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Crossing the Special-General Education Divide at the Post-Secondary Level:
Observations and Outcomes of Co-Teaching across Curricula

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of
Philosophy in Special Education

by

Talya Louise Drescher

2015

ABSTRACT OF THE DISSERTATION

Crossing the Special-General Education Divide at the Post-Secondary Level:
Observations and Outcomes of Co-Teaching across Curricula

By

Talya Louise Drescher

Doctor of Philosophy in Special Education

University of California, Los Angeles, 2015

Professor Sandra Graham, Chair

This dissertation contains two case studies aimed at expanding the body of literature on the topic of collaborative teaching in pre-service education programs designed to prepare general and special education teachers in collaboratively taught courses. The intention of the study was to document the process of preparing for and teaching collaborative education courses, and to determine students' perception of collaboration, inclusion and disability knowledge as a result of taking the course. Two different sessions (Study 1 and Study 2) of collaborative teaching run by different pairs of teachers were each studied over a 10-week quarter at a large public university. Multiple sources of data were collected over the 10 week quarters, including observations, focus groups, document review, and pre- and post-course survey responses.

Study 1 professors largely demonstrated the “one teach, one assist” method of collaborative teaching, most often delivering lectures independent of one another. Study 2

professors meticulously planned each session before class to model co-teaching and utilize the infusion method of teaching collaboration and disability for six shorter segments during the 10 week quarter.

Qualitative findings suggest that there are positive student outcomes regardless of collaborative model utilized. Benefits include an opportunity for students to witness professors modeling collaboration; a practice required of many general and special educators to include children with disabilities in general education classes, and an opportunity often missing in pre-service programs. By using the infusion model of teaching disability as modeled in Study 2, positive outcomes increased further. Quantitative findings demonstrated significantly increased knowledge of disability for Study 2 general education participants. Additionally, qualitative findings show among Study 2 participants, a greater willingness to collaborate with peers in class and in the workplace.

Ultimately, modeling collaboration and a positive attitude toward disability, collaboration, and inclusion provides professors an opportunity to help guide and shape pre-service teachers' attitudes toward collaboration. Additionally, the infusion model of teaching disability shows great promise for providing disability knowledge to general education pre-service students who may otherwise receive minimal disability related coursework.

The dissertation of Talya Louise Drescher is approved.

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2015

DEDICATION

To Florian.

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Introduction

The past fifty years have seen dramatic shifts in our nation's approach to the delivery of special education services. Integration of students with special needs into general education classrooms has become the norm rather than the exception. With this shift in policy and expectation for academic service delivery in general education classrooms, it is essential that educators work together to ensure the best possible academic and social outcomes for all students.

Despite decades-old laws and educational philosophies that support inclusive education for school-aged children in primary and secondary schools, pre-service teacher training models generally provide little to no training to support or model collaborative relationships between general and special educators who are charged with educating a diverse population of students in included classrooms. Little is known about the best practices for preparing pre-service educators for professional collaborative relationships. This contributes to attitudinal barriers (e.g. a belief that included students detract from the learning of their peers) and institutional barriers for both pre- and in-service teachers (e.g. a lack of administrative support), which further complicates successful implementation of in-service collaboration and consequently prohibits optimal learning for students. Findings from empirical research indicate that pre-service educators lack both experiences and coursework that would prepare them for the professional collaboration and effective service delivery to students of varying abilities (Arndt & Liles, 2010; Orr, 2009; Richards & Clough, 2004; Silverman, 2007). Deficits in pre-service programs must be addressed by incorporating innovative methods for teaching the process of effective collaboration to help practitioners make a smooth transition to the workplace.

Despite the importance of documenting shifting models for educating children with special needs and best practices for pre-service and ongoing teacher education, relatively little literature exists to chronicle attempts at effectively addressing problems with inclusion in post-secondary settings. Although the field of education faces ongoing changes to the law, methods of including children with disabilities into general education classrooms should be explored and compared to gain better insight into best practices both in the classroom and in the programs that prepare educators for the classroom. The purpose of this dissertation is to add to the body of literature addressing teacher education models aimed at improving inclusion education, and ultimately, to document the effectiveness of collaborative models in cross-curricular, post-secondary education classrooms.

Review of Collaboration Literature

Current law dictates the academic placement of children with disabilities, forcing a shift in service delivery models. Children with disabilities who were once historically segregated or pulled out of classes for specialized instruction now must attend the same classes alongside their typically developing peers. With the influx of students with disabilities in general education classrooms, collaborative models of teaching were developed and employed so special and general educators could work together in order to provide academic content to all students. The following sections explain the legal mandates that determined the current state of education for students with disabilities which ultimately led to the development of different instructional delivery models.

Legal Mandates for Inclusion of Students with Disabilities

The idea that segregated learning environments deprive students with disabilities of equal rights formed the basis for federal legislation designed to integrate the learning environments of

general and special education students. Prior to the 1960s, it was common for students with disabilities to receive services in facilities separate from those utilized by the general education population (Lakin, Krantz, Bruininks, Clumpner, & Hill, 1982; Reynolds, 1989). Although some students with disabilities attended school alongside their general education peers, services within those schools were typically provided through a system that was altogether separate from the general education system (Reynolds, 1989). By the mid-1970s, the principle of *least restrictive environment* (LRE), which calls for children with disabilities to be educated with nondisabled peers to the greatest extent possible, emerged as part of Public Law 94-142, or the Education of all Handicapped Children Act (EAHCA) of 1975. EAHCA was the first law that governed the educational placement for students with disabilities stating that all children are entitled to a free and appropriate public education (Gartner & Lipsky, 1998). In effect, EAHCA, similar to the preceding *Brown v. Board of Education* of 1954, desegregated the schools—not based on race, but ability. This movement toward inclusion intensified over the subsequent decade as educators, academicians, and policymakers amplified appeals for accommodation of students with special needs within the general education population. Twenty-two years later, in 1997, EAHCA was reauthorized (called *Individuals with Disabilities Education Act*) to include stronger provisions for inclusive education. Specifically, the new law mandated that a general education teacher must be present at a child’s Individualized Education Plan (IEP) meeting to discuss the child’s progress and access of the general education curriculum (IDEA, 1997). An even stronger push for inclusion corresponded with the passage of No Child Left Behind Act of 2001 (NCLB), which mandates that all students be regularly assessed on established state standards in reading and math, making sure that yearly progress is made based on results. Students with IEPs would now be held to the same academic standards as the general education

population. NCLB also directed that all students receive instruction from teachers who are “highly qualified” to teach within their content area.

These new mandates served as the impetus for dramatic shifts in the way that special education services are delivered. In order to ensure that students with IEPs could access the content needed to meet rigorous academic standards, it became critically important that students with disabilities be included in general education classes (Bouck, 2007). Moreover, the requirement that all students receive instruction from “highly qualified” teachers implied that special educators could no longer function as any student’s main source of content-area instruction unless the special educators were highly qualified in their subject area. Consequently, students with IEPs were placed in classrooms where a general educator could provide the bulk of educational services. As a result of the change in law, the number of students who receive portions, if not all, of their academic instruction by general educators while special educators provide academic or consultative support continues to grow. According to the National Center for Disabilities (Cortiella, 2011), 62% of students with learning disabilities spend at least 80% of the school day in general education classrooms.

Despite the increase of inclusion and progressive nature of the law, some teachers continue to hold unfavorable views of people with disabilities (Avramidis & Norwich, 2002). Validation of negative attitudes towards people with disabilities may come from the medical model, which focuses on inabilities rather than abilities (Barton, 1992; Sarason & Doris, 1979). In the earliest stage of development of the medical model, the World Health Organization (WHO) published a framework for understanding and working with disabilities called the *International Classification of Impairments, Disabilities and Handicaps*, which provides an early yet pervasive definition of disability (WHO, 1980). In the framework, disability is defined in

terms that suggest limitation, abnormality, and disadvantaged condition; a set of characteristics that lends itself to negative views of disability and implies the need for support from the medical community. Because teachers relate to students with special needs through the lens of their personal experiences with disability, as well as how disability is defined by society, educational organizations continue to propagate the negative views of disability validated by the WHO (Brownlee & Carrington, 2000). Unfortunately, negative views of disability can contribute to a teaching environment unwelcoming to special educators and the children they serve; this in turn, may lead to resistance of general educators to invest time and energy into collaborative relationships, while also undermining the success of students with special needs.

Nonetheless, today, dominant educational philosophies and national policy are unified in their support for inclusion, and the debate concerning whether students with special needs should be educated together with their general education peers has subsided. In its place, new conversations have emerged regarding best practices for the delivery of inclusion services via collaborative teaching models and how to prepare teachers for implementing these practices.

Types of Collaboration Models

The passage of NCLB in 2001 included two foci which led to the development and push for the use of collaborative models. The first required that all students have access to the general education curriculum, including students with disabilities; the second mandated that all teachers be highly qualified in the content area they teach. Including students with disabilities in general education classrooms being collaboratively taught by special and general educators satisfied the demands of NCLB. The need for innovative methods for accomplishing this goal resulted in six widely accepted models for collaboration suggested by Friend, Cook, Hurley-Chamberlain & Shamberger (2010). *One teach, one observe* involves one teacher teaching a lesson while the

other observes and collects data on the class or a group of students. *Station teaching* involves the students being split into three groups with each teacher leading one group, while students in the third group work independently. In a *parallel teaching* scenario, two groups of students, each led by one teacher, are presented the same material in smaller groups. *Alternative teaching* is used when one teacher pulls a small group of students for intensive learning while the other instructs the large group simultaneously. The *one teach one assist* model involves one teacher instructing the class while the other circulates around the room assisting individual students. Lastly, *teaming* or *co-teaching* means that a special education service provider is paired with a general educator to collaboratively plan and deliver instruction to all students, specifically aiming to meet the learning needs of a heterogeneous learning population. In this model, the special and general educators are viewed as equal and share responsibilities (e.g. grading, planning, and teaching) for all students.

While the six models of collaboration are distinct from one another, depending on the needs of a lesson or group of students, they may be used interchangeably. Prepared and willing collaborative teachers know their students' needs in relation to content material and are able to assess and implement the most appropriate model for the situation at hand. The fluidity in usage of various models, while effective, may be underutilized as primary and secondary in-service teachers report lack of training and knowledge about collaboration which, in some cases, results in poor attitude towards professional collaboration and inclusion (Orr, 2009).

Primary and Secondary School Collaboration

In-service collaboration in K-12 schools face difficulties not entirely dissimilar from those found in post-secondary institutions. Research on collaboration in primary and secondary schools has identified several factors that contribute to successful collaborative partnerships that

include: administrative support, need for a positive attitude toward disability, inclusion, and collaboration, and training in the form of ongoing professional development.

Professional support. An effective collaborative program in primary and secondary schools require administrative support in order for educators to practice collaboration and inclusion (Frisk, 2004; Salend, Johansen, Mumper, Chase, Pike & Dorney, 1997). Two of the main reported needs are common planning time and ongoing training to keep current with innovate and effective collaborative practices.

Common planning time. One aspect of administrative support cited as missing is respect for common planning time, a frequently cited need for effective collaboration (Buckley, 2005; Yoder, 2000). Administrative approval and support for planning time within the structure of the school day acknowledges the importance of collaboration efforts by providing the two teachers paid time to ensure their course is taught (and inclusion implemented) seamlessly. A joint conference period would allow collaborating educators the time to plan instruction and assessment, discuss appropriate models of collaboration for upcoming lessons, and allow for the development of a balanced professional relationship.

Ongoing training. Due to lack of adequate pre-service training, continued and effective collaboration training in the form of professional development is also noted as a necessity for successful inclusion, as in-service teachers largely feel unprepared for the task at hand (Buckley, 2005; Rice & Zigmond, 2000; Walther-Thomas, 1997). In one study, 93% of surveyed in-service teachers indicated that their inclusive and/or collaborative training was insufficient (Forlin, Keen, & Barrett, 2008), showing that as teachers gain more knowledge and experience throughout their education and work experience, their perceived deficits become apparent (Costello & Boyle, 2013). Teachers' desires for more effective training include the need to

develop abilities such as effective communication skills and optimizing planning for students with diverse needs. In-service teachers who lack knowledge about disability pose a barrier to the inclusion movement, as knowledge about inclusion and disability is known to be positively correlated with favorable attitudes and beliefs about inclusion (Varcoe & Boyle, 2013; Burke & Sutherland, 2004) further impressing the importance of continued education for in-service teachers and administrators.

