smith leading the lesson while Miss Jones was on the periphery of the room occasionally helping a few students but with no apparent sense of direction or purpose.” After the observation, the coach used the sign on the door with its apples to point out that “a subtle message was being delivered to students, parents, and other staff as to who was in charge in this classroom.” The co-teachers were encouraged “to try one of the other approaches such as station teaching to begin to build greater parity and demonstrate true teacher status for both of them.” When the coach returned a few weeks later, it was noted that “both teachers had a large red apple on the welcome sign on their door.” They were using station teaching as well.

Parity is often noted based on what each of the co-teachers is doing at any given time during an observation. If one teacher is overly passive, coaches may ask a question regarding parity. Another example of sharing roles in the classroom comes from a first grade classroom where the parents/families of many students spoke Spanish. Only one of the co-teachers, Mariana, spoke Spanish fluently. According to the team, “the parents/families were having difficulty viewing Alice as an equal to Mariana. This led parents/families to frequently seek Mariana out and ignore Alice. The co-teachers were very concerned about this.” They worked with the coach on a plan to address it. The co-teachers decided on “ways to reintroduce and familiarize the families with the non-Spanish speaking co-teacher.” For example, “Alice would send home positive notes about the students.” She was “present and pleasant when parents dropped off or picked up their students.” Alice also “made a concerted effort to learn some Spanish.” This did not resolve itself completely as “some parents continued to feel more comfortable in communicating with Mariana as they knew her better.” This team of co-teachers shared their “desire and made the effort to share as many roles as possible.” Both teachers took lead roles during instruction. They used multiple ways of indicating important information such as “highlighting, underlining, or circling words.” They “offered both the English and Spanish word” for a concept they were introducing. The team worked with the dual languages “to share classroom roles of instruction, providing individualized student support, and classroom management.” They used teaming, and it was very clear to the coach that they “both had a role in directing students.”

The following story offers an example of two co-teachers who fully shared their roles throughout the observed lesson. Mr. T and Mr. A shared a fourth grade math group.

They were together five times a week. They had 45 minutes of planning time every week. A thirty minute observation of a typical class began with Mr. T starting the Mad Minute and handing out journals while Mr. A wrote a problem on the board and helped to finish handing out journals. Mr. A was wearing a microphone to accommodate the student in the class with a hearing impairment. Mr. T “stopped the Mad Minute and gave the directions to pass in the papers.” Mr. A “cued some students to follow the direction.” Mr. A “announced the problem of the day which was to show how to make a fraction bar into three times as many pieces. Students were to do this pictorially and write what they had done.”

While students were working, Mr. T and Mr. A “conversed about missing journals.” They checked students' work; both used a red marker. They conferred over the “types of errors and determined necessary adjustments to the lesson.” Mr. A gave directions for switching into groups. Mr. A reviewed homework using a pictorial format and Mr. T worked with the same content in abstract format. “The intensity of the instruction at both stations was evident.”

The notes on the observation tool highlighted the quick, efficient communication between the co-teachers and the easy transition to different approaches.

Recommendations included using additional pre-assessment methods. They were also encouraged to “look at the pace and timing of the parallel groups.” The coach found this team responsive to feedback and wrote – “You are both very in tune with the students and each other! Keep working on this – you are going to be great!”

The roles of co-teachers can be determined by the choice of which co-teaching approach to use. The reciprocity of who takes which role in each approach can be a

demonstration of parity. For example, in one classroom, both co-teachers collect data by “putting post-its inside each child’s file folder” when “behavior required noting” or a particular learning moment occurred that should be “celebrated” or when there was a “learning challenge such as uncertainty about multiplication facts that hampered learning division.” In another classroom, the “pacing of instruction is monitored by both co-teachers” to meet the needs of each student, by “using groups that are flexible and varied.” In these classrooms, it was “difficult to determine who was the general educator or the special educator.” Both teachers were “aware which students needed specially designed instruction.” Both “used the cues and strategies that they had determined to be successful in giving specific students access to the content.”

Teacher to Teacher Interaction

An excellent example of parity that can be seen through teacher to teacher interaction is the story of Rose and Bella. Rose was a veteran teacher who is co-teaching with Bella who was a newer teacher with some special education experience. Rose and Bella were together all day every day of the week. They were in the first grade classroom that Rose had been in “by herself for many years.” The room was “full of things” she had collected over her long career. Both teachers were bilingual and the class had many students who were ELs or identified as needing special education services for challenges both academic and behavioral. The size of the group was 25 students.

This newly paired co-teaching team had attended and actively participated in the professional learning sessions together. When the coach first walked in their room, she noted that she was “immediately struck by evidence of the effort that had been put into the creation of a learning environment conducive to co-teaching.” There was a “focus on

the students' needs versus the focal point of the room being the teacher." There were several tables for group work in the back of the room. Individual student desks were placed in a horseshoe that gave them access to the chalkboard. Several clusters of four desks as well as several pairs of desks were available for small groups or partner work. Each teacher had a desk and the desks were placed right next to the other on the far back side of the room. Colorful thematic bulletin boards displayed a variety of student work. There were notes on the board indicating the schedule for the day. There was a short poem written on the board which was "recited during transition times when grouping for stations for literacy or math." "The students were friendly and had been prompted on how to greet a visitor to their classroom."

Figure 8. Use of physical space prior to coaching

At the round table in the back right side of the room, Rose was with a group of nine students who were working on vocabulary and reading a story. Another group of nine students were working on a writing assignment with Bella at the other table. Another small group of four students were reviewing their work with a third adult (later

determined to be, Charlie, a classroom paraprofessional). Charlie left the room after about 10 minutes and that small group of students continued to work independently and quietly. On the observation tool, the coach noted – “Wow! Everyone is busy and working! The room is a bit noisy but that’s not bothering either teacher or the students. Mostly Spanish is being used by both teachers.” Coaching notes for the team included:

Love what I see so far! I can show you some SFA [Success For All] applause techniques (high five, fireworks). The teachers moved to various points in the room to accommodate the co-teaching approach that they were using. The teachers shared one plan book and jointly developed lessons.

Figure 9. Use of physical space post coaching

During the coaching session, Rose explained to the coach she had learned “the greatest lesson of her career over the past few weeks.”

I was hesitant to have to share my classroom with another teacher. I liked how I had my supplies and things set-up. I liked how I had the desks and furniture arranged. I was worried about how we would get along. But over the past few weeks, as we have worked on the co-teaching approaches together, I have learned the classroom is not mine. It belongs to the children.

A powerful example of a team that struggled with roles and parity has to do with yellow police tape – the kind that is used at crime scenes and says Do Not Cross. Notes from observation and coaching showed a focus on parity in the interactions between the

co-teachers as a result. The general educator was “concerned that in the past students had taken items off her desk and she wanted that behavior to stop.” So she put the tape on the floor around her desk. Given the urban setting of this school, the coach was somewhat “taken aback by this display” when she entered this first grade classroom which seemed “harsh and insensitive since many students had probably witnessed the use of this police tape in their neighborhood for real reasons.” The most unfortunate aspect, however, was when the co-teacher went up to the coach and whispered “I cannot cross the line either.” The coach discussed “the message that tape gave about the other teacher and parity in the eyes of the students.” Happily, it was “removed” the next time they were observed and the co-teachers had “found a better way” to keep students from the teacher’s desk.

Other notes that are directed toward teacher to teacher interactions include the observation that co-teachers were able to interrupt each other as they teach. Coaching often talked about how co-teachers needed “to move from interrupting each other or interjecting into a lesson to a smooth fluid movement between the two co-teachers as they taught a lesson.” As one coach noted “you should be able to bounce off each other.” Look for “ways to be flexible in working together.”

Coaches recognized and pointed out to teams when they observed the team checking and readjusting the teaching plan with each other as the lesson proceeded. This was noted as a highlight when “teachers were very aware of each other and reacted or responded to each other with ease.” If co-teachers decided to change grouping or modify the lesson, it was noted and highlighted for the co-teachers as “a great way to model for the students as a way to collaboratively make a decision.” The co-teachers who had easy and respectful interchanges and interaction were applauded for doing so. For example,

the following transition time discussion was noted. Mrs. A says “Three minute warning. Is that okay with you, Mrs. H?” Mrs. H replies, “How about four?” Mrs. A says “Okay, four minutes ...” This serves as a simple but specific teacher to teacher interaction that illustrates that they share the responsibility for the lesson.

Classroom/Behavior Management

Parity was sometimes demonstrated in how the co-teachers dealt with behavior and classroom management. The following story serves as an example of coaching regarding parity in classroom management and a plan for addressing it. There were two co-teachers in this particular high school English Literature class. Carolyn and Marguerite admitted to the coach that they “were having trouble with students calling out, interrupting each other and the teachers.” They also expressed concern that they were “feeling that they were interrupting each other.” The noise level in their newly configured co-teaching classroom was “not to either of their liking.” In order to assist them, the coach did a simple tally observation to see where the noise was coming from the students. As seen in the diagram below, a mark was made for each student that spoke out.

Figure 10. Tallying student responses

In the notes, the coach pointed out that “initially students were calling out, but they were listening and responding” to the teachers. Later the co-teachers began to “insist that students raise their hands to be called on. Some students did, but less did, and some students disengaged from the conversation.” One student ended up with his “head down on the desk.” The coach made a recommendation to “try to use another co-teaching approach” and the team agreed. They wanted to “try splitting the class into two smaller groups and use station, parallel, or alternative teaching to keep students talking and on task.” They thought this might also “give them a break” from feeling like they were interrupting each other. They decided upon “an acceptable noise level and agreed upon a signal to use if they felt the noise was getting too high.”

Interactions of Co-Teachers with Students

A story that demonstrates the parity of the teachers in their interactions with students comes from a math lesson in a first grade classroom. Students are sitting at two groups of desks. Chelsey and Christine are each working with one group on demonstrating number sentences, using white boards, markers and Unifix blocks. Chelsey, the general educator, is dictating the problems for the students in her group to solve. Each teacher circulated around their group, assisting and providing feedback to students. The instructional aide, Annie, is working one-to-one with one student. Each teacher had the students work in pairs on a problem or talk to their partner about their work. At the end, Christine passed out a worksheet for further practice with basic addition number sentences. Each teacher was able “to pinpoint easily who required further reinforcement” and together they “planned next steps” with this information. Both teachers had a “nice easy style” with the students. The students responded and “actively

interacted with both teachers whenever they wanted specific/individual assistance.” The co-teachers reported to the coach that “being together in the classroom made them feel that their students benefited from the increased and often individualized attention.” When they made sure they had given “clear, accessible directions, their students were able to complete assignments with minimal support.”

Student Perceptions of Having Two Teachers

Student perception of two teachers was another area recognized and coded. This is a story about a co-teaching team and the writing assignment of one of their students. In a first grade classroom with 30 students, two co-teachers were paired together every day, all day. Virginia and Kc were both trained as elementary teachers and had special education degrees as well. The coach noted that “the two teachers had an equal partnership clearly evidenced in interactions, student responses to each, and one plan book, with jointly developed lessons.” Their use of different approaches was based on the lesson objectives and format. When the team was first observed, they used a mix of approaches. This was an exceptionally longer observation with five of the six approaches observed over the course of ninety minutes. The coach’s notes about data collection include:

...record which approach you are using in your plan book or grade book so that they have documentation for co-reflection and self-reflection about preferences, alternatives that might work better next time, or approaches and lessons structures to repeat again.

In a later visit that year, the coach noted that the teachers shared that one of their students, Amber, had written a prize-winning book “Two Teachers Are Better Than One” which was her perspective on co-teaching. It was disseminated city-wide. These teachers had also “written a mini grant to get more songs, chart paper, poems, and other materials

for group oral language development.” The co-teachers reported that “reading achievement had increased dramatically since the start of the year”. They “attributed the increase to their ability to plan and deliver instruction more effectively through co-teaching.”

Parity in General

The development of parity was recognized by coaches however sometimes coaches used very general comments on the observation tool such as ‘Parity was good’ and did not share specifics as to how they determined that. One observation tool had the following note - “Equal teachers?” The coach indicated that she had some questions, but it was unclear as to what action was taken to coach the co-teachers. These non-specific types of comments stand only as impressions, possibly biased ones given their own beliefs, of the generalities of the classroom observed. Coaches were supposed to be non-judgmental observers. Yet such comments given without evidence or offered little guidance toward understanding what occurred in the classroom or in the coaching session.

Range of Co-Teaching Approaches Identified in Initial Observations

The second theme was after training, a wide range of co-teaching approaches were used by teams during their initial observations. Using data from the observation tool, the first observations were sorted by the first approach that had been recorded by the coach. If multiple approaches were noted, they were also recorded. Even though most observations were only 15-20 minutes in length, 45% of the co-teaching teams transitioned between two or more approaches during the observation. Only 6% of the

time coaches did not identify what co-teaching approach was used. In those cases, examination of the notes made by the coaches showed most teams preferred the one teach/one assist approach. See Figure 11 for three specific samples of how the approaches were noted by various coaches.

The figure shows three examples of a form titled "Which 'Approach' used?". Each form has five options: observe, parallel, alternative, assist, and team, each followed by a line for notes. The first form has "assist" checked with a checkmark and "(at beg.)" written next to it, and "parallel" checked with a checkmark. The second form has "assist" checked with a checkmark and "parallel" checked with a checkmark. The third form has "parallel" checked with a checkmark and "(1) with different time tables" written next to it, "assist" checked with a checkmark and "(2) both assist" written next to it, "alternative" checked with a checkmark and "and (2)" written next to it, and "team" checked with a checkmark and "(3) (also before we arrived)" written next to it. There are also handwritten notes "weekly - classes daily" and "weekly - classes daily" on the right side of the third form.

Figure 11. Samples of co-teaching approaches as identified on the CT TAV-OT

The selection of approaches provided the coach with a picture of implementation for a co-teaching team. When done well, as one coach wrote, “there is a seamless blend of co-teaching configurations as the teachers and students move from one activity to the next. There is a joy of learning in this class.”

Co-teaching teams had the liberty to make instructional decisions as to when and which approach to use. As stated earlier, co-teaching teams had been given details on what to do with each approach as well as information such as the advantages and disadvantages of each approach in training sessions. They were provided practice in sessions to plan the use of an approach by considering the content of a lesson and the

needs of the students, particularly those with IEP goals and objectives. Figure 12 shows a chart representing a numerical count of each approach observed.

Figure 12. Number of times a co-teaching approach was observed

One Teach/One Assist

One teach/one assist was observed being used 129 times. As seen in Figure 12, it was the most prominent approach of co-teaching recorded. The coaches were trained to record this approach if they had seen one co-teacher providing instruction to the full group while the other circulated purposefully through the room to provide assistance and support to individual or small groups of students as necessary by answering student questions, redirecting students, or managing instructions and behavior. The coaches noted when the general educator was the lead teacher, while the special educator usually did the assisting.

An example of the one teach/one assist approach comes from the following description of an observation in an eighth grade language arts lesson. The coach's notes indicated that "throughout the lesson each teacher took on the role of teaching and the role of assisting. Their transitions were seamless. Both teachers were comfortable with content and with students." Bethany, the special educator, was "in the hall guiding students into the room, saying hello and connecting on a personal level with each one." Kristy, the general educator "gave students directions to get going on their Do Now quick review of the common prefix –super." She directed students "to take out their homework and pass it up."

Bethany worked on the right side of room assisting students on their "understanding of super as a prefix." Kristy worked on the left side of the room asking students if they knew "what a persona poem was." She began "writing notes on the overhead for all the students to copy into their notebooks." As all students finished the Do Now, Bethany made her way to other side of the room. She "took over at the overhead and provided directions on what students write as they copied the notes showing them where to underline the important points." Kristy "circulated offering suggestions and collecting examples from students."

The recommendation from the coach was to "make sure this was not the only approach" the team used. However, if they were going to use this approach, they had to be focused as they assisted students. "Be prepared with questions, do mini-assessments and look for specific items e.g. punctuation, correct answers." The coach pushed for the co-teacher who was assisting to

...be proactive and not just wait to see what students might need. Have a data collection sheet to make note of things done well and notes of students who may further instruction or intervention. Use the data in planning future lessons.”

The coach also pushed a bit and asked – “Could this have been done as a parallel lesson?

Another example of one teach/one assist comes from a high school Civics class.

Mr. O “demonstrated how to highlight important facts and details using an overhead.” He demonstrated “how to distinguish between fact and opinion.” Mr. C elaborated on the “need to reflect on what the students know as they read to determine Author’s Craft.” He asked some students “what parts of speech were certain words”. Students responded “adjective and adverb”. The coach asked the co-teachers “how intentional grouping might have changed the lesson.” She also asked “how they might have used students’ prior knowledge/questions about the content of the provided article to help students decipher fact from opinion.”

A third example is from a visit to a first grade classroom. The coach observed students as they were eating their morning snack. At 10:45 a.m. students began to assemble on the rug. Eben sat with the large group while Sarah-Anne assisted students in finishing their snack and moving over to the rug area. Together the group recited the poem My 5 Senses. At 10:55 a.m., the students were split into two groups. All students knew where they were to go and moved into a parallel lesson on the sense of taste “Can We Predict?” Each teacher used identical graphs/charts and a process while doing a semantic mapping activity. As they transitioned back to the full group, Eben was counting. This time Sarah-Anne sat with the large group to switch the roles of one teach/one assist. A final activity was being set up at the end of observation, as students went to their desks for independent work on a worksheet. Both teachers coordinated getting children ready to work.

Coaching with this team did not focus only on their use of the one teach/one assist approach. Since their concerns still centered on the “need for more planning time,” they discussed “use of times during the day when students are engaged in activities with other professionals as identified times for planning (upon discussion with the principal).” The coach would check back next visit so “monitoring will continue to determine if additional strategies for co-planning are warranted.”