Attitude of in-service teachers. While the literature of the impact of pre-service attitude toward collaboration and inclusion is relatively small compared to that of in-service teachers, research indicates that in-service teachers who are negative or apprehensive toward inclusion may behave in ways that inadvertently exclude children with special needs from learning opportunities (Sharma, Forlin, & Loreman: 2008).

In a study by Orr (2009), researchers note that general educators and administrators tend to hold negative attitudes toward collaboration and inclusion. The issue of negativity was also of note in a study by Fulk and Hirth (1994), as many teachers in their study reported feeling that inclusion was “forced” upon them. To further illustrate the point, only half of sample teachers reported being supportive of including students with special needs in the general education setting and one-third stated that they were against inclusion altogether. Similar findings from Monahan (1996) and Siegel and Moore (1994) found that almost two-thirds of general educators were resistant to inclusion.

Research on attitudes about inclusion and collaboration shows that the bulk of concerns raised by in-service teachers stem from feeling that they did not receive adequate preparation in their pre-service program (academic and practical) (Orr, 2009). These negative findings regarding attitude toward inclusion are of particular importance as researchers report that attitude

toward inclusion is just as important as teaching skill and content knowledge in determining implementation of high quality inclusive teaching practices for both pre- and, ultimately, in-service teachers (Coates, 1989; Cook, 2002; Forlin, Loreman, Sharma, & Earle, 2007; Semmel, Abernathy, Butera, & Lesar, 1991; Sharma, Forlin, Loreman & Earle, 2006; Sharma, Loreman, & Forlin, 2007).

Education literature shows that the impact of attitude and other barriers greatly impact the successful collaboration among educators and inclusion of students with disabilities in general education classrooms. Understanding what we know about primary and secondary school collaboration, it is surprising to find relatively little research at the post-secondary level.

Post-Secondary Collaboration

The research on primary and secondary collaboration shows the importance of administrative support, ongoing training, and the challenges of negative attitudes. At the root of the problem, pre- and in-service teachers lack opportunities to learn about and observe collaboration techniques before they must implement them in their own practice largely due to the continued use of traditional university teaching methods. Research demonstrates that with specific training in inclusive and collaborative practices, self-efficacy increases, thereby improving attitude and disposition toward these practices (Leyser, Zeiger, & Romi, 2011). A perceived lack of adequate training then may negatively impact attitude toward collaboration and inclusion. Consequently, education literature shows that the impact of attitude and other barriers greatly impact the successful collaboration among educators and inclusion of students with disabilities in general education classrooms. Despite the promise of collaboration models and what we know about the literature in primary and secondary schools, we know very little about methods for improving outcomes for future and current educators. Pre-service and continued

education programs are prime settings for observing, learning and practicing collaboration skills, however, little research has been done to determine best practices for implementation of programs to teach these skills to students in pre-service programs.

Pre-service student attitude. The literature suggests that both pre-service general and special educators have concerns and negative attitudes about collaborating and including students with special needs into general education classes due to a lack of adequate preparation and common professional working knowledge (Adrndt & Liles, 2010). Other new teachers' concerns center on their implementation of a collaboration model: they are "excited about the potential of co-teaching, but felt ill prepared to participate" (Orr, 2009, p. 232) because they did not take classes or have practical experiences in collaboration prior to their hired teaching experience (Orr, 2009). This lack of confidence is problematic, as both parties are increasingly asked to collaborate in the workforce. Real or perceived lack of collaboration skill and experience is concerning because, a positive attitude toward collaboration is necessary in order to have an effective inclusion program; all educators, regardless of certification, must regard one another as equal participants, with all parties effectively trained and ready to teach all students (Silverman, 2007).

Gaps in knowledge and negative attitudes prevent effective collaboration instruction and training in post-secondary institutions. It is important to examine knowledge and attitudinal barriers in order for pre-service teachers to gain necessary skills and confidence throughout the duration of their training programs. Teacher noted problems include failure to train teachers on collaborative lesson planning, differentiation of instruction, poor attitudes toward inclusion (Brinkmann & Twiford, 2012; Burstein, Czech, Kretschmer, Lombardi & Smith, 2009).

Implications of this research are that, in the wake of changing laws and educational needs, a need

exists to examine current practices in pre-service teaching programs that may help in determining where changes need to be made in order to adequately prepare teachers for inclusionary practices, including professional collaboration. Why not evaluate current requirements for preparation programs, find and exploit overlap between general and special education programs, and integrate key components? Pre-service and continuing education teachers in general and special education programs taking courses together might foster discussion and respect that may later bleed into professional practice. By merging coursework to the greatest extent possible and increasing knowledge of inclusionary practices, attitudes are likely to improve (Forlin & Chambers, 2011). As a result, new teachers will be prepared to collaborate in an effort to teach all students with varying abilities in their chosen curricular area, and feel competent in doing so.

Professor attitude. While the body of literature addressing professor attitude towards collaboration in their classrooms is relatively small, one study found that post-secondary collaborative teaching has the potential to create stress for professors because the new teaching scenario requires flexibility, logistic challenges of sharing a classroom, and an unforeseen increase in time demands (Waters and Burcroff; 2007). To further complicate matters, universities may not be prepared to handle the policy shift that must occur to accommodate new models of teaching, namely, methods of evaluation, effect on promotion or tenure, and the ability to conveniently schedule classes to suit the needs of two professors rather than one (Graziano & Navarrete, 2012; Kluth & Straut, 2003). Such barriers to implementation may be driving hidden and unexamined forces that contribute to professor resistance to changing current pre-service models, which may, in turn, negatively impact their attitude toward utilizing collaboration models.

Effect of barriers. Institutional barriers such as scheduling, grading policies and program requirements affect the way professors view collaboration and ultimately, how students receive training in collaboration and disability. During pre-service training at post-secondary institutions, existing institutional barriers that are unique to the college or university setting complicate the implementation of collaboration models. These include issues with university policies and procedures, such as methods for interpreting co-taught course evaluation, weighting of professor course load when one or more courses is co-taught, practices for promotion or tenure as well as effective use of resources, program requirements, and scheduling classes (Graziano & Navarrete, 2012; Kluth & Straut, 2003). Particularly impactful during difficult economic times is the question of effective use of resources. Graziano and Navarrete (2012) question whether collaborating is prudent in terms of budget effectiveness, which may limit opportunities or reduce the pay of those who do participate. Institutional barriers, real or perceived, have the potential to alter professors' attitudes toward the creation and implementation of innovative models of teaching, possibly resulting in reliance on old, outdated teaching methods.

Shaping teachers' knowledge and attitudes through modeling of collaboration.

Professors have the ability to impact the knowledge and attitudes of pre-service teachers through the modeling of attitude and their own collaborative practices, yet little research examines best practices for simultaneously increasing knowledge and attitude by modeling best practices in collaboratively taught university courses.

Professor modeling attitude. Pre-service education provides an opportunity to help shape the attitudes and academic experiences of developing teachers, which has the potential to deter negative attitudes about collaboration and inclusion. We must acknowledge the ability to

form or shift attitudes of pre-service teachers as a result of preparation well before they enter their own classroom, particularly as it is suggested that the success of inclusion is dependent on pre-service teachers' positive attitudes (Sharma, Ee, & Desai, 2003). Furthermore, multiple studies have found that pre-service teachers who express positive attitudes are more likely to support students with special needs and positively influence other students' attitudes towards children with special needs once they become in-service teachers (Avramidis, Bayliss & Burden, 2000; Sharma et al., 2006; Subban & Sharma, 2005). Attitudinal training must be implemented early on in pre-service education, particularly because students' attitudes toward inclusion have been shown to decline after their first year (Costello & Boyle, 2013). Like students in K-12 schools, pre-service educators are influenced by their professors and coursework (Alghazo, Dodeen & Algaryouti, 2003). The attitudes of pre-service and practicing teachers toward students with special needs, combined with the amount of education, experience and academic preparation they receive in teaching students with disabilities, will determine the success of inclusion in the school setting/once these teachers have classrooms of their own (Forlin, 2003; Lancaster & Bain, 2010; Richards & Clough, 2004; Wilczenski, 1991).

Professors modeling collaboration. A very small body of literature exists documenting the perspectives of collaborating professors who come from different departments within education. A recent paper by Hansen and Morrow (2012) discusses how they developed and co-taught a course for in-service teachers and administrators on the inclusion of children with special needs in general education classrooms. In reflecting on the teaching of the curriculum, over time, the professors noted that their devotion to the course enabled them to learn one another's material, creating a more fluid class structure promoting the idea of respect across content areas. They noted that at the end of the course students were willing to explore concepts

previously foreign to them and immerse themselves in the content, perhaps as a result of watching their professors model the same behavior. Professors modeling professional collaboration and executing meticulously co-planned and delivered lessons opened the door for students to gain knowledge about collaboration, communication, and co-teaching all the while accessing academic content. In this post-secondary classroom, knowledge was gained on multiple fronts.

Passing on knowledge. Current research suggests that pre-service programs are not moving fast enough to keep up with the changing educational tide; as a result, many certificated teachers feel that they lack knowledge that ideally should have been gained during pre-service training. In one study, a positive relationship was found between the number of courses taken during pre-service training that address disability and teachers' favorable attitudes toward inclusion and disability (Bender, Vail, & Scott, 1995). Despite efforts of some pre-service programs to integrate one mandated class on disability, general education pre-service teachers who took a single course on disability did not feel adequately prepared to teach children with disabilities in their classes, indicating that one survey class is not enough (Arndt & Liles, 2010; McCray, 2004). General education training programs that neglect topics on inclusive practices may ultimately be a cause of anxiety and stress when it comes to inclusion expectations for teacher candidates; findings indicate that pre-service teachers who are seeking general education credentials have higher levels of anxiety than either dual or special education credential candidates as they anticipate having children with special needs in their classes (Shippen, Crites, Houchins, Ramsey, & Simon, 2005) which may in turn affect their attitude towards students with disabilities and the collaboration needed to include them.

Knowing that inclusion is a workplace reality, pre-service teachers have indicated a desire for more information and training in curricular planning and making accommodations (Lancaster & Bain, 2007; Symeonidou & Phtiaka, 2009). Since research findings demonstrate that the pedagogy and content of a pre-service program are the most significant predictors of pre-service teachers' attitudes, beliefs, and concerns about working with children with special needs in the general education setting (Sharma, Forlin & Loreman, 2008; Varcoe & Boyle, 2013) we must explore non-traditional models of pre-service education which may or may not be utilized alongside collaboration models.

Infusion Model. Various approaches exist for incorporating information about learners with special needs into the coursework of pre-service general educators. For example, in the “infusion approach” coursework and field experiences are peppered with relevant disability-related topics as opposed to having a single course that addresses the topics of disability and inclusion (Cameron & Cook, 2007). Implementation of this model is relatively straightforward because, instead of being replaced, existing program structures need only be modified to include new content relevant to disability and inclusion (Strawderman & Lindsey, 2005; Voltz, 2003). Teacher education researchers note that this approach is particularly powerful as special education issues are presented alongside general education topics, thereby equalizing the two fields and effectively removing perceived barriers between the two (Voltz, 2003). Research shows that, compared to pre-service teachers in other types of programs, those who received instruction under the infusion model endorse more positive beliefs about inclusion and disability (Cameron & Cook, 2007). In addition, teachers exposed to the infusion approach are more likely to express the opinion that planning and instruction should be adapted to meet the needs of children with disabilities (Cameron & Cook, 2007). Thus, it appears that, in addition to

increasing pre-service educators' knowledge of how to work with children who have special needs, the infusion approach may also improve their attitudes regarding inclusion and collaboration.

Shared coursework. In an effort to simulate in-service collaboration, creative methods have been utilized to allow pre-service general and special education teachers the opportunity to take courses together. In a combined or collaborative course, special and general pre-service hopefuls might be paired to complete assignments with requirements including both perspectives on the same topic. When people take classes and work together, and do so from the beginning of pre-service training, they may be more likely to foster a mutual respect and learn to draw on each other's strengths in a manner that would ideally continue into professional practice.