In the fourth example, the coach captured in the drawing, the use of physical space that lent itself to the co-teaching approach the team had chosen. In Figure 13, the reader can see the use of physical space which looks like rows of desks. The description in the database reads as – “A teacher’s desk is in the front right of the room. Students’ desks are in five rows of six desks in each row.”

Figure 13. – One teach/one assist, teaming, and stations

However, when looking closely at the coaching notes, the teachers had moved between several approaches and had students move desks easily into place for the different portions of the lesson. The space allowed for large and small group instruction. There were desks available for pairs to work together and individual workspaces. Lauren,

the special education teacher, “posted a warm-up activity on board (involving slope/intercepts).” Both teachers circulated, “checking homework and assisting students with the warm-up.” Lauren reviewed correct responses by having students walk through the steps, while Maya, the general educator, “put a visual of slope/intercept on board as a model.” Maya also asked occasional clarification questions to verify student answers.

Lauren began reviewing homework with students while Maya illustrated on a graph on the board. They switched roles for the second half of homework review with the general educator leading this time. Maya split the class into two groups and asked students “to put desks in shape of U.” Lauren got dry erase boards out for both groups. In one group, she worked on more examples of graphing/slope. The other group worked with Maya on substitution as a way of solving equations. Lastly, the teachers switched stations and repeated instruction and practice examples.

The previous four examples of co-teachers and their use of one teach/one assist demonstrates a prime opportunity for coaches for asking questions regarding the chosen co-teaching approach. The coaches probed by asking questions about what had been observed and what potential changes could be made. They may have started simply by asking if the team had used this approach before and what will they use next. This messaged a need to try other approaches. Often questions engaged the co-teachers in discussions such as “Can this activity on letter sounds be done using alternative teaching to engage children whose participation is low?” or “Could we have some discussion on some alternative grouping to get the new ones caught up or closer to the group?”

Teaming

The second most frequently observed approach was teaming. Teaming was recorded 100 times. Coaches recorded teaming when both co-teachers presented during a lesson, generally during whole class instruction. Often coaches noted that its use allowed co-teachers to capitalize on each other's strengths and provided the opportunity for different perspectives on the subject at hand.

Notes on the observation tool from an eighth grade science class captured a successful use of teaming. Ernie, the science teacher, asked students "to look for missing microscope slides and slips." Meanwhile Annie, the special educator, worked with the students who had questions. Using an overhead, Ernie started reviewing homework while Annie added pertinent information on the whiteboard and asked where students saw "any specific patterns of change." When the phone rang, Annie answered it since she was closest to it. One student left the room. Both teachers were moving around the room. Both teachers were talking but Ernie was doing more. Students were asked "to try to use the vocabulary words;" Annie assured them that "eventually they will get them right." It was noted that the co-teachers briefly discussed and decided to readjust the lesson. Ernie told the students - "Today, we are going to do the lesson backward. Please get into your groups before the lecture." Students moved tables into a horseshoe shape. The coach directed Ernie and Annie to "keep track of who they were calling on, as it seemed a bit lopsided." They were "applauded for conferring together rather than one of them just making the decision to deviate from the typical lesson format." It was suggested that they "work on the transition to groups. There was more noise than necessary and students seemed uncertain on how to move the desks."

Many co-teachers used teaming at the start of their lesson. For example, early on in their co-teaching, Gordon, a special educator, and Carol, a Biology teacher, were checking students' homework. Carol explained the plan for the day. Gordon reviewed answers to the homework with Carol 'chiming in' for clarification on some concepts. Gordon emphasized elaboration and specificity on responses. Carol used the board to further illustrate a concept. Both teachers continued the review for an upcoming test. The comments from the coach were specific to moving them to try another approach.

I enjoyed visiting your class and seeing you two work together! Your styles complemented each other which helped to maximize instructional intensity (along with use of stations). Use of an independent station can allow you to group for further intensity and student participation. Considerations would include varying the ways you group students for stations (e.g. random, plus heterogeneous, homogeneous, choice, etc.) and use of alternative for differentiating and meeting students' needs (e.g. remedial, social, enrichment) on a short term basis. Keep up the good work!

In a high school classroom, Figure 14 shows a typical setting with rows of desks. This tended to limit the teachers to either teaming or one teach/one assist. The coach for this team chose not to approach the topic of use of physical space but instead talked about "how the co-teachers might fit the lesson that had been observed with a different co-teaching approach."

Figure 14. A typical high school classroom

In a Health class for high school juniors on a lesson on factors that affect intoxication, true teaming was observed. Maryellen introduced and reviewed for the quiz, while sharing factors, facts, and their intersection. Students were taking notes. Franz “provided real life examples and connections to prior learning.” The teachers reversed who was the lead. Franz organized the groups and once students were ready, Maryellen asked students “to brainstorm ideas.” Maryellen answered the phone. Cody, a paraprofessional, was taking notes for two male students. Both teachers monitored the progress of each group. Classroom management and student rapport were high. Both teachers used positive reinforcement. The coach was positive but also asked “what other teaching strategies could be used to increase student engagement and check for understanding when reviewing for a quiz?” They were asked how they had determined groups. They were encouraged to use any of the cooperative learning structures they had been introduced to - consider inside/outside circle, mix & match, card sort, and numbered Heads Together.

In another example of a good use of teaming, Sheri and Jen were working on World War II in their tenth grade history class. Sheri kicked off the unit with an activity that consisted of two questions written on the board. “What as the worst defeat you've experienced?” and “What emotions did you feel?” Sheri modeled her responses on post-its and collected some students’ answers to the two questions. Jen took over with discussion of “the war and possible accompanying emotions that a country may have experienced.” She assigned parts and asked students to write them on index card table tents as copies of the play Pearl Harbor were passed out. Students went to the front to

begin Scene 1. After reading, Jen asked students questions to check for understanding. Students involved in Scene 2 were called up and read their parts. Jen asked questions to clarify/emphasize key points. This was repeated with Scene 3. This time Sheri posed questions about remaining scenes. Jen wrapped up the lesson and passed out handouts. Students were asked to take a moment to think/reflect before leaving the room. The coach was enthusiastic about the observation. She told the team that she “thoroughly enjoyed visiting the class! The play was a great kick off for the unit on WWII with both co-teachers actively involved”. They discussed “why teaming was the co-teaching approach that fit with the content here.” The team was asked “to consider following this lesson with parallel or stations to reduce the student-teacher ratio and allow for greater instructional intensity.”

At the beginning stage of co-teaching, co-teachers used teaming with an expressed genuine goal to keep both teachers busy. For example, in their third grade classroom, Paula explained the assignment while Donna passed out some markers. The lesson started with a brainstorm of ideas by students for their posters. Paula wrote on chart paper while Donna assisted by asking questions. Donna reviewed directions with some students as they went to their desks or to the table. The coach suggested that:

...given the size of the class (30), using the parallel or alternative approach for the brainstorming portion of the lesson might be more effective in engaging all of the children, meeting the needs of each student, and assessing skill development. The students were behaving but not all were interacting with the teachers/lesson. Two groups with two charts provide greater opportunities for students to participate and give them more of a chance to answer questions or to ask questions. It might also shorten the lesson time. You are a great team and have created a classroom with an atmosphere for learning. Remember one big reason you are co-teaching is to allow for smaller groups for instruction.

Teaming would vary in how it looks as seen in the five previous examples.

Station Teaching

The third approach is station teaching with 83 observations recorded. Coaches recorded station teaching when they observed the co-teachers had divided instructional content and had taught in separate stations around the room. The students were also divided into smaller groups. Each teacher taught their content to one group and subsequently repeated the instruction for the other group. Either the students switched from station to station or alternatively both teachers may have moved.

The drawing in Figure 15 represents a seventh grade classroom as seen in a first observation. Damien, the general educator, and six students were working in a small group at the rectangle table in the back middle of room. At the half circle table on the left side of room, Phillip, the special educator, sat with six students. In the rest of the room, the desks were arranged in a "U" shape with four desks on each side and three desks on the back side toward the right of room. Damien and Phillip directed the seven remaining students to spread out and work independently at their desks or on the floor. The empty desks served as barriers allowing for less distraction.

Figure 15. – Station teaching

Coaches reminded co-teachers that “stations can be similar to centers that are used in many classrooms however; the difference is that at a station there is a teacher to provide instruction which reinforces or extends learning.” Coaches also observed stations that were designed so students gained experience and applied newly mastered skills or concepts to more complex learning tasks. They noted that “each co-teacher led a station that was designed to accommodate a range of learner needs.” Academic tasks were structured that required students to use the target skill regularly in assignments. Coaches recorded that in these smaller groups, “co-teachers provided encouragement, praise and reinforcement for using skills in new settings and situations.”

Independent stations were frequently observed. Coaches noted these stations were “designed for independent learning, peer tutoring, or improving automaticity through review and practice.” Coaches asked “if the content and timing of independent stations was based on students’ ability to work independently.” In one classroom, the coach complimented the co-teachers on how they had “extended the independent station assignments by identifying tasks that the student could do outside of school to practice targeted skills. Sending these assignments home for further work with parents/family was a good idea.”

A second example of station teaching was observed in a sixth grade classroom. One station had an activity about numerators and denominators, done with comparing fraction cards with greater than or less than response cards. Dave clarified the process for comparing and switching to the next envelope with new cards. Students used dry erase markers & wipe off sheets. The other station involved Tad using an easel & dry erase markers with wipe off sheets for comparing fractions while using a number line. The

independent station had students working in pairs at the back table with fact cards and switching to a different activity for reviewing fraction concepts. Students at the independent station started with a timed test which they checked/recorded on their own.

The coach wrote:

This was a great demonstration of station teaching. The intensity of instruction at the two teacher led stations was impressive and helpful with this difficult topic of comparing fractions. The students handled the rotation smoothly and worked pretty independently at the third station on a variety of activities. You may want to split up some of the independent group and have them working at various locations in room versus all at one table to reduce off task chatter.

An observation in a first grade classroom serves as a third example of how station teaching can be used for improving the student-teacher ratio. There were three adults and students were in four groups. The coach felt it “was obvious that the teachers had spent time preparing for station teaching to occur.” Michael, the general educator, was at a table with four students and also went to the rug area to talk to those students working independently. Marianne, the special educator had two students and used a sound activity. She used a notebook, flash cards, white board, and finger touching cues. Julia, the paraprofessional, was reading a small book to a group. Marianne “massaged the hands of one student and had her find a squishy ball to hold onto.”

The coach noted there was “evidence of an attempt to provide of differentiation of activities” within the independent stations which consisted of multiple little groups. There were: two students in a chair while they read a book; two girls worked on an envelope activity; three students were reading a book together; one boy sat by himself and read alone; one girl was at a desk working alone. The coach spoke with the team about “the difficulty that some students were having in the independent station with staying on task, a typical concern with independent stations at this grade level and at this point in the

year.” Students were trying to work independently, but the noise was getting progressively louder despite Marianne’s attempt to quiet them down. The coach recommended “finding more engaging tasks” for independent students. Michael and Marianne discussed the possibility of “providing a break in the time with new instructions for remainder of time.” A timer is used for the students to keep track of time so they can manage the two separate tasks. They also decided to “post directions and work samples” to help students know what they were supposed to do. The co-teachers were also working on “transitions to decrease the time it took for the students to switch stations.”

Grouping for stations was an important consideration during observations. As seen in Figure 16, the coach recorded what was on the white board for students to know where they were to be and what they would be working on. The students started at one station and then moved to a second station when time was announced to do so. The students were regrouped for the third part of the stations on the next day after the co-teachers had had time to discuss how to support students. All students had time at each of the three stations, but students also had repeated time at the station where they required additional support.

Figure 16. Stations assignment on the board

In the fourth example of station teaching, Nicole and Bianca wanted to sequence the rotation of students through the stations so that Nicole worked with the group from the independent station after they had completed their assignment to: “(a) review their responses, (b) present them with additional challenging work, and (c) have them apply skills and concepts to new situations.” Sequence can be a challenge with stations but with help from the coach, the co-teachers settled on having the group of students who would benefit from pre-teaching be in the first rotation with Nicole and in the second rotation be with Bianca.

The fifth and final example of station teaching involves the use of physical space. In their chemistry class, Terry and Nitza worked around the furniture to move students into groups that were matched to the instructional activity. The notes entered into the database said “Six triangle lab tables (three on the left and three on the right)” but in Figure 17, the coach noted there was movement of both teachers and students.

Figure 17. Science lab tables

The coach assisted this team in their use of stations. One group did the “lab/experiment with Terry, the chemistry teacher.” A second group was with “Nitza, the special educator, and worked on lab report writing.” They planned “for the first group with Nitza to either use a previous lab or be a group that had mastered lab report writing. The students in this group critique a lab report to find errors and suggest ways to make it present or read better.” The third group would be “given various pieces of lab equipment that they need to identify, label, and define its use as a way to increase science vocabulary.” Coaching provided a way of looking at what the co-teachers were doing with stations by adding another lens for greater application.

The use of station teaching in all five of these examples was typically celebrated by the coaches. The time and effort in establishing stations allowed for more specially designed instruction as well as small groups and lowered student-teacher ratio. The coaches were able to help teams increase the effectiveness by assisting teams “to look at differentiating the independent station and find ways for keeping records on what students had accomplished in them.” How students were grouped was a frequent topic for coaching. Teams were asked “to consider if there was a way to organize the groups differently to encourage peer support and foster greater independence.” They discussed

how student grouping can impact decisions as to where the group starts, particularly those students in the independent group for the first rotation.

Parallel Teaching

The fourth approach, counted 80 times, was parallel teaching. Coaches observed in settings where the co-teachers had split the class into two groups thus reducing the student-teacher ratio, and better accommodating learner needs. Coaches encouraged the use of smaller groups to allow for greater levels of progress monitoring. In the smaller groups, co-teachers were able to provide instruction that involved more discussion, directed practice, and scaffolding. Co-teachers structured academic tasks that allowed for regular targeted skill use. They offered encouragement, praise and reinforcement to students who used these skills in new settings or situations.

The first example of parallel teaching comes from a second grade classroom as depicted in Figure 18 that includes placement of the teachers' desks. One desk was in the front left corner of the room and the other desk was in the back right corner of the room. The half circle table was toward the middle of the left wall in the back. Students' desks are arranged in a large rectangle in the middle of the room with space between each desk. Three or four desks were along the front and back and four to six desks were along each side with two desks in the middle of the rectangle. The coach noted that Kayla and Aria had decided "to use the approaches that would allow for small groups as appropriate." Desks were readily movable into groups of four, all students had access to both co-

teachers, and the flexibility to switch between approaches was there.

Figure 18. – Parallel teaching

Kayla worked with a group of ten students clustered at desks in front of the white board. They were “reviewing place value with a grid and then filling in another grid with 100 less, 10, less, 1 less and repeating 100 more.” When given a target number, students wrote answers when asked to change the number to 100 more, 10 less, etc. Some students worked independently at their desks. Aria, the special educator worked with a slightly smaller group of nine students at the back table. She was modeling three digit numbers with manipulatives using the same concept of 100 more/less, 10 more/less, and 1 more/less in a group practice activity. Aria had students come up to the number chart and use a ‘prediction window’ to apply the concept.

The coach told Kayla and Aria that they had “done a great lesson using parallel teaching. It was a good match for such a complex concept. By splitting into the two groups you reduced group size and improved the student-teacher ratio.” In the coaching session, they discussed “how the students had been grouped based on pre-assessment done in the previous day’s lesson.” This had allowed them to “select materials” accordingly (e.g. manipulatives, number charts, or the grid to be completed). The coach asked the co-teaching team “to consider the use of small white boards or paper to provide

additional opportunities for practice for the group at side table instead of just taking their turn at the easel.” A recommendation was made to the team to use the alternative approach as a follow-up to this lesson. It could prove to be helpful with students needing additional support or re-teaching.

A second example of parallel teaching comes from a seventh grade classroom. The lesson objective that was posted read “Analyze different literary elements of poetry during/after review activities (stanzas, similes, metaphors, imagery, and personification).” Co-teachers, Marilyn and Shirley, each worked with a group of students. Marilyn, the special educator, read the poem to her group. Shirley, the general educator, asked “for a volunteer to read the poem” to her group. Students highlighted words to help with analysis of poem. In both groups, students volunteered and responded to teacher questions. The coach commented on “such a good atmosphere in the room where both adults were clearly seen as teachers.” They signaled to each other when their groups had finished the activity. A suggestion was made “to help students who are reluctant to speak/volunteer by having them work in pairs/small groups first.”

A third example of parallel teaching comes from a fifth grade language arts class observation. After a brief use of teaming, Steve and Beth had their students move into two groups. Steve reviewed the story from yesterday by writing onto the board facts given to him from the students. Beth drew a picture first and then asked her group for details. She demonstrated how the use of post it notes might help them sort ideas as to sequence of events. All students were completely engaged in both groups. The coach suggested they “get the student teacher who was present into a more active role and

involved as soon as possible.” She also suggested that they “post the strategies they are emphasizing with students so the students can refer to them later.”

A fourth example comes from a geometry class where co-teachers Chad and Luke were facilitating a Mix and Match of complementary and supplementary angles. They then used the results to sort students into groups. In parallel groups, they reviewed homework. Asking questions like “What does adjacent mean?” they reviewed correct responses from homework and asked students “to star any of their incorrect responses for future discussion.” Both teachers provided individual clarification at times for students. Luke was using the white board, Chad was lecturing. They discussed characteristics of linear pairs and checked for understanding. Both Chad and Luke provided guided practice with protractors to measure angles. They monitored independent practice and again checked for individual understanding. Homework was given “Look for linear pairs, and for those who think they can find vertical angles, please try to do so.”

The coach wrote that she “was excited about such a successful parallel lesson.” She made a small suggestion to the team that they “use a small portable white board to demonstrate/model examples in the smaller group instead of just lecture.” The coach also asked the team “to consider what strategies they might use to reinforce on-task behavior.” Given the high level of understanding of this team, she also pushed them to think of “how they might have used outcomes of homework to transition into station teaching” (e.g. linear parts, vertex angles, and review of definitions via card sort activity for independent group). Getting the team to consider the various ways a lesson fitted with a different approach was dependent on the data they collected from assessments and homework.