Studies show that, once certificated, teachers who have completed coursework that has been aimed at positively changing attitudes and beliefs about inclusive education are more supportive of students with special needs than their colleagues who did not receive specialized instruction (Carroll, Forlin, & Jobling, 2003; Lancaster & Bain, 2010; Shade & Stewart, 2001). Other studies show that teachers' attitudes can be positively influenced by pre-service and continuing education experiences ranging in time from a 10 week course to a nine month course experience (Carroll et al., 2003; Henning & Mitchell, 2002; Hutchinson & Martin, 1999; Leyser, 1988; Shade & Stewart, 2001). These findings are encouraging because they show that specialized instruction can alter beliefs, within both limited and extended time frames. Despite this knowledge, pre-service programs that prepare general education and special education teachers for the classroom often still operate as they did prior to current laws and prior to the shift in service delivery expectation, failing to properly prepare teachers for professional collaboration or inclusion.

The Current Study

Considering the importance of the role of “educator,” we must look at the components of teacher preparation programs that train candidates in a time of shifting roles due to changes in the law and social climate. This topic is of vast importance because students—particularly those with disabilities—are suffering the short- and long-term consequences of inadequate teacher preparation systems. While the California Teaching Commission requires a standard that addresses collaboration for special educators, GE programs do not. Even with such requirements in place, universities such as the one in this study do in fact include a course on collaboration, but it is a course comprised only of pre-service special educators. Unfortunately, GE students have commented that professional collaboration is not explicitly taught, and in the case of SPE students, taught in isolation of other GE pre-service teachers, despite the expectations of such practice in the field. In order to examine possible solutions to this problem, I conducted a study observing the effects of two collaboratively taught university education courses, examining how pre-service and continuing teacher education may become a shared experience that prepares professionals to work together to help educate all children.

In an effort to address inadequacies in teacher preparation programs, a large public state university (for the purposes of this paper, called SU) is bridging the gap by offering collaboratively taught classes across disciplines within the College of Education (College). Two case studies have been prepared with data from two unique collaborative courses that comprise Study 1 and Study 2. The goal of this dissertation study, utilizing largely qualitative measures, is to document the implementation of a collaborative course and the possible effects of participating in the course on the enrolled students. Through classroom observations, student surveys, focus groups, and document reviews, data were collected over 10 week quarters in two

collaborative classrooms at SU in order to answer the following questions: What do collaborative or co-taught classes look like in the College and SU? Does a collaborative model have an effect on education students' attitudes or beliefs about inclusion and collaboration? What are student perceptions of their collaborating professors, their classmates, and the execution of the course?

Method

Context

This study was made possible as a result of a competitive grant provided by The College to professors who are interested in co-teaching graduate and undergraduate courses across educational disciplines. The purpose of the grant was to foster collaboration among professors within The College in an effort to maximize student enrollment in education courses while also promoting innovative instruction. Upon completion of the course, winning professors were required to evaluate the outcomes of their collaborative course and report their findings to The College. The opportunity to apply for this grant was offered during two different academic quarters during the timeframe of this study. Of the applicants for this grant in each application period, one professor who teaches in the division of Special Education and one professor from a non-special education division within The College agreed to teach a course grounded in the collaborative model. Accordingly, the broad goal of this collaboration was to create innovative courses that bridge the historically distinct fields of general and special education.

SU is located in a large urban center with approximately 23,000 graduate and undergraduate full and part-time students. The College is a large division within the university offering both undergraduate and graduate degrees and certificates in education with an enrollment of approximately 1700 students. Courses typically run for ten consecutive weeks with one week at the end of the quarter reserved for final examinations. Courses offered

through the College generally fulfill requirements towards the completion of a Bachelor's degree, teaching credential, or Master's degree in an education related field (e.g. Special Education, Single Subject Credential, Curriculum and Instruction, etc.). Certificate and graduate classes in the College are offered in the evenings between 4:20 and 8:10pm. One half hour per evening is typically reserved for a break.

Enrollment in the observed courses included students pursuing undergraduate and graduate degrees within various fields of education. During the university enrollment period, they were not informed by the researcher, university or the professors that these courses were going to be collaborative, nor did they have prior knowledge of the study. Data collection took place over the course of two 10 week quarters at SU. Study 1 was conducted during Spring Quarter and Study 2 during Winter Quarter of the following year. All data collection sessions took place during class time. Institutional Review Board approval was granted to study both collaborative classes offered through the College at SU.

Despite the fact Study 1 and 2 courses were housed within the College and were recipients of the same funding source, there were contextual differences worth noting.

Study 1. Because the university registrar created the courses prior to the decision to merge the two courses, two separate courses with unique course identification numbers were created for enrollment which resulted in the assignment of different rooms. Fortunately, both courses were scheduled to meet on the same day of the week and during the same timeframe.

The catalogue description of the GE course described the learning goals of the course as, "Instructional strategies bridging preschool and kindergarten in diverse urban settings, including theoretical frameworks, first and second language and literacy acquisition and authentic assessment practices." The GE course is an undergraduate course that may be applied toward a

master's degree. There are no pre-requisites listed as enrollment requirements for acceptance into this course.

The catalogue description of the SPE course include as goals of the course, "Curriculum and evidence-based practices which will enable early childhood special educators to provide a sound foundation for literacy in young children with disabilities and those at risk for reading problems." This course is an undergraduate class that may be applied toward a master's degree. The course included two departmental pre-requisites; Foundations of Special Education and Cognitive, Linguistic and Literacy Processes in Individuals with Special Needs.

The courses were listed in the university schedule of classes under different departments within education, with unique classroom assignments, and only one name listed as the professor for each course. Both courses are required for some certificates and/or credentials within their respective programs, although students in and outside the department had the option to take the course as an elective. Overall, students came from a variety of disciplines, largely within the general and special education departments.

On the first night of class, students enrolled in the SPE class found a note on the door of their classroom indicating a room change. The new classroom was in fact the pre-determined GE classroom. In this way, the students from two classes were merged into one group. Over the course of the quarter, students were placed into groups for discussion and assignments, most often done by the professors. The professors also created the focus groups; three students in each group came from the GE class and three from SPE. Students were permitted to sit wherever they liked at the beginning of class, but during group work, they were compelled to mix across disciplines.

The goal for Study 1 was to help evaluate the effectiveness of the collaborative models employed by the professors. Ultimately, Study 1 helped inform Study 2.

Study 2. Similar to Study 1, Study 2 courses were created by the registrar ahead of the decision to merge two courses together for collaborative purposes. Unfortunately the two classes were scheduled on different nights. The GE professor was originally scheduled to teach two sections of the same class, one of which was scheduled for the same night as the SPE class. Due to low enrollment, the GE section that met on the same night as the SPE class was closed. When brought to the attention of the collaborating professors, they decided to continue to plan for a collaborative class by finding overlapping content in the two classes, and collaboratively teach the related material during a portion of each week's class. In doing so, the professors devised an alternative method of bringing the students together in order to facilitate a collaborative teaching experience. They did do so by asking students to attend class on nights they would not have otherwise been on campus in addition to their regularly scheduled classes. If students wished they may attend the other class for the first half of lecture to experience the collaborative teaching model; the second half of each lecture period would be course specific and reserved for course specific material. In order to introduce and explain the format of the class, during the first class meeting, the off-night professor attended the other professor's first class to introduce herself, jointly explain the schedule and process of joint meetings, and, ultimately, welcome students to the joint sessions during the quarter. In reality, the students would not meet each other until the third week of the quarter, and only then, students who had time in their schedule and wished to attend the joint sessions would do so.

Both courses were listed in the schedule of classes under different departments with only one name listed as the professor. Students enrolled without knowing this would be a

collaboratively taught class with the opportunity to attend joint sessions. The GE students were part of a cohort earning secondary teaching credentials. The SPE students came from various interests within special education although the course is a requirement for most credentials, degrees, and certificates within the division of special education.

The catalogue description of the GE course described the learning goals of the course as, “Understanding of dimensions of school culture in curriculum and instruction. Using school culture information to develop and deliver curriculum and assessment. Observation and participation in secondary schools.” The GE course is an undergraduate course that may be applied toward a master’s degree. There are multiple pre-requisites listed as enrollment requirements for acceptance into this course including: Schooling for a Diverse, Urban Society, Instructional Strategies in Secondary Teaching, Classroom Management in Secondary Schools, Literacy in Middle and High School Content Classrooms, Using ESL Techniques in the Content Area, and Learning Environments and Instruction in Secondary Schools. Students taking the collaborative course were also concurrently taking a course on instructional methods for the subject of their concentration (i.e., Mathematics or Science). All of these courses are requirements to earn a GE secondary education teaching credential.

The catalogue description of the SPE course include as goals of the course, “Theories and sequences of cognitive, linguistic, and literacy development Impact of disabilities and culture; informal techniques of assessment of communication skills.” This course is an undergraduate class that may be applied toward a master’s degree. There are no pre-requisites listed as required for enrolling in this course.

Aside from this unique collaborative learning experience, students were told they would be compensated for their time if they volunteered to attend joint sessions. GE students who

participated in joint sessions in the SPE class were allowed an absence without penalty; SPE students were given two elective university credits in addition to the credits earned for successful course completion. Due to the nature of the joint sessions, data collection only took place during the first and last session of each course and during the joint sessions (i.e. the first hour of instruction) throughout the quarter at SU.

Participating professors received a stipend from the College by offering and teaching a collaborative course. All four professors had to teach content specific to their department academic standards but the mechanism for doing so differed between the two teaching dyads. Study 1 professors had the benefit of meeting together for each class period throughout the quarter, enabling them to truly merge two courses into one. Material was split among the professors and students benefited from effectively having access to two courses and two expert opinions in one time slot. Study 2 professors faced scheduling complications that did not allow for such an ideal collaboration. Due to mismatched time slots for class students and professors had to give up free time to reap the benefits of the collaboration. Material could not be divided up and presented as in Study 1; professors had to find overlapping content to present during their joint time together while simultaneously preparing for their own unique courses. As in Study 1, students benefitted from having two professors, but only those who could accommodate the scheduling imposition and attended both classes realized the full advantage.

Participants

Participants for both studies included university professors and teacher education students. The following section describes the professors for both studies. Following that, you will find a discussion of the student participants for both study 1 and 2.

Professors. Study 1 and Study 2 each had two collaborating professors. Study 1 professors were Professors Chris (Chris) and Anne (Anne) (pseudonyms). Chris is a tenured Professor who teaches in the division of Special Education within the College. She has 28 years of teaching experience in the College at SU. Anne is a tenured Professor with 13 years of teaching experience in a non-Special Education department within the College. The aim of Chris's courses is to prepare pre-service and Master's level students to work with atypically developing children, while Anne prepares students to work with typically developing children. Historically, Chris and Anne taught courses in their respective departments on early childhood development and related topics. Chris and Anne have distinct teaching backgrounds in the areas of special education and general education, respectively.

Study 2 professors were Professors Sasha (Sasha) and Quinn (Quinn) (also pseudonyms). Sasha is a temporary, full-time non-tenure track faculty member who teaches in the division of Special Education. She has over eight years of teaching experience within the college settings, with two years of teaching English abroad, four years teaching part-time and two years full-time at SU. Quinn is an Associate tenure-track Professor with six years of teaching experience in a non-Special Education division in the College. The aim of Sasha's courses is to prepare pre-service and Master's level students to work with atypically developing children, while Quinn prepares students to work with typically developing children. Both Sasha and Quinn have teaching backgrounds that include teaching children with and without disabilities. Additionally, in a previous term, Sasha and Quinn applied for and won a grant to collaboratively teach a course at SU.

Students.

Demographic information, including gender and self-reported ethnicity of students in the Study 1 and Study 2 are presented in Tables 1 and 2.