Observation of parallel teaching prompted a number of coaching recommendations. Some were connected to the pace of the lesson ranging from excellent – “as if mirror images” - to cautioning against “early release of one group before the other is ready.” Co-teachers were asked if they had made sure they were “targeting the same information and that the level of conversation in the groups was the same,” in other words, were they certain that the content covered in each group was “equitable.” Seeing that student engagement was very high in the small groups, the co-teaching team was asked “to consider skipping the full group introduction, where engagement was not high, and go directly to the parallel groups.” Each group started with the introduction.

Alternative Teaching

The fifth approach was alternative teaching, which was observed 54 times. Co-teachers used this format so an identified group of students received small group instruction planned to effectively address the range of student readiness levels. Coaches noticed and recorded when instruction was “specifically targeted to enrich, extend, or reteach skills and concepts.” Co-teachers were observed presenting new material in different ways to accommodate learning styles and individualize instruction. In the alternative group, co-teachers helped students “to articulate the big ideas or core elements of targeted skills” so that the students practiced the skill with modest modifications when faced with new tasks or novel situations. For example, the big idea of ‘part in relation to whole’ was taught in lessons on fractions, ratios, or percentages. Again, greater individual opportunities existed for corrective feedback, praise, and reinforcement. Co-teachers were seen using alternative groups to encourage student goal setting.

Figure 19. – Alternative teaching

Figure 19 provides an example of a first grade classroom that was a very large room with multiple work areas. This amount of space allowed for a flow of activities using a variety of different approaches. At their initial observation, co-teachers Kim and Maggie, used alternative teaching and a small amount of one teach/one assist. In the left back corner there was an easel with a group of 18 students and Kim, the general educator. One student, with severe disabilities in a wheelchair, was removed from the room after making loud noises. Two adults went with her. Maggie, the special educator, moved to the magnetic board as students moved to their tables to be able to do their seat work with scissors. There were rectangle tables on the right side of the room (two in the front and two behind those). In the front left of the room there was another rectangle table with students and another adult. Next to that was yet another rectangle table facing in the opposite direction. Computers were along the middle of the right wall. After working for a while, Kim clapped two times and gave a warning about finishing. Students came back together as a large group to discuss what they had done. Kim led the class asking them “to work with the person next to them, their buddy.” They were asked to “only use the pink cards and look at coins to see if they are pennies.” Kim asked the students “how she

should count, by ones or by fives,” while Maggie just watched. The coach explained to the team how alternative teaching “made better use of both co-teachers” than the use of one teach/one assist. “Used as a transition activity, one teach/one assist worked fine but overuse or reliance on it did not make the best use of all adults in the room.” Coaching focused on “why they moved to a full group rather than staying in alternative.”

In the second example Jennifer, the general educator, had a large group of fourth graders working on a multiplication sheet (expand and stack). Deborah, the special educator, had three students using manipulatives as they worked. Jennifer was able to move around her group and helped those students with hands raised as time allowed for individual student attention. Students were able to go to pencil sharpener when desired. The students with Deborah were being given individualized instruction. She used graph paper when one student was ready. At one point, Jennifer came to the table to check in with Deborah, who said “Obama has it.” Jennifer took Obama and brought him back to full group and gave him some one to one time. Noise level in the large group began to increase.

The coach remarked to this co-teaching team that “they were using the alternative approach quite well.” She checked with the team that they “made sure the members of the alternative group varied and that Jennifer also took the smaller group at times.” They were reminded of the “cooperative learning structures and strategies (e.g. verbalize, visual cues) to use,” and also reminded “to be explicit with students as to why you were use a strategy.” The team was nudged to remember that “the needs of children should be driving what the co-teachers are choosing for an approach.” The coach encouraged them

to try to get some “fixed planning time so they could continue to build their great partnership.”

A third example used to demonstrate alternative teaching was an observation in a third grade classroom that began while students were transitioning to groups. Once settled, Gerald, the special educator, was with the larger group of students doing pictographs on the overhead. Monique, the general educator, was with a small group of students at a table who were also doing pictographs. Gerald told the group they can use “half a person which means five.” He asked students to practice, after he had the full group read the graph. He asked individuals to answer specific questions. Monique had one student who kept looking at the overhead of other group. The smaller group seemed to be moving through the questions on the paper. Monique started talking about a number line. Meanwhile, the students in the large group debated “whether 145 or 155 was the closest number.” Gerald used the opportunity to remind the group about “rounding” and moved to “estimating” for the answer. Monique’s group was working quietly – using the same worksheet as the large group but worked through it in a different order. At this point they were counting it themselves. Another student entered the room and joined the group at the small table. The coach supported the team “to continue the differentiation they were doing with grouping and materials used. They were doing what alternative teaching specifically allows for, providing more explicit instruction for those who need it.”

A fourth example of alternative teaching comes from an observation in a fifth grade classroom. Joy, the special educator, began the class with a review of what students had learned about fractions with Pat, the paraprofessional, helping some students.

Meanwhile, Brian, the general educator, worked with an alternative group on fractional parts and remained with this group during the entire observation. Joy reviewed addition/subtraction with the large group using problems requiring common denominators. Time was spent looking at the simplification of fractions, using a number chart and division by the greatest common denominator. Joy then split her group and took five students back for work with the SMART Board focusing on adding fractions with like denominators. Pat moved to sit at a table with the other five students who worked on a page from the book focusing on equivalent fractions while doubling a recipe. She assigned an activity for the group to complete in pairs. The coach was:

...pleased to see that alternative teaching was being used with teaching roles being shared. It also demonstrated good use of a paraprofessional. The lesson ran smoothly with all students fully engaged in tasks given the variety of activities. All adults had great rapport with all the students as well as with each other.

Teams would be reminded that alternative teaching can be challenging given the potential noise level. There is also the question of what will students miss being covered in the large group if they are in the small group. The five examples show how those potential barriers to implementation can be addressed.

One Teach/One Observe

One teach/one observe was the sixth approach and was noted 23 times on the observation tool. Typically coaches recorded this approach had occurred when they had seen that one co-teacher taught or modeled a targeted concept or skill and the other co-teacher was observing students. Coaches reminded teams that the observing teacher is to be watching carefully for student understanding of the identified concept or skill for formative assessment purposes to ensure that proficiency was achieved. Coaches noted

that one teach/one observe was used mostly during whole class instruction but on occasion when students worked in small groups.

The first example is from an observation in a fourth grade classroom. While Rosemary, the general educator, reviewed the homework assignment, Sarah, the special educator, observed the students. Sarah watched the full group and noted who was answering questions correctly. The class went to work on a pattern lesson with Halloween figures. Rosemary taught the entire lesson. Sarah remained in the back of the room. She walked back and forth behind the last row of children. The coach noted “it was uncertain as to what or who she was specifically observing, monitoring behavior, or just trying to keep busy.” The coach spent time trying to clarify the need for observation, timing of this observation, and suggested data collection methods. The team was made aware that “attempts to diversify their use of the co-teaching approaches would enhance whole group, reading group and center instruction. Use of varied approaches would assure maximal learning opportunities for all children in this grade level configuration.”

A second example comes from a Kindergarten class, where Homer, the general educator, led the morning meeting opening/routine. The other co-teacher, Doris, was a speech and language therapist who observed and made notes on post-its which went inside a folder for each child. They switched roles during the pre-reading lesson. The team shared with the coach that they did this for a monthly review. They were applauded for “taking turns with the observing and their data collection process.”

These two examples show how the one teach/one observe approach has its place in the co-taught classroom. Coaches investigated if teams using this approach were focused on the students, not observing the other teacher or watching the class as it

proceeded. Notes regarding questions from the coach involved how the co-teachers were collecting data and how they shared data with students. One coach suggested that “data shared with students could be useful in students addressing their own accountability and creation of personal learning goals.”

Other/Combination

With all the observations and the identification of the six specific key co-teaching approaches, there remained a number of observations that called for the addition of another category. This was called ‘other/combination’ as teams had created their own variations of the six approaches. They blended, adapted, configured or reconfigured approaches to suit their needs and the needs of their students. The other/combination approach was observed and recorded 21 times.

Parallel/independent station split

The first example is one that was a merging of parallel and station teaching. At the start of a fourth grade math lesson, Matt, the general educator, split the class into three groups. Justina, the special educator, worked with seven students at a table, reviewing the steps in division using white boards. As students encountered difficulty, Justina provided one-to-one assistance and/or feedback to the group of students at her table. This group stayed together the entire time. Meanwhile, Matt reviewed a division problem on the board with one group of seven students and then sat on the floor with them. Students reviewed problems they had completed previously, looked for mistakes, and circled the errors once they found them. The rest of the class worked on a division worksheet involving word problems sitting at desks scattered around the room. Matt switched his group to work independently on the worksheet of division problems. Then

he worked with the other group, reviewing and correcting division problems from their independent work.

The coach found this combination of parallel and station teaching “very effective in reducing the student-teacher ratio and increasing instructional intensity.” Having students find errors in each other’s work was “determined to be a good activity to build student knowledge and application of division. Students handled the transition well and seemed to benefit from the small group instruction.” The team was prompted to “continue trying the various approaches to see which ones work best for which content.”

Two assist

A version of the teaming co-teaching approach was one that was named two assist. This occurred when both co-teachers worked their way around assisting students, typically when the students were doing independent tasks. Two assist was observed in a variety of classrooms. Coaches noted that at times, two assist “served a purpose well” and at other times it appeared to be co-teachers “simply co-existing.” For example in a ninth grade social studies class, Adam and Tyrell used two assist after a large group lesson when students were given work to do independently. Both co-teachers roamed the room, checking and giving individual feedback as students worked. The coach worked with this team to see “if they had determined any commonalities of student needs as they moved from group to group.” The coach had only heard Adam or Tyrell offer generic feedback to students such as ‘good’ or ‘good job.’ The coach also pushed them “to see if they had determined which students might have benefited from additional scaffolding or if they might have used another approach to support this lesson.”

As another example is the room set-up of a high school World Literature classroom that can be seen in Figure 20. Student desks were placed in two large horseshoes one within the other. Some students were sitting in pairs, some individually. The teacher's desk was over on the far side of room. One corner of the room was a reading corner used by the students to lounge and read. The set-up of this room created a physical space that accommodated what the co-teaching needs to be and allowed for both teachers to work their way around the class, assisting students as they go. The coach noted that Wendy, the special educator, and Ingrid, the general educator:

...worked as a team. They connected with each other's' comments easily; they both knew the lesson format and the content for instruction. They moved to the two assist approach when students were working independently.

Figure 20. – Two assist

Another example of two assist was in a first grade classroom working on a math lesson on making trapezoids. They transitioned to carpet by an assigned table shape to sit in three rows on the carpet. Maddie, the Title I Math coach, introduced the lesson by giving directions to the whole class. A rule was identified – “the whole side of triangle must be touching.” Carol, the general educator, dispensed pencils to students. Maddie had one student demonstrate the use of three triangles to make a trapezoid. Carol picked up

on the directions and emphasized the clue or rule while Maddie provided crowd control with the 20 students. Carol dismissed groups to tables to work in partners to share materials and construct shapes. Both teachers moved around respective tables assisting students. At one point, Carol called for group attention and gave the closing directions. Students went back to the carpet with their partners. Maddie recapped what happened at the tables. She asked students “if they found different shapes.” Students were given sharing time. They compared with partner papers. The coach noted that the co-teachers:

...were very aware of each other and reacted/responded with ease. Both teachers had decision-making rights and children appeared to respect them equally. The room was fun - both co-teachers worked together to empower students and make them feel special. Set some time each week to discuss/reflect upon the co-teaching experience. This is important because lesson planning and execution also incorporate decisions about co-teaching models. It was very clear that Carol and Maddie were a great team and the reflection process would help them continue to grow.

Two stations and a double time independent station

A different way to use the independent station is seen in the example of a tenth grade geometry class that in a lesson on parallel lines and angles of polygons. Roberto and Miguel were the co-teachers. They used stations but the independent station stayed together throughout the entire time. The teachers switched between the other two groups, with Roberto teaching parallel lines and Miguel teaching polygon angles. The coach commented on highlights such as “essential questions posted on the board, good pacing, smaller groups and low noise level.” The team and coach discussed “how much instruction students in the independent station had received.” Suggestions were made for next steps. One idea was to have:

...one co-teacher work with the independent group to (a) review their responses on the assignment; (b) present them with additional challenging work; and (c) have students apply skills and concepts to new situations.

Another was to have “all students pulled back into one group after station rounds were completed to share out what they had learned.” A third suggestion was for the co-teachers “to try traditional stations, with groups experiencing all three stations to allow all students to develop independent work skills. Finally, it was suggested that the co-teachers “use alternative and parallel approaches as other ways to lower student-teacher ratios.”

Using centers for future independent stations

Another variation was used by the co-teachers, Cortney and Sydney, who started their Kindergarten class with a Morning Meeting for Math. Next they moved students to work at centers as practice for future working in independent stations. There was a Center Board with student photos and names so they could begin to recognize their name. The coach noted that “it took about one minute for the students to transition to their centers – excellent! The room was set-up beautifully. It was colorful and purposeful with plenty of student work displayed.” The centers (future independent stations) included: writing; making flip books; letter L activities; rainbow writing; math worksheet; pattern blocks; computers; art activity with a lion; and letter books. The paraprofessional in the room, Missy, moved herself into position to be near students who would likely seek help. The coach requested the team “to allow videotaping, especially the transition to centers to capture how smoothly it worked.” The coach asked them “to be sure that Missy be trained to do formal observations as she had a good handle on which students needed help.” If she were able to provide the co-teachers with written documentation of student success, it may assist in future grouping of students. The transitioning to teacher led

stations “could be gradual” moving first to just one teacher station and then two teacher stations “once students showed ability to work independently.” The team “should continue to reinforce students needing to stay in a station.” As time progresses, the coach assured Sydney and Cortney that “they will be better able to judge the amount of time it will take to do a task as that can be tricky. They will need to work on sponge activities, or those activities students can do when they are done with a station.”

Another example of assisting with centers used as independent stations took place in a fourth grade classroom during a math lesson. Sean and Griffin teamed to give directions for each station which were also listed on the flipchart with heterogeneous grouping assignments including partners for some students. At the chime, students moved to their first station and began working. Center activities were designed to review multiplication facts and single digit computations with multiplication. They were named: “(a) Shopping Spree, (b) Circles and Dots, (c) Three in a Row, and (d) Word Problems at Your Seat.” Sean and Griffin circled around the room, providing assistance where needed and helping groups get started after switching. The coach felt it was “a very organized lesson for reviewing/applying multiplication skills with teaming and two assist evident.” The coach discussed with Sean and Bill that in order to call this station teaching, “they would each need to remain at a station and provide instruction to students during the rotation in order to increase instructional intensity.” They could decide to have “one or two independent stations” going on simultaneously. The coach felt that “given how smoothly this lesson went it should be easy to implement the stations approach. Their set-up and management of the class would support station teaching.”

Alternative/cooperative learning groups

This combination occurred in an eighth grade classroom; Greg and Butch were attempting to use alternative teaching. Unfortunately a breakdown in the communication between the co-teachers was observed. The group had been split. One group was working with Greg; the remaining students were with Butch. He placed the students into cooperative learning groups. These small interactive groups were working on reading an article and discussing answers to questions posed by Butch. Unfortunately, “some students were reprimanded for speaking to each other by Greg when Butch was on the other side of the room.” This was “contradictory” to what the group had been told by Butch. The coach pointed out this conflict to the team, and facilitated a conversation with them about “noise in the classroom.” She suggested “placing children in more defined areas so that there was less interference with the alternative lesson being conducted and so that cooperative groups had the opportunity to work together effectively.”

Parallel/station/alternative

This triple combination was used during a mixed third and fourth grade language arts lesson. After reading to the full class Justine, the Literacy coach, took five students to work on letter/sound correspondence (alternative teaching.) Farrah, the general educator, took 10 students to read aloud with her. With a parallel group, Brody, the special educator, took two students to a back table to work on the same story. There were three girls at a separate table doing work at an independent station. This appeared to accommodate the different leveled reading groups in the room as co-teachers shared that the “students were third and fourth graders but most did not even know their letters.”

Teaming/parallel/assist

Another combination was created in this example when Holly and Theresa were teaching a sixth grade math class. The lesson started with both teachers reviewing concepts at the board with index cards/definitions: “possible, probable, probability, outcomes/results, equally likely, and experimental probability.” Holly, the general educator, introduced a new term “trial with definition” and gave examples. She asked students for additional examples. Theresa directed students to move to one of two parallel groups to complete a trial experiment. Holly’s group worked with books and a chart in order to make a prediction. They ran trial tests with their partner to test their predictions. Theresa introduced a similar activity with her group, at the front of the room, with students clustered at desks. Both teachers circulated among their pairs offering help. Results were posted on flip chart for one group, while the other group quickly discussed results. Holly closed the lesson saying “they would compare each group’s results the next day.” The coach noted the team “used teaming well to transition the class to a parallel lesson.” This was a “good selection of an approach given the hands-on nature of the lesson (conducting trial experiments)” and allowed both teachers to work with and supervise smaller groups of students. They discussed “spacing of the students by having students clustered a little closer together so that it might make it easier to get to all the pairs and reduce noise level when students were calling out for teacher assistance.”

When these variations and combinations were used at the beginning of their co-teaching experience, coaches would make sure the choices were deliberate not based on misunderstanding of one of the approaches. Some teams needed that clarification while some teams were immediately able to adapt as they recognized the need to do so.

Coaches reminded the teams that” co-teaching is not meant to be random; it is supposed to be purposeful and specifically designed to meet the needs of the students in the classroom.”