Study 1. Twenty-three students were originally enrolled in the course and consented to participate in Study 1 but only 22 students completed the measures. The one student who did not complete the measures was a GE student. Twelve of the remaining participants were seeking degrees or credentials from the division of Special Education; the remaining 10 were seeking degrees or credentials in non-special education fields within the College (e.g., Early Childhood Education, Curriculum and Instruction, etc.). All SPE participants self-reported teaching experience at the time of the study and worked in a classroom for a more than one year. Of the GE participants, one reported being a teacher, four were assistants, one was both, and four worked in other professions altogether.

Study 2. Forty-nine students were originally enrolled in the Study 2 courses; 41 consented to participate in the study. Of those, 29 participants completed the study measures. Thirteen were seeking degrees or credentials from the division of Special Education and 16 were seeking secondary general education teaching credentials. 17 SPE and 10 GE participants reported some classroom work experience; although more than half of the GE participants noted their required classroom observations for this class as experience. Work experience for SPE participants included classroom teachers or paraprofessionals while six of the GE participants who reported some classroom or school based experience that did not include teachers or classroom assistants.

(Please see Table 1 and 2 for Gender and Ethnic Composition of College of Education Students in Study 1 and 2 respectively, and Table 3 for Study 1 and 2 participant attrition information.)

Procedure

During the first class meetings, students were given an informed consent document to sign and were informed that participation in this study (e.g. surveys, focus groups) is voluntary and that non-participation will not affect their grade in the course. Consent forms were also given to Study 2 professors during this time. Participants were made aware of the purpose of the studies and informed that they may end their participation in the study at any time without repercussion. (See Appendix A for Participant Study Consent Form and Appendix B for Study 2 Professor Study Consent Form).

Once informed consent was received from participants, data collection began. Student participants completed the pre-course survey in the first weeks of the quarter. Focus groups were held in the latter half of the quarters once permission was granted by the professors. The post-course survey was given during the last class sessions. Observations and collection of electronic and paper documents ran the duration of the 10 week courses.

Measures

In order to triangulate data, multiple measures were instituted for comparative analysis in each of the studies. (See Table 4 for Summary of Measures).

Classroom observations. Although protocols exist for documenting observations in the educational setting, they were not appropriate for the unique situation of a co-taught class at the post-secondary level. In order to record observations, objective and subjective field notes were taken during each three and a half hour class session in Study 1 and during the initial, final and joint sessions in Study 2 in the form of a running record. Time was noted in the margin of the record as was the speaker for each event. Objective observations included the timing and

frequency of activities, interactions, and verbatim interactions between professors; subjective notes included my reflection on professor interactions or gestures.

Pre/Post-course survey. Three measures were used in the pre- and post-course survey to assess knowledge of disability, willingness to collaborate to include students with disabilities in GE courses, and attitude towards inclusion. Although teaching about various disabilities, collaboration, and inclusion were not necessarily topics included in the courses, these measures were given to assess whether or not information was imparted as a result of having a specialist in special education and related topics and by being part of a collaboratively taught course. While both studies included lecture designed and given by the SPE professor that discussed disability related content, lectures were not planned to address specific disabilities.

Knowledge of disability. Knowledge of the more commonly included disabilities in general education classes was assessed. Study 1 professors and I selected seven of the 13 disability eligibility categories defined in IDEA (2004). These seven were chosen because they represent disabilities of students with IEPs often included in general education classes and were most likely to be familiar to pre-service students from both GE and SPE backgrounds. They include autism (AUT), attention deficit hyperactivity disorder (ADHD), deaf and hard of hearing (DHH), emotional disturbance (ED), intellectual disability (ID), specific learning disability (SLD), and visual impairment (VI). Knowledge of each disability was assessed on a 5 point Likert scale that ranged from *not knowledgeable* (1) to *very knowledgeable* (5). A sample item was “How knowledgeable are you about teaching students with a visual impairment?”

Willingness to collaborate to include students with disabilities. Willingness to collaborate with colleagues to include a student with each of the seven disabilities (e.g., ADHD, SLD) in their classes was assessed on a 5 point scale from 1 (*unwilling*) to 5 (*very willing*). A

sample item was “How willing are you to collaborate with colleagues to include students with learning disabilities in your class? (NOTE: If you are not currently teaching, how willing would you be to collaborate to include students with the following special needs in your class?)”

Inclusion Analysis Score (IAS). An adapted version of The Pre-service Teachers’ Attitudes Toward Inclusion Scale – Adjusted (TAIS-A; Varcoe and Boyle, 2014) was part of the pre- and post-course survey. The scale used was adapted from the Teacher Attitudes to Inclusion Scale (TAIS) developed by Boyle, Topping, and Jindal-Snape (2013) and then further adapted to adhere to Study 1 professors’ request for an abbreviated scale in the interest of time. In order to accommodate their request, the TAIS was indeed shortened from 21 to 13 questions and modified to capture language more commonly used in the United States (as opposed to Australia where it originated). Because previous research indicates that the attitude of pre-service teachers affects their willingness to include students with special needs in their classes (Boyle, et al., 2011; Carroll et al., 2003; Loreman et al., 2011; Scruggs et al., 2011; Sharma et al., 2003) responses on the TAIS-A are of particular importance. When given at two time points in the co-taught course, a shift in attitude is an important indicator of whether or not participating in this class had any impact on attitudes, which may predict future willingness to collaborate with colleagues to include children with disabilities.

For each item, students were asked to indicate how strongly they agree or disagree with each statement on a scale of 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Sample statements include, “The extra attention students with special needs require will be to the detriment of the other students in the classroom” and “Students with special needs should be given every opportunity to function in the general education classroom where possible.” A composite score

reflecting the average response to the 13 items was calculated for each student, such that higher scores indicate more positive beliefs about inclusion (Chronbach's alpha = .82).

Post-course survey: *Student attitude toward collaborative course*. Student participants from both studies answered questions aimed to assess perceptions of their experiences in a collaborative course during their last class meetings. In Study 1 Anne and Chris requested the use of eight of 14 closed ended items adapted from the 2010 Co-teaching student survey (Advantas Consulting LLC, 2010) in an effort to reduce the amount of time students would need to take the survey. Sample items included "I enjoyed having two professors in this class," and "both professors equally understood the course content" measured on a 5 point Likert scale that range from 1 (*disagree*) to 5 (*agree*). In Study 2 all 14 items, including the same eight from Study 1 were given. A sample item from the additional six was "I believe that my interests were addressed in this course."

In addition, in both studies, participants were asked four open-ended questions that assessed the following topics 1. "What did you enjoy about taking a co-taught class?"; 2. "What did you not like about taking a co-taught class?"; 3. "What appeared to be the role of: Professor 1 and Professor 2?"; 4. "Do you have anything else you want to say about your co-taught class? Any advice for the future?" (See Appendix D for Post-Course Survey from Study 1 and Appendix E for the Post-Course Survey from Study 2.)

Student focus groups.

Due to the specific evaluative context for Study 1 (i.e., grant funding received), The professors from Study 1 created the focus group questions whose main purpose was to assess the effectiveness of course delivery and to document problems and concerns with the class as it was being taught. The format was discussion-based with the facilitator (i.e., the researcher) asking

leading questions in an effort to generate a guided discussion. Examples of discussion questions include, “What was your first response when you found out that this course would be co-taught?”; “What suggestions would you make to the professors to improve the class?” and “What do you see as some of the strengths of the class?” The same discussion topics from Study 1 were used for the Study 2 focus group, although other slight differences did exist in the administration of the focus groups. (See Appendix F for Focus Group Questions).

During the beginning of the sixth class meeting in Study 1, four focus groups of six students each took place during an extended break. Because the original intent of the focus groups was to provide evaluative feedback, groups of six were comprised by the professors and consisted of students with similar backgrounds; two groups were comprised of GE participants and two groups were comprised of SPE participants. During the beginning of class in Week 8 in Study 2, it was announced that students who wished to participate in a focus group would be allowed to do so during an extended break. Due to the nature of the joint sessions, and the professors’ wish to not utilize class time, I was permitted to run one focus group during an extended break comprised of student who volunteered their time. The focus group consisted of seven self-selected students representing students enrolled in both courses.

Administration of focus group sessions in both studies was held in a room separate from the classroom, and out of sight and audible range of the professors, ensuring participants’ honest responses and confidentiality. Participants were reminded that participation is voluntary, non-participation will not affect their grade in the course, and that sessions will be voice-recorded for transcription purposes only. Before the focus groups began, participants were asked to use neither student names nor other personal identifiers to ensure anonymity and honesty in responses. In the event that a name or other identifier was used, it was not included in the

transcription. At the beginning of the sessions, the researcher reminded participants that everyone's opinions and responses to questions will be equally regarded. They were reminded that there are not any right or wrong answers to the topics being discussed and that they should feel comfortable sharing their feelings freely. In order to ensure the highest quality of recording and reduce background noise, participants were asked to speak one at a time. Although notes were taken during the focus group meetings, audio recordings were transcribed verbatim.

Document review. Collected documents were used to help answer the question: How is a collaborative model being implemented in this case? SU utilizes Moodle, an online virtual learning environment, as a place to have ongoing discussions with fellow classmates and professors, disseminate course materials, and review personal grades on course assignments. All course information on Moodle is public to the class (with the exception of individual grades). For the purposes of the collaborative classes, the professors created a "meta-course" so that all students, regardless of their division affiliation, and I as researcher had access to the same course content and communication. Lecture slides, syllabi, assignments, and group communications were posted via Moodle. Additionally, the professors in Study 2 included me on their email exchanges during the plenary sessions and throughout the quarter, allowing for another source of data.

Professor email interview. At the end of the quarter, the professors were asked a short series of open ended questions via email about their motivation for teaching a collaborative class, whether or not they thought there were barriers to implementation, and how they were paired for this experience. (Please see Appendix G for interview questions.)

Researcher as instrument. Qualitative studies typically involve an "emic" or an "insider to the phenomenon," approach, in this case an insider to the collaborative teaching

practice. As a researcher in this study, I took an emic approach because co-teaching comprises much of my own teaching experiences as a special educator. I worked within the educational system, witnessing and experiencing the frustrations of co-teaching and collaboration with my general education colleagues. This study was born out of my curiosity and desire to “cure” the disconnect between the laws dictating collaboration and realities of practice which were forced upon educators as a result of the changing laws. I often asked myself and colleagues about their own co-teaching training and preparation. Overwhelmingly, training was absent or scant from pre-service programs and ongoing teacher education, begging the question “Why?” when co-teaching and collaboration are workplace realities.

Being an “insider to the phenomenon” also posed difficulties as I conducted this study. As a former special educator and lecturer at SU, measures needed to be taken to reduce personal bias in my findings. In order to do so, throughout the duration of the study, I utilized multiple methods cited by Creswell (2007). Among those methods, by stating my unique position as a former teacher and SU lecturer I am sharing my motivation and possible bias regarding the subject of collaboration in pre-service programs. Second, I utilized multiple sources of data in order to corroborate findings and lastly, throughout the analysis process, I debriefed with a peer regularly who provided ongoing feedback.

Findings

Overview of Qualitative Analysis

Observations in the form of field notes, focus groups and open ended responses in the post-course survey were analyzed using various *content analysis* techniques. Content analysis, as defined by Krippendorff (2004), is “a research technique for making replicable and valid

inferences from texts (or other meaning matter) to the contexts of their use” (p. 18) and can take various forms that suit the data source.

The four open-ended response questions in the post-course survey and focus groups were analyzed for content using the *Scissor and Sort Technique*. *Scissor and Sort* is a content analysis tool used by qualitative researchers in which, following transcription of data (i.e., focus groups), individual statements or phrases are cut out from the focus group transcripts or collected student survey responses and then organized by common ideas that were pertinent to the research questions (Denzin & Lincoln, 1994; Stewart & Shamdasani, 1990).

Field note analysis utilized Miles, Huberman and Saldana’s (2014) method of noting patterns and themes, and then clustering for counting purposes. After 11 rounds of comments and codes, a general coding system was created that addressed comments made by professors and students regarding attitude toward disability and collaboration. Initial codes included: attitude toward disability- professor (ADP), attitude toward co-teaching- professor (ACP), attitude toward disability- student (ADS), attitude toward co-teaching- student (ACS), and barriers (B). These codes were written in the margins of the field notes alongside relevant observations. Throughout this process, I debriefed with a colleague, a fellow doctoral student who is working on a PhD in special education and has nine years of classroom experience including collaboration with general educators, who provided feedback about the coding scheme and helped shape successive iterations of the code book. Subsequent reviews of the field notes yielded additional distinctions resulting in a further refined coding scheme indicating who made comments that indicate a positive or negative attitude toward disability or collaboration, evidence of professor collaboration or planning, and student frustration. Evidence found in observation notes that fit into the coding scheme were noted on a coding form. Upon completion

of a final code book, we assigned codes to at least 10% of the same field notes. Codes applied were compared and discussed in order to ensure reliability of findings. (See Appendix H for detailed code book and coding form.) Pertinent findings from other data sources were used to provide supporting evidence and more detailed description and explanation for emergent observation themes. (Please see Table 5 for explanation of themes and data sources.)

Qualitative Themes

Development of Themes. Themes were developed through a lengthy and involved process that started with the typing of my handwritten observation field notes. Field notes from each class session were typed exactly as I wrote them during my time in the classrooms. With all observations organized chronologically into one typed document, I read through the manuscript multiple times using “track changes” in the margins to indicate important events or observations. During the first read, I wrote down things that were of interest to me that the professors said and did. The second time, I noted things of interest that pertained to the students. A third read resulted in highlighting comments or events that related to organization either on the part of the professors or the college itself. My initial notes which detailed location of professors, specific timing of speaking or silence, when students entered and exited the room, etc. were abandoned as I was able to compare the two cases for the first time and see patterns emerge. Using Miles, Huberman and Saldana’s (2014) technique of noting patterns and themes and then clustering for counting purposes, my codes fell into families or themes.

My initial coding themes documented professor dissemination of knowledge and attitude about disability and collaboration either through action or spoken word. Subsequent readings took into consideration the impact professor’s words and actions have on students and I coded student responses indicating their perception of disability and collaboration in response to the

professors' lecture, classmates, and group work. Additionally, evidence of professor planning ahead of class (or lack of planning) emerged as student comments indicated frustration with lack of clarity and unanswered questions. "Frustration" emerged as a topic unto itself, particularly on the first night of class as students and professors tried to navigate this foreign concept of a collaborative course. Further examination of field notes revealed that student frustration was really a result of either institutional barriers, outside the professors' control (i.e., room change) or confusion and frustration due to an event within the professors' control (i.e., inadequate communication). As I worked through the process of identifying and developing codes, I consulted with my colleague, sharing my thoughts, bias concerns and process. Over time, final codes were adopted and one class' field notes (10% for Study 1 and 14% for Study 2) were independently coded to ensure reliability.

The families of codes that emerged seemed to sort themselves into the final four themes: codes relating to planning and co-teaching eventually formed the "Professor modeling is a teaching tool" theme. The attitude family lent itself to two unique groups as positive attitude codes told two different stories. One story was very specific to opportunities that the professors provided to students through the collaboration ("Opportunities and gratitude provide an enhanced learning experience") and the other was simply discussing topics or interacting with others in a clearly positive or negative manner ("Attitude is infectious"). Lastly, student frustration codes formed a final group, "Overcoming barriers requires commitment."

Using Krippendorff's scissor and sort technique outlined above, focus group transcripts and open ended responses were sorted into similarly oriented groups to support the four overarching themes. Most participant responses fit into themes. Those that did not fit included extraneous topics including information that gave away participant anonymity (i.e., names,

places of work, personal information) and discussion about other professors and classes taken previously. During weekly debriefings with my colleague, discussions of themes and interpretation of the findings were conducted.

Professor modeling is a teaching tool.

It's hard to imagine yourself as something you don't see. Chelsea Clinton.

Secondary literature has revealed that pre-service and in-service teachers have expressed a need for more information and training in curricular planning and making accommodations for students with special needs (Lancaster & Bain, 2007; Symeonidou & Phtiaka, 2009), noting that the one class on disability many schools require of GE students is not enough (McCray, 2004). However, this paper argues that collaboration skills do not necessarily need to be actively taught, but can be modeled and therefore taught through direct observation and participation as a student in such a class. Studies 1 and 2 provided this opportunity as the courses were collaboratively taught and professors modeled cooperative lecturing, course execution, and navigation of professional relationships. Furthermore students from various education disciplines potentially had the opportunity to model and share their expertise for one another on a regular basis. During the focus group in Week 6 of the quarter, one focus group participant from Study 1 shared her enthusiasm for being witness to professor modeling of collaboration:

I've never experienced two professors teaching at one time...I was really excited because we keep hearing about this kind of model...I had to teach with someone and it was very difficult and I didn't know who I was going to model after...It's a good thing that they are doing it.

In Study 2, Sasha and Quinn exemplified equality in joint sessions and through group communication via Moodle. Messages written before and throughout the quarter were written

and signed by both professors and addressed to all students regardless of their enrollment. Observations revealed that during each joint session when talking to students during lecture or activities, they said “we” referring to themselves as a teaching unit. Dissimilarly, during the first four weeks in particular, Chris and Anne in Study 1 often referred to lecture slides as “my slides” or “your slides.” Study 2 professors opened every joint session together and effectively taught the material side by side or at the very least, with each other’s professional input. Even activities planned and executed by one professor were shared and discussed via email prior to each joint session.

Pains taken by Study 2 professors to model collaboration for their students were validated by participants who indicated that they appreciated the experience as they understood the impact of the modeling on their own future practice at the end of their course. Modeling of collaboration not only provided a frame of reference, but many GE participants in particular revealed a positive shift in their comfort and beliefs about inclusion and working with SPE colleagues. This is especially the case as their professors, as role-models, worked well together and were able to support students’ learning in different ways, therefore helping them to see how collaborative teaching could benefit diverse students in their own classrooms. When asked about the advantages of taking a co-taught course in Week 8, a Study 2 focus group participant pointed out:

This is just like us practicing. In the field, all of a sudden it’s like we have to collaborate and it’s like I’ve never collaborated and I don’t know what to do. At least now I have some kind of clue and some idea.

Study 2 participants reported via focus group and open ended responses collected at the end of the quarter that Sasha and Quinn were experts in their respective fields, but also that they

worked well together and “were equal when they taught together” as they “supported all students” and “were role models for collaboration.” In contrast, participants in Study 1 pointed out the differences and inequalities between Chris and Anne as they were asked about the benefits of their co-taught experience. Week 10 survey responses repeatedly made mention that Chris was an assistant to Anne or that Anne was the “lead teacher” who “took more control of the classroom” and “gave most of the lectures” even though they took the lead for alternate lectures.

It is possible that the lack of collaborative modeling from the first night of class in Study 1 is a contributing factor to the discrepancy as Chris was absent due to a commitment to attend a professional conference (Anne was absent one week later in the quarter) and therefore left it to Anne to lay the groundwork for the course, explain the syllabi and collaborative model, and answer questions from concerned students. During the first class, Anne told students that they should ask questions of “their professor” and attend “their professor’s office hours” and hence, she effectively separated the class into two. Additionally on this and subsequent nights, she often said “I” and “mine” when referring to lecture, slides, students, and activities. Even when Chris and Anne attended together, lectures were largely separate entities, with one professor speaking and the other either sitting or taking notes.

Participant post-course survey responses indicated that students in Study1 were uncomfortable when one professor would interrupt the other to ask a question or express an oppositional view. A theme across focus groups which was repeated in open ended surveys is that students would have liked to see seamless planning of lecture, activities, and grading, particularly as group work became contentious because students felt they had to please their professor’s requirements which appeared to students to differ between Chris and Anne.

Observing groups work on a class project demonstrated increasing pressure and stress as the quarter wore on as students argued about what to present and how to present it citing differing professor expectations as the problem. They did not know how to reconcile these differences for each other while maintaining their own academic integrity. To contribute to confusion of differing expectations, during Week 8, when Anne was not present, Chris made assignment due date changes. Students appeared nervous as it was not clear if this was a unilateral or joint decision. Open ended responses on the post-course survey indicated a need for clear expectations for the all assignments laid out in the syllabus or assignment rubrics from the inception of the course. Possibly as a result of the professor modeling in Study 1, throughout the quarter, weekly group work was troubled as students attempted to collaborate to complete and present projects. A participant voiced her frustration by noting in a post-course survey open ended response:

Professors did not have same answers when asked the same question... I find it confusing sometimes when (Chris) would explain how to accommodate a student with disabilities and then (Anne) gave her own input which is the opposite or which goes against what (Chris) just discussed...One professor was sometimes not aware of how the other professor wanted certain work to be completed. They had different advice on how to handle assignments. They passed the buck on giving advice at times...A unified rubric would be beneficial for these types of class...Assignments were not clear and one (professor) won't know an answer because the other one created it... They need to be on the same page regarding grading because we care about that... They need to collaborate on what they are looking for...it makes it hard for us to work as a group.

On the other hand in Study 2, during the first two “introduction” classes held in Week 1 of the quarter, students had the opportunity to meet both professors and learn about the

collaborative model utilizing joint sessions. When Quinn introduced herself to Sasha's class, she actively and warmly welcomed the SPE students to her class saying that having them there would "enrich" her students' experience. Quinn and Sasha spoke very freely about the benefits of collaboration and the importance of experiencing both perspectives (SPE and GE) during their pre-service program. Furthermore, Sasha and Quinn referred to students as "experts" in either SPE or GE content. The GE students were referred to as "GE colleagues" and the professors regularly used terms such as "our class" and "we" when talking about the course. Moreover, Sasha demonstrated Moodle to the students and explained how the two courses would be integrated online and in person. In the week before the start of the quarter, Moodle was set up as a meta-course with students from both courses having access to all material, chat, and assignments.

Quinn's first class meeting was very similar as Sasha was introduced by Quinn and the two together introduced the model and benefits of collaboration with SPE students. Once more, co-teaching was presented in a positive light where students can learn from one another as they share perspective and content.

Collaborative teaching was modeled in the first and subsequent five joint sessions of Study 2 as class ran seamlessly in these terms. Planning was evident as the lectures and activities were well integrated with both professors having input in the discussion and, often lecture. Frequently both professors lectured together, but when one took the lead, the other would take notes on the board, distribute handouts, assist with technology or listen and interject comments and suggestions. Joint sessions were opened with a welcome to all students and always ended thanking everyone for participating.

At the end of the first joint session in the GE class, Quinn thanked SPE students and asked them to recruit more of their SPE colleagues to attend the joint sessions. When groups were formed during the second joint session, the professors attempted to mix the groups by saying that students need to “access each other’s knowledge.” Furthermore, group activities throughout the quarter drew on the content expertise of the GE students as well as the specific knowledge of the SPE students. These observations were summed up by a participant of the focus group which took place during Week 8:

I thought it was neat because, coming from the special education program, being able to go into the general education program to get a different point of view allows us to help each other. They gave us some insight and we were able to give them some insight. I just thought it was neat to collaborate because in special education we do a lot of collaboration with general education teachers.

Responses such as this indicate that Study 2 participants took their professors’ lead, effectively collaborating on projects expressing gratitude for their input and help.

Participant responses from both studies indicate that professor modeling, or lack thereof, had far reaching effects on students’ attitudes toward each other and professional collaboration.

Opportunities and gratitude provide an enhanced learning experience.

Learn everything you can, anytime you can, from anyone you can - there will always come a time when you will be grateful you did. Sarah Caldwell.

Participating in a collaborative class offers a second perspective on a curriculum unavailable in a traditionally taught course. GE and SPE students are grateful they had the opportunity to hear multiple perspectives on a topic which they expressed in positive comment as both studies noted in open ended responses and in focus groups. GE students from both studies

specifically remarked on the value in being exposed to a course that instructed them on how to teach students with disabilities. Study 1 GE participants saw a clear advantage in having access to two professors rather than one, particularly in order to access disability related content from a special education professor. In open ended response on the post-course survey, a participant wrote:

Both (professors) had expertise and different views on the same topic which was helpful... I learned a lot of material about special education that I didn't learn in general education classes (and) had a chance to look at (other teachers') point of view...(The professors) supported students' learning in different ways...and brought diversity of experience and students.