Unidentified Co-Teaching

In 20 observations, there was no specific approach identified. Additionally, it is not apparent from the coaches’ notes if any co-teaching was going on. After these observations, coaches reminded the teams that “in any given lesson, more than one co-teaching approach may be used and they can be blended together, but there needs to be some resemblance to an approach as consideration to the purpose of the lesson and the resulting grouping of students.” Both co-teachers should be “fully involved in the instructional process as they consider the lesson plan and objectives, as to which approach to use, as different approaches better lend themselves to mastering specific objectives.” For example, if the co-teachers chose to differentiate instruction, they may have selected stations, or if they had varied assessment options, they may have picked alternative teaching or parallel teaching. Co-teachers were told “to consider types of grouping or environmental changes that supported an activity, such as rearranging classroom furniture when the students were doing independent or small group work.” Co-teaching teams were also coached “to consider the types of assessments to be used and which approach was most conducive to that assessment.”

The 329 observations in this study identified use of at least one of six specific approaches, or one in the other/combination category, or unidentified. This focus on the approaches provided direction for the coaching that followed. The questions used during

coaching and specificity of recommendations made by coaches were often recorded in the highlights or recommendations sections of the observation tool and reviewed.

Co-Teaching Changes after Coaching

The third theme that emerged was after coaching, co-teaching changed in a positive direction. The evidence for this was found in the notes recorded by coaches during observations in the classrooms and follow-up coaching sessions for research question #1 is the use of co-teaching approaches. During the second observation, coaches identified usage of more co-teaching approaches that allowed for more intensive instruction. Coaches had mentioned use of approaches to 87% of co-teaching teams on the first observation. Teams were asked “to vary the approaches” they used. Notes make reference to other approaches with particular emphasis on “the use of station, parallel, and alternative teaching” as these can provide more opportunity to intensify or individualize instruction. Six patterns of co-teaching approaches used after coaching are identified and data provided for number of times each of the patterns were observed. Additionally how questioning was used as a strategy for coaches, grouping as a means to drive the use of approaches, and coaching recommendations are areas addressed.

Some drawings from the observation tool may show influence of coaching on the room set-up which can make the use of some co-teaching approaches easier. Figure 21 represents the first observation of a first grade classroom. It shows a room where the teachers had used the physical space of the classroom and had students sitting at desks that were in rows.

Figure 21. Rows in an elementary classroom

Figure 22 depicts the classroom at the second observation and shows that the team had established five distinct centers/stations to allow for smaller groups to work with each co-teacher as they supported a different level of need. Station teaching was also used as an opportunity for independent practice. The coaching notes indicate that “even with five simultaneous activities going on, there was a very appropriate noise level in the room.”

Figure 22. Small groups in an elementary classroom

Another example of coaching notes to a team that was only using teaming is “Your lesson could begin with full group instruction using teaming and then move to parallel teaching for guided practice or independent practice.” For a team that seemed

stuck in using one teach/one assist: “I see you used one teach/one assist for the delivery of new information. Was there a reason for that? Deborah, are you not feeling confident in the content?” The coach went on to attempt to show the team how the new information could have easily been presented in parallel groups. For another classroom, the coach’s notes were:

Remember, the one teach/one assist approach should be used sparingly, reserve its use for those unplanned co-teaching moments, transition times, and when behavior management situations arise. For example when Sonny arrives late to class and needs directions regarding the work versus needing to interrupt the entire class to bring him up to speed.

The following story is a specific example of a fifth grade team consisting of two co-teachers and a librarian who spent time with a coach and planned for their use of the approaches within the context of their unit on position papers. The observation that day had taken place in the library. Erica, the librarian, introduced students to the task of doing research on their topic. They were told “to write notes down as they worked on collecting research.” Elizabeth, the special educator, worked with two students to give them specific directions about the task. She went with them to find resources and assisted them in finding their research. Elisha monitored the other students who were spread around library as they worked. The coach gave them specific examples for future lessons on position papers that used other co-teaching approaches.

Station teaching - different stations can be established for the different aspects of a position paper such as: main points, supporting facts, and doing research. Alternative teaching – as enrichment of the advanced group, pull those students together and ask some to read their paper and explain why they chose the wording or phrasing and receive peer feedback. Parallel teaching – Two groups simultaneously present their position papers, while each group captures what they learned about position papers and from each other’s topics. Teaming - Read position papers to whole class from two different perspectives to use as models. Or one teacher can read a position paper, such as a feature article, with pauses so

the second teacher can add commentary about the elements of the paper as they are being read.

This coach also discussed “various warm-up activities to increase student engagement and individualize or specially design instruction.” For example,

“State a topic and ask students to make a statement they believe related to that topic. Prepare some students by giving them the topic in advance. Ask questions such as: Why is it important for someone to read about this topic? And collect their answers – enjoyment, move to action, learn and use information, or other.”

Patterns of Approaches

One of the constants of coaching after an observation was to suggest that certain approaches can have greater impact on instruction for students. For the purposes of this study, three approaches were determined to provide greater opportunity to reduce the student-teacher ratio, ostensibly “increasing the extent to which instruction is tailored to meet individual student needs” (Friend et al., 2010, p. 19). They are station, parallel, and alternative teaching. Coaches were trained to encourage co-teaching teams to use the three approaches.

Analyzing the observations used, six patterns were identified for how approaches were observed. The first three patterns show no discernible movement toward greater use of the approaches that intensify instruction. When observed a second time, there was no change in the approaches used, or there was seemingly backward movement in the approaches chosen. The question remains as to whether coaching was influential on the choice of approaches used. Some caution needs to be added to this assumption in that co-teaching teams were taught and prompted to use all six approaches when the situation called for it, and so if the observation was at a time when it was appropriate to use a particular approach, there may have actually been progress made in the discretion of the

teams to use the approaches. Therefore a co-teaching team is not to be judged as ineffective if they only used one teach/one assist, one teach/one observe, or teaming.

Figure 23. Patterns of co-teaching approaches used after coaching

The first three patterns are shown in Figure 23. Pattern 1 occurred when a co-teaching team used one teach/one assist, one teach/one observe, or teaming. After coaching, the team still only used one teach/one assist, one teach/one observe, or teaming. These three approaches were readily implemented yet they do not change the intensity of instruction or reduce the student-teacher ratio.

Pattern 2 was identified as the use of any of the approaches and in the second observation, returned to Pattern 1 and only one teach/one assist, one teach/one observe, or teaming were observed. This was seen as ‘backward’ movement on the team’s part to use

only the three approaches that do not change the intensity of instruction or reduce the student-teacher ratio.

Pattern 3 was seen when co-teaching teams used alternative teaching, parallel teaching, or station teaching, but after coaching returned to Pattern 1. This suggested that the co-teachers were not working with smaller groups and not taking advantage of opportunity to intensify or differentiate instruction that could meet individual student needs.

Three other patterns were identified and they have been labeled ‘preferred’ as they showed movement toward a lower student-teacher ratio and the possibility of more intensive instruction. They are listed as Pattern 4, Pattern 5, and Pattern 6 as seen in Figure 24.

Pattern 4 shows movement from one teach/one assist, one teach/one observe, or teaming to either a mix of all six approaches or just station teaching, alternative teaching, or parallel teaching.

An example of Pattern 4 is an observation from a high school Level 2 Environmental Science class. Ned and Cole used a version of a teaming/two assist approach. Both teachers were conscious of their roles appearing equal to the students to establish parity and rapport with students with only slightly more content delivery from Cole as the science teacher. When the coach returned, Cole and Ned had shifted into using stations as suggested by the coach. The tasks were described, modeled and differentiated for the students through teaming and then they moved into stations. The coach asked about “the use of random selection for grouping to clarify the benefits of stations for differentiation.”

Figure 24. Preferred patterns of co-teaching approaches used after coaching

Cole and Ned were encouraged “to keep smaller instructional groups and to be certain that students in the independent groups were getting their needs met by looking at the quantity and quality of their work.”

Pattern 5 was identified as the use of a mix of any of the six approaches and in the second observation the same mix or the co-teachers used station teaching, alternative teaching, or parallel teaching approaches.

Pattern 6 was seen when co-teaching teams used station teaching, alternative teaching, or parallel teaching and stayed with those three approaches or shifted to a mix of all six approaches. Notes on these teams generally identified the teams as high-functioning.

Figure 25. Pattern of approaches

In the graph in Figure 25, greater numbers of observations were in Patterns 4, 5, and 6. This shows approaches allowing for lower student-teacher ratio and more intensive instruction were used either in their original form or in a modified or combined form. Data shows that 90% of the co-teaching teams that had been observed and coached into doing so had tried a different approach for the second observation. The move from an approach that does not lower student-teacher ratio or provide opportunity for more intensive instruction such as one teach/one assist, one teach/one observe, and teaming to one with greater capacity for intensified instruction such as station teaching, parallel teaching, and alternative teaching was evident slightly more than half the time.

Questioning by Coaches

Observation notes help to discover the story behind these patterns to some measure. Coaches recorded on the observation tool numerous questions that were asked of co-teaching teams regarding choice of approaches. Addressing the area of approaches

was frequently connected to the co-teaching team's ability to be flexible and responsive to the needs of the students. Often the message to the co-teachers was an emphasis on their collective responsibility to adjust as the lesson was progressing as they saw how their students were doing. Co-teaching teams were assured that an instinctual and fluid use of when and how to use all the approaches is acquired through practice and becomes essential to the implementation of co-teaching. Co-teachers had to communicate and collaborate as they planned for, instructed and assessed their students. They also had to be reflective as to what they were doing singularly and as a team to make learning accessible to all their students.

As an example of questioning by a coach is an observation from a tenth grade English class, the co-teachers chose to try parallel teaching early on in their partnership. The coach asked how "they had decided on that approach and what outcomes they were hoping for and whether they had reached it." In the notes section, the coach had this to say to the co-teachers:

Thanks for welcoming me into your class. It was great to see parallel teaching in action! It was a good approach to use for allowing guided practice with a new topic (and a better student-teacher ratio helped) I enjoyed watching you two work together; parity was definitely evident. Following up with an alternative group as we discussed during the debrief session, would provide additional reinforcement for those that appeared to need more from your observation today. Keep up the good work!

Grouping as Related to Patterns of Approaches

Grouping is a large consideration of the co-teaching approach to be used as questions related to grouping seemed to warrant more coaching than others. Co-teachers might be asked how and why they grouped their students the way they had as the coach did not have all the background and data that the co-teachers did regarding students' abilities and

progress. So questions were based on what was observed. Coaches asked how often co-teachers switched groups and what data were used to drive those decisions.

As an example, the following coaching session specific to grouping occurred after an observation of a fourth grade math class. The class began with Fran, the Literacy coach, completing individual assessments with a few students while Tuesdee, the general educator, ran a morning meeting for math. After finishing the assessments, the students joined the group. Fran and Tuesdee continued the lesson using a teaming approach. During the coaching session, Fran and Tuesdee shared that they had students in “six leveled groups” and expressed their “need for help with flexible grouping, particularly in ways of combining students into fewer groups.” The coach discussed “using stations” to see more groups; and other approaches that assisted in the need for grouping. For example, each co-teacher takes three groups and one moves among the remaining groups needing more assistance; or both co-teachers work with groups while higher functioning groups do independent work.

Coaches wrote recommendations about using grouping to support the selection of a co-teaching approach. Co-teachers were asked if they had “considered students’ prior knowledge,” or if they had they “connected students’ reading level to the task and does the chosen grouping method provide support for that task.” When students were paired or grouped, what were the co-teachers using “to be sure that each student was being held accountable for their portion of the work?” Discussions also occurred when a paraprofessional was assigned to the class and how their assignment to work with groups of students can be a part of the decisions about approaches as well.

Coaches noted when they encouraged co-teaching teams “to be flexible in their grouping practices and subsequent selection of approaches.” Coaches often reminded teams to take advantage that there were two of them and thus had a greater capacity for reaching youngsters at all levels. Perhaps one of the most important topics for discussion on grouping the coaches had related to how co-teachers considered the placement of students with IEPs into groups. Co-teachers were reminded that they must be cognizant of who had which goals and objectives as well as accommodations or modifications and that specially designed instruction must not be lost when students with IEPs were blending into the general classroom.

Coaches tied data collection to the approach. For example, when one teach/one observe was specifically focused on one student and the co-teachers needed to plan what to observe and why. When co-teachers were using one teach/one assist, the coach might ask how they monitored students during independent work. “Did the tool provide a way to make note of things that students were doing well, or notes regarding students who appeared to need additional instruction or support?” Any type of assessment could be questioned. When a sixth grade class used exit slips at the end of a class, the coach asked “What information did the co-teachers expect to get from the exit slips?”

Upon occasion, coaches asked questions about data collection with students with IEPs. Teams were prompted that special education is meant, first and foremost, to be instruction focused on individual student needs; it is meant to be an intensive, rigorous, carefully designed instructional plan. Teams were asked about “the amount of specially designed instruction they were providing, while reminding them that these are meant to be research based practices and goal directed.” Teams were asked about how to set

priorities and how to carefully select content. There may be a special curriculum or there may be a special way to teach the content with different pacing, different materials, and different amounts of guided practice. Specially designed instruction also means monitoring each student's progress and changing instruction when the monitoring data indicate that sufficient progress is not being made. This data collection needs to be varied and specific to the needs of the students.

Coaching Recommendations about Approaches

As mentioned, the observation tool includes recommendations made to co-teachers. Data from the observation tool were sorted again to determine if any consistent topics were mentioned in the coaching sessions. Various coaching recommendations did come into play repeatedly and were categorized in the same areas as the questions: approaches, grouping, data collection, paraprofessionals, management, and planning. These recommendations ranged from general to very specific.

Some of the general recommendations were fairly basic but were intended to be supportive and encouraging to the co-teachers as they attempted to use the approaches. One such example that represents some of the common statements made is: "Continue as you are doing. Use this year to experiment with all six approaches. You have created a pleasant supportive place for learning." This was made to a team after an initial observation. The coach had seen evidence of parity and use of the approaches. Another example is "Continue the differentiation with grouping and materials used. This is what the co-teaching should allow for - more explicit instruction for those who need it." This was made to a team after their second observation. The coach had been able to look at instruction since the other elements of co-teaching were evidenced. And one more

example is from a coach that recognized that a team was implementing co-teaching -
“You are a dynamite team! My recommendation is that you actively seek to mentor other teams in the co-teaching process.”

Most of the recommendations were direct, such as:

Per our discussion – using stations is a great use of co-teaching time. This allows for smaller groups, varied instruction, and increased data collection. It also is one of the easiest to plan and adapt if one of the teachers is out. Students would just do independent centers.

Recommendations were even more specific such as the following example when a coach cautioned “Nicole should not overpower Bianca with her energetic, vivacious, and powerful teaching style.” The team assured the coach that they had found a good balance. Nicole and Bianca were concerned that the coach may have picked up that they had not done what they had planned to do. The coach told them that their:

flexibility and ability to make a last minute change from the use of parallel to team indicated their acknowledgement of the current need to assist obviously distraught youngsters” in the room. The needs of the students were the primary concern of the co-teachers, as it should be.

Another example of a recommendation that was specific to the lesson observed was:

Because of class size, math activities with manipulatives, paper and pencil might be easier for some students rather than large group instruction. For class management, a variety of co-teaching approaches should be used. This may be especially helpful when some children are simultaneously using computers. During certain exercises it might be more beneficial to have one co-teacher assisting to make sure all children are participating, rather than both teachers modeling.

This team and the classroom had some confusion as to what the expectation was and once they were assured that teaming was not the goal; they began to look at other

options to manage lessons. They were reminded to make sure groups change, the activities change, and both teachers have times to work with all students.

Occasionally the coach needed to move a team out of its comfort zone, or a 'blame someone else' zone. An example is what one coach said to a ninth grade team that had not made any changes from the previous observation. "Speak to administration about sub coverage for times when Sarah, the special educator, is pulled from room." The coach also wanted them to feel some progress and encouraged them to "keep anecdotal notes of their successes." They were also reminded to "keep flexible - it pays off to keep students flexible too."

The recommendations made by coaches were not required for the co-teachers to implement. However, it is evident that many teams did respond and made some adjustments. They applied the recommendations as seen in changes in subsequent observations, particularly the co-teaching approaches the teams were using.

Influence of Planning Time on Use of Co-Teaching Approaches

The final theme that emerged from notes recorded by coaches during observations in the classrooms and follow-up coaching sessions was regarding planning time. Specifically the influence of planning time on the use of co-teaching approaches. Data from the observation tool were identified and analyzed to determine the relationship between the amount of planning time and the co-teaching approach observed. Two categories of data were coded: (a) time made available; and (b) use of planning time. Coaches would note if there was "evidence of parity in reference to planning." Who does what amount of planning and preparation can be a topic for coaching if need be. Planning

came up often in the coaching sessions. Time made available and use of that time were coded.

Co-teaching teams were asked if they had scheduled planning time. Data regarding planning were collected from little over half of the observations. This can likely be attributed to two reasons. The first reason is that many coaches did not even ask the planning time question at the second observation. For example, notes show that 20 of the 136 teams were together all day. The teams reported on the first observation that they “used their common planning time.” That information was not consistently recorded on the second observations. The second reason is isolated to the number of coaches who repeatedly skipped asking that question even at first observations particularly in middle and high school settings.

Only about 51% of teams had reported that they had been provided with planning time during the school day. That can translate into 15% of the schools. Whether planning time was scheduled or not, many of the co-teaching teams in this study seemed to find the ways and means for co-planning.

Next the data were reviewed to see if there was a connection to the co-teaching approaches chosen and the amount of planning used. Figure 26 shows that fairly equal numbers of teams with planning time as those without planning time used the approaches of alternative teaching, parallel teaching, and station teaching thus increasing the intensity of instruction by reducing group size and directing or differentiating instruction specific to the needs of the group. There was relatively little difference between planning time that was weekly or more, time found before/after school, lunch or on their own, no time provided, and a few observations where no time was mentioned.