Overall, Study 1's focus was less on drawing on the expertise and knowledge from students across education divisions and more on dissemination of course content via lecture. This model allowed students the opportunity to learn from and interact with a professor and students otherwise outside their division. Students previously requested a demonstration of accommodations and modifications that might be used in a classroom for children with hearing impairments. Chris asked a student who works in the field to bring in examples of tools she uses in her classroom to demonstrate for the class as a whole. At the end of the demonstration during Week 6, GE students in particular, expressed their appreciation for this novel presentation. At the end of the quarter one GE participant wrote on the post-course survey that a highlight of the class was when "material was brought in to show how to teach children with disabilities."

While this incident of students demonstrating expertise was a highlight of the course for one GE student, it was isolated. Students and professors expressed their appreciation in the moment, but

did not draw on student knowledge on a regular basis, missing opportunities for learning among classmates and perhaps gaining respect for each other's profession within education.

Multiple Study 2 GE participants wrote in open ended survey responses that they gained more from this class because of the collaborative model than they would have in a traditional course on the same topic. Study 2 participants particularly enjoyed the opportunity to work with colleagues from across the education spectrum as they taught each other about their respective fields while practicing collaboration skills. In joint sessions, they had the opportunity to work together, often helping each other craft and modify lesson plans to reach students with various abilities, a skill not often touched upon in general education teaching programs. At the end of the course one GE participant pointed out, "I definitely gained more from collaborating with colleagues who are experts in another field."

Furthermore, Sasha had a connection to the Learning Center (LC), an on campus classroom established to give pre-service teachers an opportunity to teach under the guidance of professors while providing an educational weekend experience for local school children. Because of her connection, the GE students in Quinn's class had the unique opportunity to volunteer at a place where students work with children with and without disabilities on Saturday mornings as teachers in a collaborative model. This had a special impact on GE students as they typically do not have access to the LC and as a direct result of the collaborative teaching model, these students were able to gain valuable experience collaborating with special educators and working with children with special needs. Participants were grateful for the opportunity to volunteer in the LC; professors expressed their own gratitude in an email exchange. During Week 7 of the quarter, Sasha articulated her appreciation to Quinn for her students' volunteer time by writing, "All the gratitude is mine- your students really worked hard, were delightful

collaborators, and have added a fresh trend into the Center. I am ready to welcome any other students in the future.” In focus groups held in Week 8 of the quarter, one GE student who volunteered in the LC stated:

I personally was totally fearful of special education. I thought that you guys (SPE) would take care of it and I would take care of my part...general education (pre-service) teachers don't even know that (we) have to collaborate with special education teachers. In the end, I appreciated the opportunity to volunteer with children with special needs and learn how to collaborate through professor modeling.

In the last week of the quarter, Sasha sent an email on her and Quinn's behalf informing students that they will not have a joint session in the last week and also thanking them:

Please know that this co-teaching experience and working with all of you who came to the joint sessions and participated in the discussion was a very valuable and meaningful experience for both of us. We learned a lot and enjoyed the sessions we spent together. Thank you for your welcoming attitudes, open minds, and great comments and thoughts. My special gratitude goes to those who also came to the (LC) and volunteered and helped us out. Those lessons were the highlight of my quarter there.

Echoing the sentiment, almost all students from both studies were grateful for the opportunity to receive instruction from two professors, to hear multiple perspectives and to have the chance to see co-teaching in action. Given the opportunity, all focus group participants would consider taking another collaboratively taught class.

Sasha wrote a testament to the benefits of a positive attitude, when asked about barriers to the course at the conclusion of the quarter:

We always hoped that the classes would be offered on the same night and we planned for that, but then we had to adjust and be flexible. That wasn't a big deal, but it would have been smoother if it worked out. I was so grateful when the students came on the nights when they did not have a class! So I think we had great attitudes both as far as teachers and professors go. And I also appreciate how wonderfully supportive the committee was to allow us to meet not with the entire classes, the staff- who helped us book the classrooms, the colleagues who gave us extra chairs, etc. So I think there was more helpfulness than barriers in the end.

A positive view of the difficulties in the course is indicative of the way in which Sasha and Quinn conducted their class; in return, their students viewed the possibilities associated with collaboration rather than the drawbacks.

Attitude is infectious.

Attitude is a little thing that makes a big difference. Winston Churchill.

Results from class observation show that attitude, and to a lesser degree, the dissemination of knowledge, is how students are educated about professional collaboration and the acceptance of inclusion in our classrooms. Studies 1 and 2 were, in effect, two collaborative courses with a shared curriculum, but seemingly different goals about teaching collaboration to students. The courses used for both studies had measurable educational outcomes for required topics, however the approach to teaching the benefits and realities of collaboration were quite different. The teaching of study 1 consisted of the given curriculum by two teachers whereas the professors of study 2 modeled a positive attitude through collaboration in terms of planning, communicating, and executing the course. Focus group, survey response and open ended

question responses from student participants speak to these differences in attitudinal shift over the course of the quarter as a student in a collaborative class.

Study 1's professors' attitude toward collaborating and disability was peppered into the course through comments and anecdotes. In general, a positive attitude was displayed through the telling of personal professional anecdotes involving teaching and accommodating children with special needs. The topic of professional collaboration was infused into class more frequently with 12 positive comments and actions made by Chris and nine by Anne. An example is that in Week 2, Chris' slides for lecture included both professors' names on the title slide. In Week 5, after lecture, the professors answered questions together and by Week 6, Chris and Anne walked into class together and lectured side by side for part of the period for the first time. Students responded in kind, noting the benefits of collaboration once in the first week and once in the last week of class. Participants in focus groups noted:

I find it useful that they decided to do something like that (collaboration) because before it was all segregated...and I think that for new teachers it's good to know what others are doing. They're coming out with this background, two perspectives...This sets an example for us...I like the whole idea because we are learning from their mistakes. We are seeing what it is to be co-teaching with a colleague at a professional level. I'm having mixed feelings about what I'm seeing...but it is a first-hand account of what it is to be co-teaching.

During final group presentations, one student even commented on the value of collaboration as a part of group work. Furthermore, Chris made four remarks over the quarter and Anne three that displayed a positive attitude toward disability outside of general lecture and neither professor spoke negatively about disability. In Week 6, Anne, for the first time gave an

example in her lecture about a child with autism to clarify her point. In Week 8, when Chris attended alone, students brainstormed ideas about accommodating students with disabilities which Chris uploaded to Moodle for future reference. Outside of Chris' lecture periods, participants rarely displayed a positive or negative attitude toward disability in comment.

Despite the relatively high number of positive references of collaboration, a negative attitude of the professors about professional collaboration also made an appearance; three times from Chris and 11 times from Anne. For example, Anne began one lecture stating, "For those of you who are special ed, I know you've already taken a class in (subject). I guess that's one of the cons of co-teaching." Chris responded by saying that "it is always helpful to hear it twice...you'll have a better understanding." All but one negative comment made by the professors was made in the first three weeks indicating a positive shift in the professors' attitude as the quarter progressed.

Students however, also expressed negative attitudes toward their classes' use of a collaborative model eight times over the ten weeks, four times alone in Week 1 and seven times in the first three weeks. Students asked questions like, "Why can't I go to either professor's office hours?" By Week 5, almost half of students came between 30 and 60 minutes late to class and students began coming back from break up to an hour after the designated time. Moreover, during Week 8, students began to pack up well before the end of Anne's lecture showing a clear disinterest. A GE focus group participant expressed their frustration with the course:

I think the problem is as a student...some of their information is not well integrated...it seems a little bit like the conversation is immature...they haven't developed their thought process before they present it to us... They don't want to answer questions directly because they don't want to step on each other's toes...it's unpolished at times... They

need to be aware of each other's expectations... they are having conversations in the classroom learning about each other... the team teaching aspect needs to be developed more.

Observing this class during the earlier weeks did not show a positive attitude of the two professors toward a beneficial collaboration within their own classroom which could have been role-modeled for their students. It was not until Week 6 that Chris and Anne freely interacted with one another, commenting on and complimenting each other's material.

Negativity noted, although the term started rocky, gains were made as the quarter progressed. Week 6 saw Anne and Chris joking, laughing and appearing noticeably more comfortable with one another as co-teachers. When one professor was lecturing, for the first time, the other would comfortably make comments and suggestions without asking permission or speaking over the other. In a change from the first class, in Week 7, Anne and Chris announced that assignments would be graded together. Perhaps as a result of this shift, during Week 10, for the first time, students talked about collaboration as a by-product of the course.

Alternatively, the professors of Study 2 had goals other than the prescribed curriculum. In a professor email interview after the end of the quarter, Sasha explained the importance of providing an opportunity to develop a positive attitude toward professional collaboration by experiencing a positive experience in which they model collaboration in a university class setting:

General ed teachers and special ed teachers should have an opportunity to take a class together at a later point (when they have more professional knowledge) and in the context of a smaller class (that would promote discussions). I am convinced that they need to have this experience to dispel the mystery of each other's expertise...have opportunities

to interact in a non-confrontational way before the real-life experiences of IEPs, negotiations of students' placements and accommodations.

Sasha's philosophy and positive attitude toward the collaborative model was reflected in Study 2's observations, document review, and participant responses in focus groups and survey responses.

Before the beginning of the quarter, Quinn and Sasha emailed back and forth discussing the finer points of the first joint sessions. Email responses included pleasantries, praise, and appreciation for their collaborative efforts. Before the first night of class, Quinn and Sasha established a meta-course on Moodle which included students enrolled in both courses. In this way, before they met on the first night, professors established contact with all students, and students had access to both professors. Information that was considered relevant for one group of students was posted for all to see. Resources, job postings, lecture slides, and a news forum were among the material Moodle made available to all students. Professors were able to email individuals or groups of students via Moodle which they did often and as a team. Their collaboration and appreciation for each other was evident in emails from professors to students thanking them for attending joint sessions, reminding them of assignments or a room change; usually signed by both professors.

Both professors, seeing the opportunity to teach through their own positive attitudes and beliefs about collaborating to teach students with diverse learning needs, commented in class and online throughout the quarter about the benefits of professional collaboration and need for learning skills to teach all students effectively regardless of their course of enrollment and credential area. While Sasha instructed specifically on disability related topics, Quinn interjected 11 positive comments or actions about teaching children with special needs to show her support.

Similarly, when answering student questions, Quinn and Sasha often responded while adding a commentary on the importance of collaboration and learning from our colleagues; 14 and 26 times respectively. As students worked in groups during the fourth joint session, Quinn said, “I hope you remember this collaboration when you are working to help kids reach their potential.” In one such comment during the third joint session, Sasha said to GE students:

For those of you who came for the first time on Saturday (to the LC), feel free to contact your special education co-teachers and take part in planning, brainstorming, and taking charge of parts of the lessons...incorporating your content area and professional expertise. I know my student teachers would welcome your ideas.

Discussions were held via Moodle so that students had the opportunity to work with one another regardless of whether or not they were able to attend joint sessions. In the first week of class, students were welcomed to meta-course assignments with the following message

Welcome to the...Collaborative Course! For the 2nd week and for the weeks when the classes do not meet in person, please participate online. Please respond in detail to both questions, post your own question (or more) at the end of your post and respond to at least 2 more posts of your colleagues.

The creation of the meta-course created multiple opportunities for collaboration between the two classes and among classmates despite not meeting together on a weekly basis. It allowed for a positive space showing the benefits of collaboration while allowing students to participate in collaboration in discussion and projects. Professors took every opportunity to show their appreciation for each other, their students, and the benefits of working collaboratively; the professors consistently referred to groups of students as “colleagues” furthering the concept of professional collaboration. By the fourth joint session, students were referring to one another as

“colleagues”; one GE participant said of a member of his group that his “special education colleague enhance his lesson plan by making it accessible to all students.” It is noteworthy that in the last week of the quarter, during a non-joint class, Quinn integrated topics learned in the joint sessions. For their final projects (non-joint), GE students had to create accommodations and modifications for hypothetical students with disabilities, continuing outside of joint sessions the importance of learning about disability and collaboration. When asked about using a calculator in math class, one GE participant said, “I don’t like it but understand that some people need to use one to demonstrate knowledge.” When presenting accommodations for their hypothetical student a GE participant exclaimed, “I didn’t realize how important proximity (to the teacher) is...it’s really important!” Throughout the presentations, students referenced handouts and lecture material from the joint sessions, noting how important that information is for them to keep for future reference.