Coaches offered little assistance in the acquisition of planning time for co-teachers beyond reminding administrators that it benefited the teams to have planning time made available to them. Some coaches suggested the use of mega-planning time where a substitute covered classes and the co-teachers worked on the framework for several content units. When teams had mastered each of the approaches they became readily usable in the planning process.

Coaches did note the conversations about planning so that when time was allowed, the co-teachers could make the most of their time. They had a variety of planning templates for each approach that addressed who was going to be responsible for different parts of the lesson.

There were comments noted that showed planning had not occurred. “No lesson plan had been developed for this lesson.” Or “Per teachers, daily activities are not pre-planned specific to co-teaching instructional approaches.”

Figure 26. Planning time and approaches used

Another example is one classroom where after students were directed to complete seat work, both teachers worked with and supported individual students. Teachers indicated that each week they took turns planning centers and whole group activities while the other teacher's role was to support instruction.

Questions about planning ranged from general to specific. The most common questions asked were "How is planning going? Do you have enough time? When do you plan?" This often triggered areas of concern that the co-teachers had. One coach had noted that Lynn and Louisa had asked what happens with the co-teaching when one of them was out due to sickness or a planned event. The coach directed them to plan for the coverage rather than one teacher being left to just make do. A lesson plan was developed for substitutes or when there was an event when only one of them was there. Lynn and Louisa chose to use station teaching with only one teacher directed station and the rest of the students working independently. The station with the teacher was abbreviated in time, but that way progress could still be made.

In another classroom, seeing a potential concern, the coach asked "if all adults were aware of lesson plan ahead of time." This led to conversation about finding a way to do so even though there was no scheduled time for the team. The co-teachers decided to use one of the unit weekly planning tools and to share it electronically.

These were findings from the four themes that emerged from notes by coaches in response to the first research question. They provide evidence of how often the coaches would focus the discussion of the observation during the coaching session. The coaches would immerse the co-teachers in the language of co-teaching, by naming and refining

the use of approaches or by discussing what was seen in relation to parity and how a co-teaching team might enhance their working relationship.

Research Question #2

The recursive review and investigation of the data brought forward information specific to the second research question: *When teachers have participated in professional learning specifically related to co-teaching, what are the teaching behaviors and instructional strategies they are observed using, that integrate the elements of co-teaching and instruction?* Information was found in the notes, highlights, and recommendations sections of the observation tool. Descriptions and drawings of the use of physical space were reviewed again. The information was sorted and coded.

Co-teachers need to be conscious of their instructional decisions and must be sure those decisions are based on data and student need. Many styles and forms of teaching were observed and included the use of a wide range of instructional strategies. Given the observations were short by design, few if any lessons were observed for a full cycle of instruction. It is important to note that the coaches were not observing the use of teaching strategies directly, but often the teaching strategies or student learning activities were mentioned in connection to the co-teaching approach being observed. If a particular lesson could have been done using a different co-teaching approach, the coach noted that on the observation tool. To report the findings, the teaching behaviors were separated into four main categories: (a) instructional strategies; (b) grouping strategies; (c) classroom/behavior management; and (d) specially designed instruction. Student behavior was sometimes noted in relation to the above categories, but since professional learning was focused on the teachers it is not directly addressed.

Instructional Strategies

Occasionally, after coaches had seen that the co-teachers had the approaches mastered, their attention turned to the use of instructional strategies. One of the underlying beliefs of the CT co-teaching model is that educators use less whole class lecture driven instruction. Special educators are in the general classroom to use the co-teaching approaches to deliver assistance to students in need. Typically, this can be better achieved by the use of smaller groups and various instructional strategies. Coaches worked with the teams to bring to the general classroom those instructional strategies and practices that are known to be effective such as mnemonics, study skills, organizational skills, test-taking skills, self-advocacy skills, self-monitoring, and hands-on curriculum materials.

The following example is from an observation that looked at the instructional strategies used by a co-teaching team, particularly the types of questions that the co-teachers asked when they were in parallel groups. Emma and Pieper split the students in their first grade classroom into parallel groups based on their reading ability. Each co-teacher asked similar questions covering the same content, but did so in a different sequence and at different questioning levels. Emma started her group by asking the question, “Who is in the story?” Next she asked her students “what they call the person who writes the story.” Her third request was asking them to think of describing words. Pieper started her group by asking them - What do you think will happen? She told them to listen and she read a piece to them. Her third request was to tell the students to look at the pictures, and asked “What do you see?” Both asked students thinking questions such as “Can you tell me a little bit more?” or “Tell me three good thoughts.” Other examples are “Why do you think...?” “I love the way you are thinking about this.” “What else...?”

“What makes you think he’s on a farm?” “Could it be a lot of places?” “What do you think will happen next?” As Emma and Pieper used more open ended questions, they were trying to determine the depth of knowledge of their students. By getting beyond literal and recall of facts and instead being able to articulate the reasoning behind the answers afforded students opportunities to solve future problems. Often they asked a student “to justify why they phrased their answer in the way they did.” They often answered students’ questions by asking more questions. Emma and Pieper reported to the coach that they found this was “leading toward more frequent student responses, a lack of fear of getting an answer wrong thus building students’ self-esteem and confidence.” They discussed with the coach “their plan for moving to students answering each other’s questions not just student to teacher or teacher to student directed ones.”

In another first grade classroom, the co-teachers were struggling with the need for differentiation and strategy instruction. Dyanna and Britney were using Daily Oral Language (DOL) as board work. The students got antsy as it was done whole class and was checked by the teachers before moving on. Students were working at different paces and some students were waiting for their slower paced classmates. The coach suggested “using DOL as station teaching so the co-teachers could monitor a small group at a time while doing other reading activities with the rest of the class.” Dyanna and Britney explained they had been told the expectation was for DOL to be taught whole class. The coach encouraged them to pursue why, but both being new teachers, there was some hesitation to do so. The coach did note “they were dedicated and working well together learning and supporting each other” and “felt they needed a push to use other co-teaching approaches and instructional strategies.”

Basic, simple well-known teaching techniques that provide support and structure to students were frequently noted on the observation tool with specifics as to what the teacher was doing and often what the student was doing as well. The use of visuals is an example of a good teaching technique. In many classrooms, the coaches noted the use of number charts or number lines, sentence strips, flashcards. Classrooms had posters for good writing models such as sentence structure, prepared charts, word walls, large pocket chart words, and story maps posted on the walls. Homework charts and classwork rubrics were evident. Big books, flip charts, and whiteboards were readily used.

Coaches also noted when students were given access to manipulatives that addressed kinesthetic needs. Items such as rods and cubes or cups and pennies were used to support math lessons. Students were encouraged to show their answers and use their fingers and toes. In one classroom, students used a pointer as they read the morning announcement on the chart pack. Other learning tools that were used included: highlighters to mark important information while reading; colored pencils to identify angles; and graph paper to trace shapes to estimate area. Organizational or reference tools were used such as an agenda, folders for assignments, and a checklist of reading strategies.

Students were made aware of the expectations of a learning task/activity. They were given a chance for repetition and practice to learn a new skill in one classroom when both co-teachers were using the same sentences at stations. In some classrooms they had a theme for the week; in others they practiced language related to math activity. Real life examples were used as well as task reading.

Coaches did encourage the use of instructional strategies that allowed for scaffolding, differentiation, student engagement, and tiered support. Referencing these basic teaching techniques may seem simplistic to the discussion, however it is hoped that both co-teachers are actively teaching and using many of these tools.

Grouping Strategies

One category of teacher behavior that was analyzed was focused on which grouping strategies that co-teaching teams used. Co-teachers had received instruction on the use of grouping strategies as they had learned the co-teaching approaches. Therefore, coaches often made note of what grouping was used. They asked questions as to “how groups were formed, were the groups fluid, what data did they use to change groups, and how often the groups were changed.” Coaches and co-teachers discussed “ways to give more opportunities for students to work together, to share their thinking and complete projects.”

Observations noted a variety of grouping strategies. Five frequently used strategies will be addressed. The first strategy is the use of partners. Partners in some observations appeared to be planned and in others students were simply to turn to the person nearest them. Partners were tasked with measuring all four angles on a figure or maybe play a coin matching game. The second grouping strategy was the creation of cooperative learning groups in order to use cooperative learning structures. Many structures had been modeled in the co-teaching sessions and teams had been encouraged to use them with students. Coaches observed and noted co-teaching teams using many of them such as jigsaw, think/pair/share, or mix and match.

The third grouping strategy was small homogeneous groups. In a second grade classroom, Ellie, Mary, and Roxanne, the paraprofessional, split the class up for guided reading practice. After Roxanne read to the full class, she took five students to a small table to review the content of the story. Ten students read a story with Ellie. Mary worked with two students at a back table on the same story. Two girls were at separate table doing work. Ellie and Mary shared with coach that “two of their students don't even know their letters and that is an ever present challenge.” The coach encouraged them to “vary their use of grouping strategies so those students weren’t always together.”

Co-teachers also used a fourth grouping strategy and put their students into heterogeneous groups. These groups could also be random or student choice, but the task had to be one that all students could accomplish. The observation of a seventh grade math lesson with Chris and Kjell provides such an example. Students were allowed to sit on the floor with a small whiteboard and marker, another group sat at their desks with a paper and pencil task, a third group sat at a table with Chris, and a fourth group sat at another table with Kjell. All students were working on the same objective but at varying degrees of difficulty and with varying degrees of teacher support.

The fifth grouping strategy was specific to students being grouped into independent groups and being given differentiated work. Given age and ability, co-teachers needed to determine what tasks students could do on their own and for how long. Chris and Kjell found 20 minute blocks of time worked best for their class. Some students had the ability to work longer but the majority of students began to demonstrate off-task behavior after 20 minutes. Other co-teachers planned for multiple centers to practice a skill or concept that students practiced independently. The centers were color coded and students knew

which color activity they were to do, but they were allowed to try another color if they wished to do so. As the year went on, more centers were added and students' colors might have changed. The sixth grouping strategy was full group instruction. There were specific and appropriate times to have the group together for large group instruction for brief amounts of time. Full group instruction times were often followed by smaller groups for more direct instruction.

The following story highlights the use of grouping strategies by returning to the story of the co-teaching team - Dyanna and Britney. They had discussed with their coach the "difficulty in managing six reading groups." So they talked about the use of other flexible grouping strategies. Multiple ideas were generated. Dyanna and Britney discussed with the coach the possibility of "combining groups versus six separate groups." They looked to see if some groups could be met with less often. If station teaching was used, each teacher met with multiple groups. The co-teachers decided to try different station time blocks. Each teacher took responsibility for three of the reading groups. They tried having a time block for each group and then one free float time so they could assist groups needing more help. Dyanna and Britney tried to add additional group time for a group when the high functioning group was doing independent work. The coach asked about the use of the paraprofessional Roxanne. She was observed correcting papers and was not engaged with students. Roxanne could be taught to contribute more and be given small groups of students to monitor in group work.

The story of Kara and Grace shows how they used grouping strategies in combination with several co-teaching approaches. To start their eighth grade language arts class, Kara and Grace chose to use a Do Now Journal. Students were asked to

respond to the question “What do you think is the purpose of exaggeration?” While they were writing, both co-teachers circulated around the room. [Two Assist] When done, students shared their responses. Students were asked to comment on a connection they made to their friend’s story. [Teaming] The coach recommended to Kara and Grace that they “do this portion of the lesson using parallel teaching and heterogeneous groups to increase the number of students who respond and to decrease time spent on the activity.” Students were comfortable sharing out, so this allowed for even more opportunity to do so. Next students were split into three homogeneous groups. [Parallel/Station Hybrid] Two were teacher-led groups doing the same activity while a small group worked independently. Although the instruction was basic, Kara and Grace took full advantage of grouping to create smaller groups. It was “not clear if some students were in the independent group frequently.” This led to questioning by the coach as to “when and how students in the independent group received instruction to keep moving them forward.” The second visit to this room showed the co-teachers had continued with various strategies for grouping students. The co-teachers had “improved their use of teaming so it was virtually seamless” and “used a jigsaw” which provided even greater opportunity for differentiation. When cooperative learning groups were used, Kara and Grace reported they were making “substantive effort to provide assignments that were appropriate for the group. They provided reminders for behavior, time management for assignment completion and identified facilitators and recorders for each group. “

Classroom and Behavior Management

There were a wide range of classroom and behavior management strategies observed. A few times, coaches noted that co-teaching teams had set high expectations

for learning and behavior. They observed teachers providing positive recognition and reinforcement of acceptable behaviors, prevention of disruptive behavior, and clear consequences for unacceptable behavior. The coaches discussed with the co-teachers “how the creation of a positive classroom environment was negotiated” between the two of them. These teams had routines established for using the bathroom, walking in the hallways, in the lunchroom and on the bus.

When classroom routines were not apparent many coaches recommended various strategies and referenced them in their observation notes. For example, co-teachers were encouraged to consider ‘ask three before me’ as a system for students to ask questions when they are working independently instead of just walking up to teacher who is working with a small group. Another example was “the creation and use of signals in terms of pacing, wrap-up, or noise control.” Signals were used to get students’ attention and to bring the full group together. Often the use of a quiet signal was noted such as: “Clap Once, Clap 1-2-3, Eyes on Me, Eyes up Here, or turning the lights on and off as a signal to transition.” Some teams got creative such as the team that used "Take the Floor as a signal to each other to be in front of room. They also used it if a student was going to lead the class.” Another team used the signal "Teacher Spot" which meant students were to stop-look-listen-learn. In another class, a co-teacher said “I hear one” and the students responded "One" - “I hear two” - "Two" and so on. The use of class or table cheers such as fireworks or silent clapping, or the popular thumbs up/down/sideways added physical movement as well.

Well established classroom routines included transition signals that led to quiet, quick, smooth, and efficient student movement to different groups. This usually took one

minute or less. Sometimes a visual signal for the transition was a better fit for the class so co-teachers held up three fingers for a three minute warning. Coaches noted the variety of strategies used by co-teachers. In one classroom, students were taught two routes in the class that served as traffic patterns to get to and from centers/stations. Coaches made notes when co-teachers gave efficient directions – “leave pencils and papers as you move to the rug.” Some teachers used timers, others used chimes, and still others had songs or poems they recited while students moved through the room such as “the apple poem as students transitioned between the apple graph and the next activity.”

Keeping students on task was a challenge in some rooms, so coaches made suggestions such as “Consider the time length of activities. Some students seemed to be having a hard time sitting still. Perhaps you can have them stand up if the student is correct! Use silent cheers to praise each other!” Being able to observe gave a perspective to what was happening in the classroom with regards to instruction and student behavior. One coach suggested to a team that they “pause more often during instruction for feedback to students, provide an opportunity for clarifying questions, and student to student discussion.” She further suggested a way to engage students by using more hands-on activities. “Break up the lesson into smaller chunks – affectionately known as chunk and chew. This meant giving students two minutes every ten minutes in a lecture to process the new information.” Coaches often pushed for “less teacher talk and more student talk.” Cooperative learning structures such as Turn to Your Neighbor, Pair/Share, or Stand and Share were used. Journal response logs and fill in study note outlines were also suggested by coaches. When necessary it was recommended to some co-teaching teams “to take time to develop positive student teacher relationships.”

Co-teachers sometimes fell into some of the same management traps as single classroom teachers. Calling on all students was important, not just those who were eager to speak out. Coaches would encourage strategies such as the popsicle stick method. One coach's suggestion to encourage student participation was "to ask the question -What questions do you have? versus Do you have any questions?" The first question makes it easier for students to accept the fact that the teacher knows there are questions and the students don't have to feel bad asking them.

Another classroom management strategy had to do with the volume of the teachers' voices. In some rooms the coaches noted "good teacher voice contrast." In other rooms though, the coach asked if there was "a cue that could be used to monitor each other's voice level and the volume of each group." One team had "good use of voice modulation to control noise level within a group. Periodically one or the other would whisper directions which got students' attention and the whispered directions were followed!"

Sometimes co-teachers were faced with additional challenges. Hope and Patricia were very patient teachers. They frequently used positive comments regarding students' behavior. They encouraged higher order thinking with challenging questions. Due to a lack of substitute teacher availability, however, they often had the additional responsibility of having six students from a self-contained classroom spend the day in their room. These students, feeling displaced, often acted out and their behavior impinged on learning for the students of the class. It was distracting for the teachers since the students were taking up the whole back area of the classroom. Because this was out of the teachers' control, the coach recommended to building administrators that this policy of

sending children to other rooms could be alleviated by hiring a permanent substitute.

“Both Hope and Patricia were very capable teachers but to consistently have additional students in their class doesn't allow them the opportunity to teach to their ability using co-teaching approaches.”

Another such scenario was in Judy and Rachel's class. They were making strides in creating a room that was set up to be flexible for grouping. The coach commented that “it was good to keep moving the room around to suit their plan.” However in that observation, in an effort to control student behavior, Judy said to some students “You can't be in my group if you don't behave.” This set up Rachel as if her activity was not the preferred one. Judy needed to find a different consequence. The coach encouraged them to remember that “the groups are to be considered equal.”

Organization of the lesson can have routines so students can anticipate what comes next. There should be routines for beginning of class, transitions and closing. Samantha and Lucy had “great routines.” They had “supplies available for groups to avoid students walking around room (i.e. getting glue sticks.)” They used parallel groups based on a pre-assessment to see which students understood the concept that fractions must be equal parts. Both co-teachers cued students and provided immediate feedback and correction within their group. They gave positive recognition for effort and verbal reinforcement and acknowledgement of correctly completed work. While students worked independently, Samantha and Lucy had a great discussion as to which students got it. The coach commented that “the different activities were so powerful that it might make sense to allow the students more practice and consider repeating the lesson so all

students experienced both activities.” Samantha and Lucy were “commended on having additional activities/materials for those students who finished quickly.”

Other management strategies connected to good instruction that were observed included posting the objectives and essential questions on the board, providing students with key academic vocabulary, clear concise instructions, structured assignments with specific talk points, and use of response cards to check for understanding. Together co-teachers were making decisions about the use of checklists, choice of books and materials, homework assignments, grouping, use of paraprofessionals and assessments. Coaching provided a vehicle for discussion of many of these topics.

Specially Designed Instruction

As the observations were sorted, it became evident that there was very little data collected specific to specially designed instruction (SDI). The paucity of the amount of data does not mean that SDI wasn’t occurring. It may be due to the lack of direction on the observation tool to collect evidence of it.

Co-Teaching Innovation Configuration Map

As stated in Chapter 3, data from a previously developed Co-Teaching Innovation Configuration Map (IC Map) were used. The data contributed context to both research questions and provided further definition and description of co-teaching via the 12 components. The IC Map was used in coaching sessions with 57 co-teachers from three schools to further determine implementation integrity and fidelity of best practice regarding co-teaching (Hall & Hord, 2006). The IC Map was utilized for self-assessment by co-teaching teams in coaching sessions that occurred between observations. The co-teachers independently scored themselves on the IC Map then processed with their co-

teaching partner and then in small groups with a coach present. The co-teachers used the IC Map to self-evaluate where they thought they were regarding implementation of co-teaching and provided guidance and directions for next steps.

The use of the IC Map allowed the co-teachers to form a ‘shared knowledge’ and ‘shared language’ for talking about and understanding co-teaching. This provided them with a conceptual framework for decision-making. They worked on a design for co-teaching that made sense to them. Just like students, teachers bring their own unique interests and needs to the learning situation. Because of these unique interests, co-teaching can be perceived differently by each co-teacher. Since development of an innovation such as co-teaching is an evolutionary and longitudinal process, the proper forum and amount of time should be given to it.

IDEAL				
Co-teachers decide on co-teaching approaches/techniques for all lessons.	All co-teachers jointly decide on co-teaching approaches/techniques for most lessons.	All co-teachers jointly decide on co-teaching approaches/techniques for some lessons.	One teacher decides on co-teaching approaches/techniques for all lessons.	Teachers not using the co-teaching approaches.

Figure 27. IC Map – Decision-making about co-teaching approaches

Looking at Figure 27, none of the co-teachers felt they had reached the ideal of co-teaching, furthest left on the ICMaP, where they were both making all decisions about what co-teaching approaches to use for all lessons. Of the 50 co-teachers who provided a response to this item, 45 (90%) felt that both co-teachers were jointly deciding on the approaches for some or most lessons. None had reached the point of that being true for all lessons. Some co-teachers commented on the difficulty of doing more in this area given the lack of planning time made available to them. Coaches worked with the five co-

teachers (10%) who felt only one teacher was making the decisions. They explored the reasons why and created an action plan for making that change.

Collaboration				
Co-teachers share <u>all</u> classroom responsibilities and information regarding <u>all</u> students. (e.g.: current achievement level, family or medical concerns that impact education, IEP, 504s, modifications and accommodations)	Co-teachers share <u>all</u> classroom responsibilities and most information regarding students.	Co-teachers share <u>all</u> classroom responsibilities and selected information regarding students.	Co-teachers share some classroom responsibilities.	Teachers complete only their role specific responsibilities.

Communication				
Co-teachers interact frequently with each other in meaningful ways.		Co-teachers struggle to interact.		Co-teachers don't recognize the need to interact.

Figure 28. IC Map – Collaboration and communication

On the IC Map, Figure 28 shows that collaboration and communication are two components that can specifically address parity in co-teaching. When co-teachers identified themselves as not being very secure with either area, the coach used that information and discussed ways to grow. Thirty-eight of the 49 co-teachers (77%) indicated that all classroom responsibilities were shared. Only 17 of the 49 co-teachers (37%) felt all information about students was shared. Similarly, 42 of the 49 co-teachers (86%) specified that they interacted with each in meaningful ways. There were seven co-teachers (14%) who felt they struggled to interact with each other. The coaches returned to the issues of parity, roles, use of approaches, and planning as discussion points in an effort to determine the reason for the struggle.

Co-Planning				
Co-teachers meet weekly for a scheduled planning period to discuss and develop co-teaching lesson plans.	Co-teachers meet at least twice a month to discuss and develop co-teaching lesson plans.	Co-teachers meet less than twice a month.	Co-teachers plan through written communication tools.	Co-teachers do not plan together.
Co-teachers come to planning time prepared with information to effectively develop weekly lesson plans.	Co-teachers come to planning time with limited information to develop weekly lesson plans.		One teacher comes prepared with information to develop weekly lesson plans.	Teachers do not prepare for planning time.
Co-teachers make joint decisions regarding roles and responsibilities, approaches, and lesson content.	Co-teachers make limited joint decisions regarding roles and responsibilities, approaches, and lesson content.		Co-teachers make separate decisions regarding roles and responsibilities, approaches, and lesson content.	One teacher makes decisions regarding roles and responsibilities, approaches, and lesson content.
Co-teachers will demonstrate competency and confidence with the curriculum and standards.	Co-teachers work towards demonstration of competency and confidence with the curriculum and standards.		Co-teachers demonstrate limited competency with the curriculum and standards.	Co-teachers demonstrate limited confidence with the curriculum and standards.

Figure 29. IC Map – Co-planning

The IC Map has four components specific to co-planning as seen in Figure 29. The first is about meeting time. The ideal planning time was designated as ‘scheduled’ time on a weekly basis. Only 14 of 48 co-teachers (29%) felt they were at that level of implementation. Almost half of the co-teachers, 22 of the 48 (46%), felt they had time to meet but the time was not scheduled and ranged from every other week to occasionally found time. The remaining 12 of the 48 (25%) co-teachers felt they had to rely on written communication or did not have time to plan. These teams tended to just do things on the fly.

Time for planning was a frequent conversation with coaches. One solution often discussed was for the co-teachers to advocate for some mega-planning time so they could plan units if there was no access to weekly time in the current schedule. Another coaching comment encouraged co-teachers “to establish routines in the use of some of the approaches to reduce the need for planning time.”

The second component involves co-teachers coming to the planning meeting prepared. The majority of the co-teachers 32 of 49 (65%) came prepared to planning to

some extent. There were 17 of the 49 (35%) however that allowed for one teacher to lead the planning and/or no preparation occurred at all. This generated a great deal of conversation with coaches. Teams were reminded of the four major items compulsory for planning co-teaching lessons: choice of a co-teaching approach; curriculum or content to be covered; teaching strategies and learning activities to be used; and student needs. Teams should be using their planning time to make decisions as to how they selected approaches to fit the content of the lesson and the needs of the class.

The third component of co-planning is directly connected to the previous one and looks at level of shared decision-making during planning. The majority of co-teachers 46 of 51 (90%) saw limited or joint decision making about roles and responsibilities, approaches and lesson content. Only five of the 51 (10%) saw these decisions as being made by just one teacher or not at all. Coaching with these particular co-teachers included encouragement to document data that to be used for self-reflection in reaction to use of co-teaching. For example, it could be beneficial to record decisions about the co-teaching approaches and their respective roles on the lesson plan. It would not be labor intensive to use a code such as "O" for observe, "S" for stations, etc. Teams were also coached to revisit the lesson plan to see if the documentation provided information about preferences, alternatives that might work better next time or approaches a team might like to try again.

The fourth and final component of co-planning is related to teacher confidence with curriculum and standards. The majority of co-teachers 48 of 51 (94%) either had competency and confidence or were working toward it. The remaining three of 51 co-teachers (6%) reported limited competence or lack of confidence in their knowledge of

the curriculum and standards. During coaching, the level of comfort with the content became mixed with frustration over the lack of time for planning. This had to be revisited and addressed before getting to ways to problem solve within this component.

Student Engagement				
Co-teachers always select approaches and activities that foster high levels of student engagement through cooperative learning and flexible grouping to meet student needs.	Co-teachers sometimes select approaches and activities that foster high levels of student engagement through cooperative learning and flexible grouping to meet student needs.		Co-teachers select approaches and activities that foster high levels of student engagement limited to small group instruction based on students' ability level (e.g.: bluebirds).	Co-teachers limit student engagement due to utilization of fixed seating (e.g.: rows) and activities designed to be completed independently (e.g.: worksheets).

Figure 30. IC Map – Student engagement

The component of student engagement in Figure 30, addresses instructional choices to best address the needs of the students. It involves selection of approaches and activities that allow for the greatest flexibility in grouping. 31 of 41 (76%) of the co-teachers self-identified that they always or sometimes made use of cooperative learning, flexible grouping, activities and approaches to increase student engagement. The remaining 10 of 41 co-teachers (34%) admitted to limited or no use of these items to engage students. Coaching in the context of co-teaching focused on concerns about the co-teaching approaches.

Physical Space				
Co-teachers demonstrate shared ownership of the same physical space and materials.		Co-teachers co-exist in the same space.		One teacher controls the use of space and materials.

Figure 31. IC Map – Physical space

When looking at the 57 co-teachers who responded to this component of shared physical space and materials, in Figure 31, the majority (63%) marked it as fully implemented. One teacher (2%) felt the space was controlled by one teacher. About 13 co-teachers (23%) felt that they only ‘co-existed’ in the space. Coaches found the tangible physical space was often a jumping off point to illustrate to co-teachers when parity was not evident.

Reflective Practice				
Co-teachers <u>weekly</u> collect pre/post data, analyze and discuss findings to determine grouping, content to be covered, and co-teaching approach to be used.	Co-teachers collect pre/post data <u>monthly</u> , analyze and discuss findings, and may or may not determine grouping, content, or co-teaching approach.	Co-teachers collect pre/post data <u>quarterly</u> , analyze and discuss findings, and may or may not determine grouping, content, or co-teaching approach.	Co-teachers collect pre/post data <u>bi-annually</u> , analyze and discuss findings but do not change classroom practice.	Teachers do not collect or use data to drive instruction.

Figure 32. IC Map – Reflective practice

One component as seen in Figure 32 is one that determines that co-teachers should be reflective in their practice. They should certainly use personal reflection but they also should be using data to determine how students will be grouped, what content to teach, and what co-teaching approach might be the best fit for the lesson based on past practice and the needs of the students. Only eight out of 51 (16%) co-teachers felt they were being reflective on a weekly basis. Another 15 (29%) felt they were looking at data monthly but they were confident that the data were making an impact on the grouping or co-teaching. Another 16 (31%) were looking at data quarterly. There were seven (14%) co-teachers who identified a biannual collection of data but no change to classroom

practice. The remaining five co-teachers (10%) were not collecting data in relation to co-teaching at all.

Coaching with teams about data became tangled in the discussion of planning time. If they did not have the time to plan, they often felt they did not have the time to review data collected. Co-teaching teams were told to find efficient and effective yet simple ways to collect data, such as students keeping record of what they had accomplished in the independent station.

Assessment				
Co-teachers use a variety of assessment methods.		Co-teachers explore the use of a variety of assessment methods.		Co-teachers use traditional assessment methods.
Co-teachers jointly decide on <u>all</u> forms of assessment and grading for <u>all</u> students.	Co-teachers decide on some forms of assessment and grading for most students.	Each teacher decides on assessment and grading for their specific students.	One teacher decides all forms of assessment and grading for all students.	

Figure 33. IC Map – Assessment

There are two components in the area of assessment as seen in Figure 33. The first involves the variety of assessment methods. The ideal is for co-teachers to use a variety of assessment methods. Only 16 of 47 (34%) co-teachers felt they were doing so. A larger number of 30 (64%) co-teachers were exploring and trying a variety of assessments. There were four (9%) co-teachers who were still using traditional assessment methods only.

The second component is about the decision-making regarding assessments and for which students. There were three of 51 (6%) co-teachers who were confident that they jointly decided on all assessments for all students. Most of the co-teachers 32 (63%) were doing some joint decision making. There were 14 (27%) co-teachers who either split

assessments for their students (i.e. only special educators assessing students with IEPs). There were two (4%) co-teachers who allowed one teacher to do all the decision-making about assessments.

Assessment was part of professional learning sessions. There weren't many observations of assessments recorded, so coaches often asked "how the co-teaching teams were using formal assessments." Co-teachers were urged to take advantage of the adults in the room, to use one teach/one observe to collect data. This observation based assessment can assist in collecting baseline data for behaviors which can allow for tiered interventions. When teams were using one teach/one assist, it was suggested to do some quick assessments with students, such as a quick oral reading check versus just waiting for students to ask for help.

There were observations of co-teachers using pre-assessments. Coaches asked co-teachers how they used what they learned from the pre-assessment. Sometimes co-teachers shared how they had grouped students based on pre-assessment and information from the previous day's lesson. Co-teachers determined which students understood a concept (e.g. fractions are parts of the whole) which helped to decide the selection of materials to be used such as manipulatives, number charts or grids. When co-teachers reported low implementation across most of the IC Map, it helped coaches identify who may need an additional tier of support.

Summary

Chapter 4 provided an analysis of the data collected from the Connecticut Co-Teaching Technical Assistance Visit Observation Tool (CT TAV-OT) and the Innovation Configuration Maps (IC Maps). Observations of the educators in this study resulted in a

collection of narratives that tell a larger essential story about co-teaching. In response to the first research question, there were four themes of co-teaching that emerged. Findings regarding each theme were discussed. The narratives share how the coaches worked with the co-teachers in the study to provide feedback regarding the development of parity and the identification of the necessary ingredients for use of each of the six co-teaching approaches. The influence of planning time on the use of co-teaching approaches was explored. The stories tell of observations of the many successes of co-teachers and their remaining challenges.

The second research question was regarding teacher behaviors and instructional strategies. The data showed that the majority of the strategies were used with the entire class of students and specially designed instruction was rarely observed.

CHAPTER 5

DISCUSSION & CONCLUSION

Introduction

This chapter presents a discussion of the findings and results for both of the research questions of the study. It also provides recommendations for practice as informed by the study results. Undoubtedly, one of the most important elements in a discussion concerning the current status and future of co-teaching is the need for further research so recommendations for future research are suggested.

Research Findings

The data collected in this study comes from the Co-Teaching Technical Assistance Visit Observation Tool (CT TAV-OT) and the Innovation Configuration Maps (IC Maps). In combination, the narratives told a larger essential story about co-teaching through the lens of the coaches who did the observations. The story reflects what the coaches observed and recorded of the actions of 136 co-teaching teams. Coaches captured the ways they saw how co-teachers experienced parity, used the six co-teaching approaches, celebrated successes, and faced remaining challenges.

By looking at the notes from the observation tool, a discussion is warranted about the diversity of the coaches regarding their skill level to provide coaching. This skill surfaced as a crucial element in the support of educators as they implement an innovation as complex as co-teaching. Coaching and feedback could be a delicate and elegant

process. Coaches were not following a step by step approach. Coaching was necessary to ‘build skill, will, knowledge, and capacity’ (Aguilar, 2013).

In order to provide appropriate coaching, coaches had to use their intuition and intelligence and all they knew about people, content, curriculum, teaching, learning, and working with students. Coaches needed to be cognizant of the level of experience and expertise of the co-teachers with whom they were working. Coaches needed to consider which developmental stage of co-teaching – beginning, compromising, or collaborative – that teams were in. Different stages would drive coaches to ask different questions after an observation.

The notes from the coaches showed a range in the coaching that was provided to the teams as evidenced by the types of questions, as well as the suggestions and recommendations made to the teams after an observation. Some notes were rich in detail and description while others were succinct and matter of fact. Through the combination of all the notes together, however, there were themes and findings that merit further discussion.

Research Question #1

The first research question was: *When teachers have participated in professional learning specifically related to co-teaching, what themes emerge from notes recorded by coaches during observations in the classrooms and follow-up coaching sessions?* Four major themes were identified from the notes on the observation tool. Data in relation to that theme were analyzed.

The first theme was the importance of the development of parity. The observation tool was reviewed for evidence of notes, highlights, or recommendations regarding

parity. Coaches looked for signs of parity and found indicators in over 75% of the classrooms. The notes on the observation tool indicated if the coach had seen parity through comments such as “Sharing classroom roles - instruction, support, class management”, or “Both teachers actively shared responsibility for the class.” or “Parity with behavior and management” or “Positive Relationship Always Adjusting!” or “Students actively interacted with both teachers whenever they needed specific/individual assistance.”

The development of parity occurred most often with co-teaching teams that appeared to be in the installation or initial stages of implementation (Fixsen et al. 2005). Coaches found parity between co-teachers who had found balance in the different areas of knowledge they brought to the relationship and determination of what role each co-teacher took. Content knowledge for a grade level or a specific subject area remained the strength of the general educator whereas the special educator held the greater knowledge of individualization, adaptation and accommodation of content. The balance of these areas needed to occur in the planning for lessons as well as the actual instruction and subsequent assessment.

Special educators had a deeper understanding of behavior issues beyond ‘typical’ student behavior that needed to be addressed while the general educator had more experience and skills in large group management. Parity cannot be assumed just on the basis of a co-teaching approach used. However, if parity had not developed, it was rare to see the co-teachers using all six approaches; in fact they often stayed limited to the use of three approaches - one teach/one assist, one teach/one observe, teaming. Those three approaches did not lower student-teacher ratio or provide opportunity for more intensive

instruction. The coaches found that co-teachers without parity did not get creative nor embrace change in their teaching behaviors; and those teams did not make co-teaching part of the permanent landscape of the room. Instead coaches continued to see one teacher who dominated the instruction, and trust between the teachers had not developed. Only eight of the co-teachers that used the IC Map specifically indicated a struggle with parity. It was important that parity was reached with co-teachers for them to create a co-teaching environment to benefit all students. The goal of parity was to see that both co-teachers had equal decision-making, responsibility, and accountability.