The greatest testament to a shift in attitude due to this course is evidenced in open ended survey responses provided in Week 10. One GE participant wrote, “As a result of this class, I do not feel uncomfortable with the idea of having students with special needs in my class anymore.” Another noted that as a result of collaboration on class projects, he “greatly values the input of special educators.”

Overcoming barriers requires commitment.

You can focus on things that are barriers or you can focus on scaling the wall or redefining the problem. Tim Cook.

Individuals as well as the university presented barriers to the effective implementation of professional collaboration and successful academic and social outcomes for students. Even though these two professor dyads had applied for and won a grant to co-teach through the

College, the registrar had previously created the classes in both Study 1 and 2 as unique courses resulting in the assignment of separate course numbers, classrooms, and student rosters. The enrollment and registration procedure are outside their purview and therefore this was out of the control of the professors. The creation of separate course numbers in effect constituted two distinct classes. On the first night of Study 1 this was very apparent as one class was uprooted from their assigned classroom in order to merge the two classes. Students enrolled in the SPE course found their classroom locked with a piece of paper taped to the door stating the room change. As they walked into their new classroom, they and their equally unsuspecting GE colleagues expressed confusion about the merging of two classes. Students were not aware of the collaboration ahead of time; hence some feared a mistake had been made and that they were in the wrong place or had come on the wrong night. Both groups of students were indignant that they were in the right place and only when one of the professors came in (Chris was absent the first night due to previously arranged conference travel) the situation could be clarified.

A secondary result of the separate course numbers was the creation of two rosters, further promoting the idea that two classes were meeting in one room. Unfortunately, the Study 1 professors did not have the Moodle meta-course established by the start of the quarter, which could have merged the two courses online and changes could have been communicated to the group as a whole. On the first night of class, Anne, alone, had to explain the co-teaching model, room change and syllabi which complicated matters further. Observations revealed that during the first class, Anne referred to the courses as two separate entities and went so far as to explain that students must see “their professor” for questions and clarification. Student questions about assignments went unanswered as Anne explained that all would be clarified in the “coming weeks.” At the end of the first class, collaborative teaching had not been established, leaving

students confused and unsure about course and professor expectations. One focus group participant reflected on the first class by saying, “The first class Chris wasn’t there...it was a bad start because it did not set a positive expectation...I felt that in an experiment, not having a professor there on the first day put judgment in my eyes.”

Another focus group participant noted:

I was a little disappointed...taken aback...I thought I was in the wrong class, with the wrong teacher in the wrong room...like they made a mistake... When I registered, I expected a full on special ed class and I wondered if I’m being cheated out of my education. Am missing something? I don’t want to be a project... I really thought of dropping the class...because it turned out to be a whole experiment on co-teaching.

Chris and Anne aggravated the impact of the two-course barrier by creating separate syllabi. A review of the syllabi showed that while nearly identical in content, there were differences that contributed to confusion, particularly as Anne presented both syllabi in Chris’s absence. Although both syllabi noted on the first page a brief explanation of the collaboration that was going to take place, differences ran the gamut from wording choice (i.e. TBA v. TBD) to Anne’s offer of extra credit (Chris did not), additional readings and resources listed on Chris’s syllabus and differing content standards.

Focus group participants discussed these issues stemming from the presentation of the course on the first night. Specifically, Study 1 participants felt that clarification should have been provided regarding expectations for a collaborative class in terms of course material (i.e. Are they going to have less material presented due to the merging of two courses) and credit issues (i.e. Will they receive credit for one or two classes). Across open ended responses and focus groups, GE and SPE participants suggested that ways to eliminate some of the sources of

confusion and frustration include combining the two syllabi, creating one course number to avoid classroom changes, and providing one grading rubric for each assignment to eradicate ambiguity of assignment requirements. Furthermore, participants would have liked to know about the collaborative model before enrolling in the class.

Study 2 participants faced a greater barrier to collaboration as the registrar not only created two course numbers, but the courses were actually scheduled for different nights. In an email questionnaire to the professors, Sasha and Quinn recognized this as a barrier to instruction as they had planned for and intended to teach on the same night and time to include in joint sessions all students enrolled and minimize disruption to everyone's schedule.

An additional problem that arose during the first joint session is that due to the way the classes were established, the room assignments were too small to accommodate the number of students who ended up attending the joint sessions. In order to address this barrier, before the fourth joint session, Sasha and Quinn contacted the College's education department administrative office and requested a room change for the remainder of joint sessions. In an effort to minimize confusion, information about room changes was posted on Moodle for all students to see before class each week. Although Study 2 participants wrote that they enjoyed the joint sessions, focus group and post-course survey responses suggest that the academic needs of students would be better served if the professors co-taught more regularly which was particularly difficult due to the scheduling issues. One student noted that he wanted more time to collaborate with the GE cohort as it was "hard to build relationships with (them) in a short period of time." Student and professors alike noted similar barriers to a smooth collaborative experience, however, Quinn summed it best by writing in her professor survey, "That said, the benefits far outweighed difficulties."

Social/academic barriers. Study 1 and 2 SPE participants reported in focus groups and open ended questions on the post-course survey that differences in pre-requisite course requirements were problematic for them both socially and academically. Participants of Study 1 reported group work as problematic since students with a SPE coursework background felt that they had to teach their GE peers when working on a project requiring integration of accommodations and modifications for hypothetical students with special needs. This resulted in observed contentious group work sessions which forced students into a professor-student role within a student group dynamic. A Study 1 SPE focus group participant summed up her concerns by stating that, “GE students need a base...they cause us to fall behind because they don’t know special ed basics...as a result, special education is being mentioned but not in depth...the general ed students want us to teach them because they haven’t heard it from the professors.”

Open ended responses from the Study 1 post-course survey reiterated what was noted by SPE participants in focus groups: they feared they were missing content that might have been presented in a course strictly for special educators due to the imbalance of essential SPE knowledge. Study 2 GE participants reported not only the lack of SPE coursework offered to GE students as part of their program, but a lack of *effective* SPE coursework as problematic prior to taking this collaborative course. Focus group participants discussed their single SPE requisite course stating how little it prepared them for the realities of collaboration and inclusion. One participant noted:

It’s a class where you sit with like 100 people...you can take that class but you won’t really learn how to apply (concepts)...With this class, we brought in our lesson plans, lesson plans we have done or will perform...it’s like how can we make this better using

differentiation in our instruction and that's something you won't learn in (the special education survey class) ...Other than that, we don't have any other special education classes to take.

Another GE focus group participant said of the special education survey class:

I still have that book because...I knew at some point it would be important and I could just go back to the book and then shuffle them (students with IEPs) along where they need to go...I was taught how to identify them (students with IEPs) and get them to that other class or get that special ed person in here to take care of it while I'm taking care of the other students.

Due to the Study 2 course, the participant realizes that is not going to be the case and would prefer more targeted training and information about working with students with disabilities.

While students lauded the collaborative experience of Study 2, they felt ill prepared for the conversations and group work requiring specific disability related knowledge. However, many participants from both studies indicated that taking a collaborative class or classes should be required of students in the College and that the university should increase the number of opportunities to do so. Unanimously, participants voiced concern about the credentialing programs' across the College lack of SPE preparation, specifically in terms of collaboration skills taught and modeled in classes. After eight weeks of being a part of the collaborative course, one SPE focus group participant remarked, "I think it should be mandatory...because I think a lot of (GE) teachers who are in the field believe they just have to tend to their students and a special ed person will come in to take care of the special ed students." Another GE focus group participant continued in this vein noting that in a traditional pre-service class, "you don't

learn how to interact with peers.” One SPE focus group participant pointed out, “It’s good that they are starting us off when we are still in our (pre-service) program...you have to work with SPE teachers because they need you and you need them and you start having those attitudes developed early.”

Across focus groups and various survey responses, professors and students noted the need for the university to shift their pre-service education model to eliminate these physical and academic barriers to create a more effective and seamless collaborative cross curricular program. It was predominantly recommended by participants that the College continue to offer collaborative courses as focus groups and survey responses indicate that almost every study participant would take another collaborative course if offered and, despite some of the drawbacks, felt the benefits outweighed the problems.

Summary of Themes

Themes indicate that although there are many possible barriers to collaborative teaching including scheduling issues, lack of pre-planning, and inadequate requisite coursework, benefits of collaboration are apparent from the emergent themes of the two studies. In Study 1, students appreciated the collaboration being modeled by their professors, while in Study 2, students became hyperaware of the possibilities inherent in collaboration based on their professors’ use of Moodle, shared planning, and collaborative assignments. In both studies, students felt grateful for the enrichment they received from having two perspectives from two different experts.

The attitudes brought to collaboration trickled down at all levels. In Study 1, professors’ lack of pre-planning to unify the courses, and apparent discomfort with one another and the model, translated into awkward student group work dynamics and inconsistent attendance which ultimately, to some degree, were modeled by the professors. Similarly, students in Study 2

responded to their professors' behavior. They were encouraged by their professors' positive attitudes to the extent that the students volunteered their time to attend joint sessions and the learning center to experience fully the benefits of collaboration model presented.

In both instances professors' attitudes carried over to student attitudes which, in turn, bled into overall group dynamics and student motivation (attendance and participation in voluntary activities).

Quantitative Findings

A survey was given to student participants in the beginning and at the end of each course to assess attitude toward disability, collaboration, inclusion as well as a course evaluation. Analyses were conducted using SPSS (22) statistical software package. Due to the nature of missing data (i.e., entire constructs) listwise deletion procedures were utilized.

Pre-Post Measures

During the first class session in Study 1 and the second class session in Study 2, pre-course measures were given to students who consented to participate in the study. Participants were asked to self-report their knowledge of various disabilities and their willingness to collaborate in order to include children with those disabilities in GE classrooms. Additionally, participants were given the TAIS-A in order to assess their attitude toward inclusion. Findings from Study 1 participation in the TAIS-A are not considered reliable due to a low Chronbach's Alpha of .27. (Please see Appendix C for Pre-Course Survey.)

Change in Knowledge of Disability over Time for GE and SPE. A 2X2 (course enrollment group X time) repeated measures ANOVA was conducted on self-report measures regarding knowledge of disability. Study 1 analyses show that there was a non-significant main effect due to group regarding knowledge of the following disabilities: deaf and hard of hearing,

emotional disturbance, and visual impairment; GE and SPE participants reported similar levels of knowledge. There was, however, a significant main effect due to group for attention deficit hyperactivity disorder: $F(1, 20) = 8.318, p = .009$, autism: $F(1, 20) = 8.535, p = .008$, intellectual disability: $F(1, 20) = 11.266, p = .003$, and specific learning disability: $F(1,20) = 7.177, p = .014$. Not surprisingly, SPE students reported more knowledge than their GE peers. Dissimilarly, in Study 2 there was a non-significant main effect due to group regarding knowledge of any disabilities; GE and SPE participants reported similar levels of knowledge.

Within subjects analyses for Study 2 indicate a non-significant main effect due to time for the GE group when asked about knowledge of attention deficit hyperactivity disorder and intellectual disability, meaning that neither group reported a significant increase in knowledge from pre to post course. There was a significant main effect due to time for the Study 2 GE group for the following disabilities: autism: pre-course (M= 1.813), post-course mean (M = 2.813): $F(1, 15) = 17.143, p = .001$, deaf and hard of hearing: pre-course (M = 1.875), post-course (M= 2.438): $F(1, 15) = 5.448, p = .034$, emotional disturbance: pre-course (M = 2.063), post-course (M = 2.625): $F(1, 15) = 12.789, p = .003$, specific learning disability: pre-course (M = 2.313), post-course (M = 3.125): $F(1, 15) = 12.739, p = .003$ and visual impairment: pre-course (M = 1.69), post-course (M = 2.56): $F(1, 15) = 7.737, p = .014$. There were no significant main effects for the Study 2 SPE group or either group in Study 1.