The second theme was after training, a wide range of co-teaching approaches were used by teams during their initial observations. When observing the first time in a classroom, coaches noted the use of one or more co-teaching approaches had occurred in 94% of the observations. Approaches were recorded in sequence of their occurrence and were supported by notes, highlights, and recommendations by the coaches. Coaches noted that as teachers moved from solo teaching to co-teaching, the focus of an observation shifted to which of the six co-teaching approaches were being employed. Co-teachers had been provided with information on the 'how-to' of the six co-teaching approaches as well as the benefits for each approach, and the potential challenges in their use. Coaches watched as co-teaching teams put that information to work in their classrooms.

The third theme was after coaching, co-teaching changed in a positive direction. One measure of this was the usage of co-teaching approaches. The comparison of co-teaching approaches seen in the first observation to those approaches seen in the second observation was substantial. Six patterns of use of co-teaching approaches were defined.

The data were collected and counted to show that in 85% of the classrooms, the overall pattern of usage of co-teaching approaches was different in the second observation after coaching. The approaches chosen in the second observation were most often alternative teaching, parallel teaching, and station teaching. This was in keeping with the coaching to take advantage of both teachers in the room, use smaller group size, and address individual student needs.

The fourth theme was co-teachers have to have shared planning in order to implement co-teaching. This influence of planning time could be seen on the use of co-teaching approaches. Data were not collected on every team. Only 51% of the 136 co-teaching teams that had reported planning time conveyed that they had been provided with planning time during the school day. This translated into 15% of the 44 schools scheduling planning time for the teams. The coaches noted, however, whether planning time was scheduled or not, the co-teaching teams in this study seemed to find the ways and means for co-planning. The amount of time a team had for planning or used for planning did not seem to influence the level of use of the co-teaching approaches.

With those teams that used the IC Maps, the results support the above findings from the observation tool regarding planning. On the IC Map, 29% of the co-teachers reported ‘scheduled’ planning time on a weekly basis. An additional 25% did not have time to plan and were most likely “to try an approach” as they went along.

Research Question #2

The second research question was: *When teachers have participated in professional learning specifically related to co-teaching, what are the teaching behaviors and instructional strategies they are observed using, that integrate the elements of co-*

teaching and instruction? A wide range of teaching behaviors and instructional strategies were observed and recorded. Four categories were identified: (a) basic instructional strategies; (b) grouping strategies; (c) classroom/behavior management; and (d) specially designed instruction (SDI).

The first category was instructional strategies. Strategies were frequently recorded even though the coaches were not specifically told to observe teaching strategies. The strategies were typically connected to the use of a particular co-teaching approach. The majority of instructional strategies that were noted was considered basic and had been used as good teaching techniques as part of a lesson for all students. These strategies ranged from the use of mnemonics to study skills. This was a surprising finding and considered a missed opportunity for the co-teachers to address students' needs.

The second category of teaching behavior focused on the grouping strategies coaches observed that had been used by co-teaching teams. Five grouping strategies were specifically identified. What was not always readily apparent was what data or information the co-teachers had used to create the groups unless the coach specifically asked about it. Coaches noted when they had asked why students had been grouped a particular way. They also noted if they had encouraged or recommended that a team try a new grouping strategy, such as putting students into cooperative learning groups. Then each co-teacher could concentrate on a smaller number of students.

The third category outlined was that of classroom management and behavior management techniques. There was a wide assortment of techniques observed and recorded by coaches. Examples included how students transitioned between activities, how classroom rules were being followed, and how misbehavior was addressed. Often

the seemingly successful management techniques were noted. Others were noted when the coach perceived a connection between the approaches and the development or lack of parity. If one co-teacher remained 'in control' the majority of the management seemed to come from that teacher. If management were shared, coaches may or may not have mentioned it.

The fourth category involved the use of specially designed instruction (SDI). Since SDI had not been identified as a priority item to look for by coaches when they were observing in the co-teaching classrooms, it did not show up in notes on the observation tool. There was a greater focus on determining if parity was present and on the use of the six co-teaching approaches with the inclusion of students with disabilities into the general classroom. Some of the special educators in this study told coaches they provided SDI in the co-teaching setting, while others claimed to have saved it for times when students were pulled out for resource or support time. Co-teaching was meant to serve as a means of providing students with disabilities access to the general curriculum in the general classroom. Some coaches did encourage co-teaching teams to find time for SDI.

Discussion

Findings from both of the research questions along with connections back to the literature review and the conceptual framework of this study provide the basis for discussion. The findings from this study reinforce research that shows educators can work together to provide a learning environment for all students through the use of co-teaching. The details and descriptions garnered from the notes by coaches paint a picture of co-teaching as it was being observed.

The models of observation and coaching that followed training provided appropriate and high quality professional learning and opportunity for educators to do co-teaching well (Nelson, et al, 2008; Friend, et al, 2010). An important component of the professional learning was the identification or affirmation of ways to support educators who are attempting to develop parity, use the six co-teaching approaches, use specially designed instruction, and change their teaching behaviors to create a classroom where all students can be successful.

When coaching is used to support educators, the coaches learned to immerse the educators in the language of co-teaching. Professional learning sessions about co-teaching can teach the meaning of the language of co-teaching, but the follow-up observation and coaching can be instrumental to model and reinforce the use of that language. A basic theme of hermeneutic philosophy is that “a person’s understanding of his/her life experiences always reflects broader cultural viewpoints that are implicitly conveyed through language” (Thompson, Pollio, & Locander, 1994, p. 432). In this study, language was considered more than just a medium by which thoughts are expressed. It was far more than a collection of words, phrases, punctuation and other grammatical rules; instead language was seen as a system of interrelated meanings, or narratives that provided educators with a culturally shared frame of reference.

Coaches would speak the language of co-teaching. This meant using the metaphors (i.e., marriage) and sayings (i.e., service delivery model) with co-teaching teams to build understanding and provide perspective based on a common cultural history. As co-teachers worked together, they also developed a personal history relative to co-teaching. Thus the language weaves a living record of cultural tradition that

becomes part of the reality of the co-teachers' everyday classroom life. This becomes their cultural viewpoint, an often unspoken background of socially shared meanings. It is hoped that this viewpoint or perspective is a provisional one and obtained by looking at current culturally shared knowledge, beliefs, ideals, and taken-for-granted assumptions about co-teaching in combination with personalized meaning to create even more responsive understanding and insight regarding co-teaching. When coaches used the language of co-teaching, it appears to have had an impact on the classroom practice of those co-teachers. The IC Map was a chance for further immersion in the language of co-teaching. By self-reflection on where co-teachers would place themselves on the continuum addressing each component, there is a need to look at the specificity of the language used. For example, the difference in language between the items "Co-teachers decide on co-teaching approaches/techniques for all lessons." and "All co-teachers jointly decide on co-teaching approaches/techniques for most lessons."

Taylor, Yates, Meyer & Kinsella (2011) remind us "teachers are not a homogeneous population but represent diverse perspectives, experience, expertise, receptiveness to new ideas, and potential for leadership roles" (p.85). In reflecting on ways to support co-teachers, observation and coaching allowed coaches to take into perspective the diversity of the educators and their ability to contextualize professional knowledge and learning to the classrooms in which they teach. This diversity was recognized in the way the coaches provided feedback to the teams they coached.

In a way, coaches provided the bridge between research and practice. They assisted co-teachers in integrating theory, knowledge, and practice through cycles of observation and coaching that supported the implementation of co-teaching. There was

diversity in the coaches, and it was evident that some were more informative than others. Coaching had an influence on the co-teachers in this study as seen in the changes made regarding the choice of a co-teaching approach to better meet the needs of the students in the classroom by reducing the teacher to student ratio and increasing opportunity for specially designed instruction.

Literature and research exist that show when teachers receive coaching and feedback it can have huge effect on their instruction (Kretlow & Bartholomew, 2010). By observing co-teachers in action in their classrooms, a coach is in a prime position to offer specific feedback that can lead to the further implementation of co-teaching. This specific feedback adds relevance to teacher learning and accelerates the transfer of new skills into practice.

Another way for coaches to support co-teachers was in addressing the topic of the influence of planning time. The amount of time a team had for planning or used for planning did not always determine the level of use of the co-teaching approaches. It was predicted to be more closely aligned – more planning led to greater use of co-teaching approaches. But some of the teams figured it out, even without planning time. A few, but not many, just threw up their hands and said they couldn't co-teach without time to plan. Coaches could collaborate with administrators to seek time in the schedule for co-teachers to plan.

One area that needs attention is how to support co-teachers regarding SDI. The elements of co-teaching and instruction need to be integrated in order to take full advantage of both teaching professionals and address the individualized needs of all students in the classroom (Friend & Pope, 2005). The question remains as to how much

SDI actually occurred in the classrooms that were observed. Were instructional activities planned and organized to modify, as appropriate the content, methodology, or delivery of instruction? Unfortunately, it was difficult through observation to determine if any modifications had been made. SDI is meant to be truly individualized and specially designed for a student with a disability and linked to the student's IEP goals and objectives. SDI is supposed to be different from what a general education student receives and typically delivered by an appropriately qualified special education professional. It is meant to be an intentional and systematic process that specifically addresses the student's needs. It is supposed to go beyond the use of just good teaching. SDI was not recorded as happening in the observations in this study. When the data for this study were collected, it was not the priority that it is today. SDI is an increased expectation and focus for co-teachers currently.

Typical instructional strategies that were recognized and noted by the coaches can be categorized by their effect on student achievement as analyzed by Marzano, Pickering, & Pollock (2001) in a metasynthesis of the research. Other researchers, such as Hattie (2009) and Haycock (1998), argue that it is the quality of the teacher's teaching that matters when the goal is to enhance the learning gains for all students. Teachers bring their prior knowledge to the classroom which influences their teaching practices including the use of instructional strategies. If coaching in one area can allow the teacher to generalize across other areas there may be great value in its use. Kretlow, Cooke & Wood (2012) found substantial changes in instruction after four short hours which included training, preconference, coaching, and feedback.

The professional learning models of observation and coaching brought opportunity for co-teachers to reflect on their own practice and to challenge their own thinking in a non-threatening way. Lynch, Madden & Knight (2014) analyzed a model of teacher professional learning that was premised on coaching, mentoring and feedback. This model is known as the *Collaborative Teacher Learning Model* (CTLM) and was used in New South Wales, Australia. Their hypothesis was that the complexity of co-teaching merited the use of coaching. Teams had an expert to provide them feedback when they used one of the approaches as to what worked and what needed further work. Co-teachers can generalize the use of the approach to any variety of scenarios within the day. Teachers as learners will learn more from reflecting on their own practice using feedback than from just their engagement in the experiences. This creates a model for co-teaching that integrates the notion of a professional learning community with reflective practice on praxis – acts which shape and change the world. This matches the professional learning model of observation and coaching used in this study. Those co-teachers who used the IC Map learned through self-reflection and discussion with their co-teacher partner made decisions for changing or adapting what they were doing after the process.

In this study, the identification of six patterns of the six co-teaching approaches after coaching supported the findings from the meta-analysis by Yoon et al. (2007) that combining training with follow-up support was effective in improving teacher practice and ultimately student achievement. The chosen model of coaching as follow-up served as a way to provide fundamental information to teachers that was job-embedded, relevant and immediate.

Kretlow and Bartholomew (2010) found that teachers preferred coaching rather than a demonstration lesson, after school meeting, verbal feedback, or group sessions. In this study, coaching was used immediately after an observation. It was done by experts who were outside trained observers. This study supports their finding that coaching proved effective in improving teacher practice.

One final discussion point involves the idea of sustainability of co-teaching in a school through the identification and training of school/district coaches. In many observations, there was encouragement to attend an additional series of facilitator training so skilled co-teachers became coaches of their peers. Notes were on the observation tool such as “Let’s look to videotaping this” or “Allow others to observe you” or “Come to Facilitator training this summer, you’d be a great team!” Over a dozen teams were encouraged to become facilitators so the co-teaching could remain functioning even after the SERC coaches had left. The facilitators would stay current with changes in the field through periodic meetings with other school or district level coaches and facilitators. Their responsibilities also included monitoring data regarding students in co-taught classes, teaching new staff about co-teaching, and serving as a liaison with administrators when issues such as the need for planning time would arise. Building local capacity provides a level of ongoing support in a school/district that would help build sustainability of the co-teaching.

Recommendations for Practice

Three recommendations for practice can be identified from this study. Each recommendation addresses a need for greater emphasis or continuation of findings related to an aspect of the professional learning models in this study. The recommendations are:

(a) modifications to the observation tool (CT TAV-OT); (b) expansion of work with the co-teaching IC Maps; and (c) consideration of additional coaching models.

The first recommendation is to make modifications to the CT TAV-OT as an observation tool. In order to collect data from the observation tool regarding SDI, there may need to be a prompt on the tool to use during observation as well as questions during coaching. This would help bring the attention of the coach to seek information and address this critical area. In Figure 34, you can see a potential revision to the CT TAV-OT. This could update the tool to allow for a section for data collection on the observation and description of SDI.

Co-Teaching Technical Assistance Visit Observation Tool	
Date:	School/District:
Co-Teacher 1:	Position:
Co-Teacher 2:	Position:
Other Adult(s) in the Room?	Role:
Time of Observation:	Subject/Grade Level:
How often together?	How much planning?
Number of Students: Male/Female: / / / / /	Number of Students with IEPs:
Was parity evident?	
Describe how:	
Was Specially Designed Instruction (SDI) observed?	
Description of SDI:	
Which Approach(es) was/were used? (Number the sequence of use and delineate time if possible.)	
1. observe → → → → → parallel → → → → → alternative → → → → → 2. assist → → → → → station → → → → → team → → → → → 3. other/combination → → → → →	

Figure 34. Revised CT TAV-OT

The observation tool worked well in this study as a vehicle for information and data as reported by the coach. It lent itself to a focus on approaches in the observations of this study. By adding parity to the tool, it assured more frequent notation of evidence of parity by the coaches. The findings of the current study emphasized the importance of the development of parity. Notes from coaches showed that if parity had not developed the co-teachers were not using all six approaches; in fact they often stayed limited to the use of three approaches - one teach/one assist, one teach/one observe, and teaming.

Another modification suggested is to add a section to the tool to bring SDI to a more focal point. It is likely that this addition would cause more data to be recorded which would allow for deeper analysis. Additionally, if co-teachers are not using SDI, by being on the tool, it serves as a prompt for coaches to offer feedback on its importance. It would allow for guidance and discussion on how to allow for greater use of SDI.

The second recommendation for practice is expansion of the use of the ICMaP within the professional learning for teachers who will be implementing the innovation of co-teaching. The use of the IC Map in this study showed that this practice allowed the co-teaching teams to frame the meaning of co-teaching and give order to it so that it is inclusive of their opinions and experiences regarding co-teaching. The consideration of the co-teachers' point of view made it more of a reality in their implementation of co-teaching. Developing an IC Map can be challenging and energizing. As a professional learning model or tool, the IC Map could be utilized to determine implementation integrity and fidelity of best practices regarding co-teaching (Hall & Hord, 2006). The IC Map could serve as a guide for co-teachers to improve their practices.

The third recommendation for practice is to explore other methods of coaching to support co-teachers. For example, an eCoaching system (Ploessl & Rock, 2014) could be established. Through the use of technology, co-teachers are supported while they planned and implemented varied co-teaching approaches, or planned and provided student-specific accommodations and modifications through specially designed instruction.

Another option could be the use of a peer coaching model to develop internal capacity. Two or more professional teachers decide to formally work together to reflect on current practices. They can expand, refine, and build new skills while sharing ideas and perhaps conduct some action research in their classrooms. Peer coaching allows teachers to address curriculum and instruction, observe and teach each other, develop and analyze materials, plan, and solve problems together (Robbins, 1991).

Each of these recommendations for practice have potential to enhance and improve the implementation of co-teaching by adding depth to the findings from this study on observation and coaching as professional learning models for supporting co-teachers.

Recommendations for Future Research

There are two topics recommended for future research. The first area takes a deeper look at the professional learning models of observation and coaching. The second area has a focus on student achievement. Several studies are suggested for each area.

The first area recommended for future research is research that further examines the effectiveness of observation and coaching with co-teachers. This research could involve looking at coaching effects over extended periods of time or the maintenance of acquired co-teaching skills when coaching is withdrawn. More precise data collection

over longer periods in diverse settings could help establish what is necessary for long-lasting acquisition of newly acquired co-teaching skills. Researchers might also examine more closely the qualities of effective coaches and the components of coaching related to changing teacher behaviors. Three studies are suggested.

The first study would be to examine the temporal dimension on the actual duration and intensity of collaboration between two educators. Observing and coaching co-teachers for a full year could be planned. Data collection would include notes from observations and coaching sessions as well as an in depth intensive time analysis of behaviors of co-teachers observed, collection of weekly logs, coding of the various co-teaching approaches by amount of use, and monitoring prep time, non-teaching time, and follow-up debriefing time. Investing the time in doing a study like this could offer better parameters for a more accurate estimation of the amount of time that needs to be invested in observation and coaching to implement co-teaching. This may be particularly relevant for smaller schools with limited resources. For example, if a special educator co-teaches with several general teachers, certain elements related to effectiveness and efficiency may be compromised (i.e., time allotted for planning, type of co-teaching involved, etc.). Understanding of time invested could determine the impact of the number of general educators with whom a special educator can effectively co-teach.

A second relevant study for consideration would be to expand the observation and coaching to include observing co-teachers when they are planning. Why do some teachers require less time to plan than others? How do teachers use planning time efficiently? How do they make decisions for which approaches to use, how to group students and how can they improve student behavior? This study would offer guidance on

the amount of planning time and the type of planning that educators need to implement co-teaching.

A third study for consideration is a look at the nuances of professional learning around co-teaching, by considering factors such as frequency, length, and duration of professional learning opportunities in addition to amounts of coaching. There is not enough empirical evidence from the field yet to say that coaching merits widespread use, but the findings such as those from this study are favorable. Future research could compare the effects of low, moderate, and high numbers of coaching sessions on teachers' instructional accuracy as well as sustained accuracy that are the collection of follow-up data once all professional learning activities have ended. IC Maps as well as the observation tool from this study could be used as well as one of the other tools that have been developed such as the Colorado Assessment of Co-Teaching (CO-ACT) (Adams, Cessna & Friend, 1993; Pearl, Dieker, & Kirkpatrick, 2012). Other such tools are the Co-Teaching Rating Scale (Gately & Gately, 2001) or the Co- Teacher Relationship Scale (Noonan, McCormick, & Heck, 2003). A study could also be done to combine aspects of each of the assessment to create an assessment tool that measures efficacy of co-teachers, parity, co-teaching skills, use of co-teaching approaches and student achievement. The IC Map could be used to note adherence of a team to the components of co-teaching.

The second major area for future research is one with a focus on student achievement. There is a need for studies to look at the degree to which co-teaching practices are implemented with fidelity and the relationship of these factors to student achievement. Future research is warranted to confirm if co-teaching is worth doing.

Future research could include studies that involve looking at how co-teaching can improve student outcomes and close student achievement gaps. For this second area, it is suggested that the following four studies be considered.

The first study to consider would be one that would look more closely at the use of SDI in co-taught classes. This could provide support to the work of Conderman & Hedin (2012). Co-teaching has a primary goal of helping students with disabilities more efficiently meet goals on their individualized education program. Co-teaching should allow a special educator to model the use of a specific strategy for the general educator so they both can follow through on the SDI for a student. When appropriate, the strategy can be made part of the general curriculum allowing for multiple times the SDI occurred.

A possible second research study would be to collect data to see if the changes educators made in their instructional practices while co-teaching had any impact on student achievement. Did co-teaching have the anticipated results for the students for whom it is designed to be supporting? Are achievement, social, and behavioral goals for students being met? A clear and feasible methodology for gathering such information would need to be developed that could control some of the many independent variables. Perhaps such a study could be longitudinal and follow students from co-teaching classes to non-co-taught classes to see if they remain successful. To this end, this research would seek to describe the quality indicators (e.g., individual instruction, learning groups) that co-teachers need in order to be effective in their roles and which have an impact on student achievement.

A third research study that focused on the generalization of coaching to untrained instructional areas may be significant. Schools have limited time and resources to provide

extensive training in every subject and content area. If coaching in one area can allow the teacher to generalize across other areas there may be great value in the use of coaching. If coaching had success with co-teaching approaches, might it not be successful with specially designed instruction, student achievement, or any of the other components of co-teaching as seen on the IC Map? What are the factors that make co-teachers coachable?

A fourth study to consider is to expand the reach of professional learning models by looking at teacher preparation models. Future research to address the need to prepare pre-service teachers to be effective co-teachers might serve as a significant component of teacher education curricula instead of waiting until in-service after teachers have earned their degrees. This coincides with the work of Bacharach, Heck, and Dahlberg (2011) whose research found that the use of the co-teaching in teacher preparation is “a promising practice for fostering collaborative skills, increasing student participation, and improving classroom instruction and professional growth for all participants” (p. 15).

Limitations

Upon completion of the study, it was apparent that there were additional limitations to those that were identified in Chapter 1. The first limitation is recognition of the timeframe of the study; since the data were gathered changes have occurred in the field and are not reflected in the data. The study used observations which had been done over the course of 15 years.

This connects to the second limitation. The coaches collected data based on the observation tool that was given to them. This led to the lack of data collected regarding the use of specially designed instruction (SDI). The current focus of the field in co-

teaching is SDI, however for the majority of the time the data were collected for this study, SDI was not on the observation tool which was driving what coaches had been directed to observe and work on with teams.

The third limitation is the variation of the skill of the coach. This calls for closer attention to the process for selection and training of coaches. Some coaches wrote very evaluative comments which lends toward teaching observation as a skill for the coaches to develop. Consideration should also be given to the variation in the amount of coaching time that each team received.

One final limitation is that there was no way to connect the observation data to individuals who had also done the IC Map as the data had been entered into a database with no names attached. Therefore, there was no way to determine if the IC Map had been a variable in teams using more co-teaching approaches.

Summary

This study serves as a collection of stories from co-teaching classrooms that provide greater understanding of co-teaching through rich deep descriptions. A professional learning model that included observation and coaching after training was used to guide educators as they implemented co-teaching. The model was designed to support teachers in being reflective about their practice and to feel safe about asking questions. It provided the time, intellectual, and material resources to support a collaborative approach to their questions.

The educators in this study participated in professional learning sessions on co-teaching so they would know, understand, and be able to practice co-teaching. It was imperative to work with educators who understood co-teaching as an innovation. The co-

teachers were observed while they were co-teaching. The notes from the observations document the use of the various co-teaching approaches and the identification of instructional activities and strategies used. These narratives can build a case for the positive impact of co-teaching.

It is clear that co-teaching was not something that just happened. It needed to be a productive mix of the talent and training of special and general educators. Co-teaching had to be dynamic, deliberate, and differentiated. It had the potential to unite the science of specially designed instruction and effective pedagogy with the art of teaching in tandem. It meant reorganizing resources and schedules to provide students with disabilities better opportunities to be successful in learning what they needed to learn.

This study affirms that co-teaching is about more than just bringing the students with special needs into the general education classroom; it is more than just bringing another certified professional into the room. A collaborative partnership is inherent in the definition of co-teaching and must be actualized. Coaches found that co-teaching was not about a teacher being attached to a single student; it was not about setting aside space in the room where ‘they’ and their teacher would meet and work and do ‘their’ thing. It was not about a certified teacher being relegated to the position of an aide, paraprofessional, or teaching assistant. Just because two educators were in the same room at the same time did not mean they were ‘co-teaching’.

The collective observations of co-teachers in 15-30 minute intervals provided evidence of the strength of the collaborative relationships and evidence of whether parity existed between the two educators. Notes reflected on co-teaching and if it was about the intensity or differentiation of instruction. Notes revealed that it was about instruction that

was designed and implemented to meet individual, small group and large group needs. Co-teaching was about collaboration, communication, and partnerships. Co-teaching was about developing a classroom culture and community in which all students were valued and included. Co-teaching provided a way for two educators to create a classroom environment that made the general education curriculum and standards accessible to all. Co-teaching was about all students becoming increasingly more successful in achieving their goals. When pairs of educators embraced this co-teaching definition, used the co-teaching approaches, and provided appropriate instruction, then they could say they were co-teaching.

Three recommendations for practice were suggested to address certain aspects of the professional learning models in this study. The recommendations were: (a) modifications to the observation tool (CT TAV-OT); (b) expansion of work with the co-teaching IC Maps; and (c) consideration of additional coaching models.

Two areas were recommended future research. Three studies are suggested for the area taking a deeper look at the professional learning models of observation and coaching. Four studies are suggested for the focus on student achievement.

APPENDIX

APPENDIX A

CO-TEACHING TECHNICAL ASSISTANCE VISIT OBSERVATION TOOL (CT TAV-OT)

APPENDIX A

Co-Teaching Technical Assistance Visit

Date: _____

Place: _____

Teacher 1 _____

Position _____

Teacher 2 _____

Position _____

Time _____ Grade Level _____

Number of Students _____

How often together? _____

How much planning? _____

Which "Approach" used?

observe _____

parallel _____

alternative _____

assist _____

station _____

team _____

other/combination _____

Draw Room Setup:

Notes:

Highlights/Commendations:

(continue on back)

Recommendations:

TA Name: _____

Reach me at: _____

Signed: _____

I will return on: _____

SERC 2009

Notes (continued):

SERC 2009

APPENDIX B

RESULTS BASED ACCOUNTABILITY (RBA) REPORT CARD

APPENDIX B

RBA Program Report Card: State Education Resource Center

Program Purpose: To provide professional development to educators on co-teaching, a service delivery model that includes two professional educators, generally a special education and a general education teacher, sharing classroom space and the responsibility for instruction for all students.

Population Result: SERC's Co-Teaching Initiative contributes to the CT State Department of Education goal that "All Connecticut Learners Succeed and Leave College and Career Ready."

Description: SERC has offered professional development on the topic of Co-Teaching through various statewide sessions and district contracts for the past 18 years. Initially, SERC provided a one-day overview (now entitled *Making A Difference Through Co-Teaching*), with advanced sessions added in subsequent years that focused on planning for co-teaching, differentiated instruction in the co-taught class, and facilitator training. In order to provide more time for collaboration, building of foundational knowledge, and application of content, SERC offered *Making a Difference Through Co-Teaching* as a two-day training for the first time in fall 2011. SERC continues to offer follow-up technical assistance, including classroom observations, debriefs, and facilitated planning sessions. The Co-Teaching Initiative has disseminated a flyer summarizing the co-teaching technical assistance options available for schools and districts looking for on-site professional development.

Performance Measure 1

Number of participants attending the *Making a Difference Through Co-Teaching* professional development session

Story behind the baseline:

Although attendance at SERC's *Making a Difference Through Co-Teaching* has decreased over the years, the demand for this training continues. While enrollment dropped for the fall 2011 session, the depth of the material covered was greater as a result of expanding it to a two-day session. General educators continued to outnumber special education teachers. This may be because special education teachers often co-teach with more than one general education teacher, thus creating a larger number of general educators seeking this type of professional development.

Proposed actions to turn the curve:

- SERC will continue to offer *Making a Difference Through Co-Teaching* as a two-day activity, as early in the school year as possible in order to make the content available to teachers when they begin their co-teaching partnerships.
- To attract more participants, the co-teaching flyer and special invitations advertising specific offerings will continue to be distributed to schools, particularly in urban districts, which have been underrepresented in previous sessions.

Co-Teaching Initiative

Performance Measure 2

Pre- and post-test knowledge gains of participants attending the *Making a Difference Through Co-Teaching* professional development session in fall 2012

Story behind the baseline:

The evaluation for *Making a Difference Through Co-Teaching* included a self-assessment rating of knowledge, which participants completed before and after the session. Through a Likert scale, participants rated their understanding of the four areas emphasized in the training (i.e., Definition of Co-Teaching; Six Approaches to Co-Teaching; Benefits of Co-Teaching; and Importance of Parity in a Co-Teaching Partnership). They reported the greatest growth on the topic of the Six Approaches to Co-Teaching, aligning with results in previous years. They also found the Six Approaches to Co-Teaching most beneficial to their practice, according to responses to the qualitative questions on the evaluation.

Proposed actions to turn the curve:

- Evaluation data will continue to be monitored in order to assess the effectiveness of this professional development activity.
- Thematic analysis of the open-ended responses will be conducted to collect additional feedback on the effectiveness of the training.

(continued)

2012-13

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RBA Program Report Card: State Education Resource Center

Co-Teaching Initiative

Program Purpose: To provide professional development to educators on co-teaching, a service delivery model that includes two professional educators, generally a special education and a general education teacher, sharing classroom space and the responsibility for instruction for all students.

Population Result: SERC's Co-Teaching Initiative contributes to the CT State Department of Education goal that "All Connecticut Learners Succeed and Leave College and Career Ready."

(continued from previous page)

Performance Measure 3

Co-Teaching approaches being utilized during classroom observations

Story behind the baseline:

SERC's in-district contracts have focused on training and providing technical assistance to co-teachers in elementary and secondary settings. Technical assistance has often included classroom visits, with follow-up conference sessions designed to debrief what was observed, provide feedback, and discuss options for next steps. During these sessions, educators have been encouraged to make the most of their partnership and better meet the needs of their students by implementing approaches (e.g., parallel, station, or alternative) that improve teacher-to-student ratios through small group instruction, thus increasing instructional intensity.

Recent years have seen an increase in the use of station, parallel, and alternative teaching, along with greater use of teaming. In many of the observations, more than one approach was used during a class period. In cases in which SERC consultants were able to visit co-taught classes more than once, follow-up observations often revealed use of the approaches mentioned above, with a lower student-

to-teacher ratio, increased instructional intensity, and greater evidence of parity among the co-teachers.

Proposed actions to turn the curve:

- Focus future technical assistance and training on the planning and implementation of parallel, station, and alternative approaches.
- Develop reflective tools (e.g., student surveys, data collection forms, evaluations, planning forms, rubrics, etc.) for teachers to use for assessing the quality of their co-teaching and gathering/comparing data regarding effectiveness of the various co-teaching approaches.
- Include planning forms, resources, and activities on the SERC Web site that support the implementation of the Six Co-Teaching Approaches and reference the Web site in trainings and TA sessions.
- Continue to disseminate the co-teaching flyer to advertise various options for technical assistance as well as statewide co-teaching and other related workshops.

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APPENDIX C

SAMPLE COACHING QUESTIONS

APPENDIX C

Sample Coaching Questions

What went well?

Would you have changed anything about today's lesson?

Was this reflective of your usual co-teaching routine?

What approach did you use? How did you choose it?

How did you group your students?

How did you collaboratively plan your lesson?

What will you do next? Which approach might you use?

If time:

What other approaches have you used and when?

How has your co-teaching partnership developed/changed over the year?

What challenges do you face in implementing co-teaching?

What support is needed?

APPENDIX D

CONNECTICUT CO-TEACHING INNOVATION CONFIGURATION MAP (CT ICMAP)

APPENDIX D

Co-Teaching Innovation Configuration Map

IDEAL				
Co-teachers decide on co-teaching approaches/techniques for all lessons.	All co-teachers jointly decide on co-teaching approaches/techniques for most lessons.	All co-teachers jointly decide on co-teaching approaches/techniques for some lessons.	One teacher decides on co-teaching approaches/techniques for all lessons.	Teachers not using the co-teaching approaches.
Collaboration				
Co-teachers share <u>all</u> classroom responsibilities and information regarding <u>all</u> students. (e.g.: current achievement level, family or medical concerns that impact education, IEP, 504s, modifications and accommodations)	Co-teachers share <u>all</u> classroom responsibilities and most information regarding students.	Co-teachers share <u>all</u> classroom responsibilities and selected information regarding students.	Co-teachers share some classroom responsibilities.	Teachers complete only their role specific responsibilities.
Communication				
Co-teachers interact frequently with each other in meaningful ways.		Co-teachers struggle to interact.		Co-teachers don't recognize the need to interact.
Co-Planning				
Co-teachers meet weekly for a scheduled planning period to discuss and develop co-teaching lesson plans.	Co-teachers meet at least twice a month to discuss and develop co-teaching lesson plans.	Co-teachers meet less than twice a month.	Co-teachers plan through written communication tools.	Co-teachers do not plan together.
Co-teachers come to planning time prepared with information to effectively develop weekly lesson plans.	Co-teachers come to planning time with limited information to develop weekly lesson plans.		One teacher comes prepared with information to develop weekly lesson plans.	Teachers do not prepare for planning time.
Co-teachers make joint decisions regarding roles and responsibilities, approaches, and lesson content.	Co-teachers make limited joint decisions regarding roles and responsibilities, approaches, and lesson content.		Co-teachers make separate decisions regarding roles and responsibilities, approaches, and lesson content.	One teacher makes decisions regarding roles and responsibilities, approaches, and lesson content.
Co-teachers will demonstrate competency and confidence with the curriculum and standards.	Co-teachers work towards demonstration of competency and confidence with the curriculum and standards.		Co-teachers demonstrate limited competency with the curriculum and standards.	Co-teachers demonstrate limited confidence with the curriculum and standards.

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Co-Teaching Innovation Configuration Map

Student Engagement	Co-teachers always select approaches and activities that foster high levels of student engagement through cooperative learning and flexible grouping to meet student needs.	Co-teachers sometimes select approaches and activities that foster high levels of student engagement through cooperative learning and flexible grouping to meet student needs.	Co-teachers select approaches and activities that foster high levels of student engagement limited to small group instruction based on students' ability level (e.g.: bluebirds).	Co-teachers limit student engagement due to utilization of fixed seating (e.g.: rows) and activities designed to be completed independently (e.g.: worksheets).
Physical Space	Co-teachers demonstrate shared ownership of the same physical space and materials.		Co-teachers co-exist in the same space.	One teacher 'controls' the use of space and materials.
Reflective Practice	Co-teachers <u>weekly</u> collect pre/post data, analyze and discuss findings to determine grouping, content to be covered, and co-teaching approach to be used.	Co-teachers collect pre/post data <u>monthly</u> , analyze and discuss findings, and may or may not determine grouping, content, or co-teaching approach.	Co-teachers collect pre/post data <u>quarterly</u> , analyze and discuss findings, and may or may not determine grouping, content, or co-teaching approach.	Co-teachers collect pre/post data <u>bi-annually</u> , analyze and discuss findings but do not change classroom practice.
Assessment	Co-teachers use a variety of assessment methods.		Co-teachers explore the use of a variety of assessment methods.	Co-teachers use traditional assessment methods.
	Co-teachers jointly decide on <u>all</u> forms of assessment and grading for <u>all</u> students.	Co-teachers decide on some forms of assessment and grading for most students.	Each teacher decides on assessment and grading for their specific students.	One teacher decides all forms of assessment and grading for all students.

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Central Connecticut State University, New Britain, CT

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University of Connecticut, Storrs, CT

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Professional Experience

State Education Resource Center, Middletown, CT

Director for Program Development July 2015 - present

Assistant Director for Program Development & LEA Services 2007 - 2015

Consultant 1988 - 2007

Learning Center at The Children's Home of Cromwell, Cromwell, CT

Assistant Director, Diagnostician, Special Education Teacher 1978 - 1987

Professional Memberships

- Association for Supervision and Curriculum Development (ASCD)
 - Council for Exceptional Children (CEC)
 - Learning Forward
 - National School Reform Faculty (NSRF)
 - Strategic Instruction Model (SIM) Trainers Network at The Center for Research on Learning at the University of Kansas (KU-CRL)
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Honors and Commendations

SIM Leadership Award

Connecticut Certification

- 092 Intermediate Administrator and Supervisor
- 065 Comprehensive Special Education, PreK – 12
- 046 Vocational Home Economics, PreK – 12