The interaction of course enrollment X time was not significant for any of the disabilities with the exception of specific learning disability in Study 2: $F(1, 27) = 7.913, p = .028$. The change in mean scores from pre- to post-course measure for the GE group was significantly greater than the change for the SPE group. (See Table 6 for mean differences and Table 7 for ANOVA table.)

Change in Willingness to Collaborate to Include Students with Disabilities. A 2X2 (group X time) repeated measures ANOVA was conducted on self-report measures regarding willingness to collaborate in include children with various disabilities. Study 1 results indicate that there was a non-significant main effect due to group (course enrollment) regarding willingness to collaborate to include students with emotional disturbance and specific learning disability; GE and SPE participants reported similar levels of willingness to collaborate to include students. There was a significant main effect due to group for attention deficit hyperactivity disorder: $F(1,20) = 8.318, p = .009$, autism: $F(1,20) = 4.492, p = .047$, deaf and hard of hearing: $F(1,20) = 6.578, p = .018$, intellectual disability: $F(1,20) = 5.192, p = .034$, and visual impairment: $F(1,20) = 6.999, p = .016$. In all of these instances, the SPE group reported greater willingness to collaborate than their GE peers.

In Study 2, there was a non-significant main effect due to group (course enrollment) regarding willingness to collaborate to include students with attention deficit hyperactivity disorder, autism, deaf and hard of hearing, emotional disturbance, and specific learning disability. The main effect of group on willingness to collaborate was significant for intellectual disabilities such that GE participants reported lower scores than their SPE peers, $F(1,20) = 5.192, p = .034$. The main effect of group on willingness to collaborate was also significant for visual impairment such that SPE participants reported lower scores than their GE peers, $F(1,20) = 6.999, p = .016$.

For both Study 1 and 2, within subjects analyses indicate a non-significant main effect due to time (pre- to post-course survey) for either the GE or SPE group. Similarly, the interaction of course enrollment X time was not significant for any of the items asking about

willingness to collaborate to include students with disabilities ($ps > .05$). (See Table 8 for mean differences and Table 9 for ANOVA table).

Change in Inclusion Analysis Score (IAS). A 2X2 (group X time) repeated measures ANOVA was conducted on the IAS for Study 2 participants. There was a non-significant main effect due to group (course enrollment); the two groups reported similar attitude towards inclusion. Within subjects analyses indicate a significant main effect due to time for the GE group: pre-course ($M = 40.50$), post-course ($M = 46.56$): $F(1, 15), p = .001$. Within subjects analysis was non-significant for the SPE group ($p > .05$). The interaction of course enrollment X time was not significant.

Post-Course Measures

During the last class meeting in both studies, measures were included on the post-course survey intended to assess the course in terms of the professor use of collaboration. Due to professor request to shorten the survey, in Study 1, the collaborative process measure included only eight items, while in Study 2, 14 items were used.

Study 1. Independent samples t-tests were conducted to compare participant responses on the course assessment based on their course enrollment (i.e. GE v. SPE). Of the eight statements, only one elicited a response of significant difference; “I would like to have two professors in my other classes”. There was a significant difference in the scores for GE students ($M=2.73, SD=.905$) and SPE students ($M=3.08, SD=1.62$); $t(21)= .642, p < .05$. With this exception, results suggest that students, regardless of enrollment, viewed collaboration in their course and the roles of the professors similarly. Confirming these findings, results from t-tests conducted on the professor comparison assessment showed that none of the nine statements elicited a response of significant difference ($ps > .05$) based on class enrollment.

Study 2. Participants answered 14 questions on the course assessment; only one elicited a response of significant difference: Both professors taught during each class meeting. There was a significant difference in the scores for GE students ($M=3.44$, $SD=1.55$) and SPE students ($M=4.46$, $SD=.519$) conditions; $t(27)= 2.28$, $p < .05$. This finding, while significant, is questionable due to the nature of the joint sessions.

Summary of Quantitative Findings

Significant findings from Study 1 regarding change of disability knowledge and willingness to collaborate, show that SPE participants report more knowledge and willingness to collaborate than their GE peers. These findings, while significant, are not surprising as SPE students, by nature of their program and work history, have more experiences and coursework in the field of disability; collaboration is an expectation of special educators but not necessarily so for general educators. Study 2 participants did not report this great disparity in knowledge and willingness to collaborate, possibly because students in the GE program had already taken or were concurrently taking the foundations of special education course. Study 2 results indicating a change of knowledge over time showed that GE participants made significant gains in disability knowledge suggesting that the professors in Study 2 successfully infused disability specific knowledge throughout their lessons in addition to the content prescribed by the College. This is evidenced in the presentation of Quinns' students' final projects which included a section on accommodating students with disabilities. Surprisingly, Study 1 findings regarding change in disability knowledge from pre- to post-course survey were non-significant for GE participants. Similar positive findings for Study 2 GE participants were found on the IAS indicating that over time, GE participants' attitude toward inclusion increased significantly.

Only one statement on each study's post-course measure was significant. Study 1 SPE participants reported a greater inclination to take another collaboratively taught course than their GE peers and in Study 2, SPE participants reported that both professors taught during each class meeting more so than their GE counterparts. This finding, while significant, is questionable due to the nature of the joint sessions and students' ability to attend all joint sessions. Overwhelmingly non-significant findings from both studies suggest that participants, regardless of enrollment, viewed collaboration in their courses and their professors similarly.

Discussion

We know from the literature that institutional and attitudinal barriers often prevent effective collaboration from occurring in primary and secondary schools which in turn affect the learning opportunities for children with disabilities who are included in general education classrooms. In the limited research on collaboration among professors in post-secondary institutions, especially regarding pre-service programs across the special-general education spectrum, professor concerns mirror in-service teachers with the exception that the affected students are now pre-service teachers. The result is that SPE pre-service teachers who take as few as one required course on collaboration, and GE pre-service teachers who receive minimal training in the area of disability and often no training regarding collaboration, enter the workforce and continue the cycle of ineffective collaboration practices, furthering negative attitudes about disability and inclusion, ultimately resulting in less than optimal educational and social outcomes for included students. This dissertation presented two cases of collaboratively taught courses at the pre-service level that can inform efforts to help improve upon existing pre-service education in these fields and promote positive attitudes towards professional collaboration and inclusion. Studies 1 and 2 have taught us that teacher preparation programs do

in fact have the ability to help shape attitudes about collaboration in two ways, through university structure and through direct teaching and modeling.

University structure: The elimination of institutional barriers.

With proper policies in effect, the university itself can facilitate a smooth pathway to effective collaboration practices among professors. Studies 1 and 2 were affected by institutional barriers that, in turn, created less than desirable circumstances for both professors and students. Scheduling issues top the list of problems particularly as Study 2 professors were required to teach on unassigned nights and pass on the burden to students who had to come to campus for extra classes in order to enjoy the collaborative experience. While their positive attitude and pre-planning helped ease this burden, it would have been ideal if the university was able to recognize the collaboration model within the College and have the flexibility to schedule the classes accordingly.

It is laudable that the College acknowledged the need for innovative methods of teaching across disciplines by offering a grant as incentive, but much needs to be done for the university to truly support this unique style of teaching. In order to expand the work started by our four professor participants, next steps include offering professor training on collaboration techniques including past grant recipients sharing their experiences and learnings with their colleagues, and interdepartmental tasks that bridge the gap between historically distinct departments. With university planning, support, and encouragement, professors will not have to worry about scheduling problems if they accept the need for collaboration; they will only need to concentrate on planning and teaching their course. On the first night of class, all students will enter the classroom listed in the schedule of classes, find the two professors whose names are listed as the professors of record, one syllabus with merged content requirements and one set of grading and

performance expectations for all students. In this way, the university will model acceptance and expectation of collaborative teaching while creating a friendly environment where this model of teaching is a normative practice. With university policies and procedures in place regarding the establishment of collaborative courses, it will be up to the professors to model various collaborative techniques, passing on valuable lessons to students.

Direct teaching and modeling: Purposefully teaching collaboration and positive attitudes.

It is impossible to directly compare and contrast Studies 1 and 2 due to the fact the courses had different content, professors, and student populations. The only commonalities are that both professor dyads and courses were cross curricular education courses, one of which was housed in the division of special education.

When discussing the two studies and their differences, it is important to take into consideration the possible impact of professor personality on the collaborative effort and the course content on attainment of disability knowledge. Mastropieri and colleagues (2005) found that personality is likely to be one of, if not the most important factor in successful co-teaching relationships. Some personalities and combination of personalities lend themselves to working in groups and others might lend themselves better to working alone. Without comparing the same professors in various dyads it is impossible to know how personality played a role in Study 1 and 2 in terms of establishing a working relationship with another professor and the impact of individual and dyad personality combinations. We do know that Quinn and Sasha worked together previously, indicating that they previously established a working relationship worthy of continuing as they pursued collaborative teaching a second time. Anne and Chris, however, taught together for the first time in Study 1. As they did so, they learned about one another, their

teaching styles, and possibly about themselves and their ability and willingness to work with other faculty in a collaborative effort.

Taking these differences in collaborative experience and relationship history between the professors in the two studies into consideration, my main interests are in the process of professor collaboration; the planning and execution of a collaborative course, and student outcomes in terms of a hypothesized shift in opinion or attitude towards collaboration and including children with disabilities in general education courses. Through this lens and considering the variables outside our control, we can look at these two very different cases and using the data we do have, comment on their outcomes.

Study 1. Despite the fact Study 1 courses were actually separate classes housed in two departments, that they met on the same night and time could have allowed the professors an opportunity to create a true collaboratively taught course by planning ahead and instituting measures that unify two courses such as a single syllabus and presenting an established meta-course including all students and both professors. Multiple data sources showed student confusion and, at times, frustration about the collaborative model due to different syllabi, little to no communication about the course model ahead of time, late meta-course establishment, differing perceived professor expectations, and the method of material presentation. In reality, Study 1 professors merged similarly themed courses while demonstrating the one teach, one assist model of collaboration. Although provided the opportunity, they did not fully utilize the infusion model of disability instruction as the professors taught their course true to the content requirements as dictated by their respective departments. Surely, by nature of having a special education instructor and students present, disability related knowledge was taught and shared throughout the quarter to their general education counterparts, but relegated largely to periods of

time when Chris, the SPE professor, was teaching. Similarly, collaboration was not explicitly discussed, it was simply the method by which Chris and Anne taught their course; students learned about collaboration by watching and taking part in this class. Findings suggest that students appreciated the opportunity to learn from being a part of a collaboratively taught class. However, understanding that Study 1 was not designed to teach specific disability knowledge or collaboration specific content, on repeated measures surveys, none of the findings indicate that students felt that they had learned significantly more about disability or were more willing to collaborate for the purposes of inclusion as a result of this course. These are not surprising findings as Chris and Anne followed the prescribed curricula which did not specifically include integration of the benefits of collaboration or disability specific content. Post-course measures suggest that in the future, SPE students are more open to taking co-taught classes than their GE counterparts which is also not surprising given that special educators are expected to collaborate in the workplace; a concept foreign to most general education hopefuls.

Despite participant concerns and lackluster results from survey measures, responses in focus groups and the post-course survey indicate that most respondents were willing to take another collaborative class due to the benefit from hearing multiple perspectives on one topic and, to a lesser degree, to have the ability to observe collaboration modeled before the expectation of putting it practice. From this perspective, students witnessed Anne and Chris improve their collaboration skills over the course and were, as a result, successful in promoting the concept of collaborative teaching. They ultimately provided valuable lessons to their students for when they too must professionally collaborate to facilitate inclusion in the workplace. Hopefully, participants' criticisms of the course execution will be remembered in their future practice and used as lessons learned, and that the professors too will take them to

heart as they, hopefully, continue to promote professional collaboration at SU. In a traditional course, the goal is mastery of academic content. Assuming that goal was met in Study 1, the additional benefit of “teaching” collaboration by modeling the behavior adds to Anne and Chris’s effectiveness and makes them pioneers in their field. It is important to acknowledge that over the 10-week course, Anne and Chris’ comfort and proficiency with collaboration appeared to improve. The observation of this change is valuable particularly to new collaborating professors and teachers as they begin planning and teaching in a way foreign to their experiences and training.

Study 2. As in Study 1, Study 2 professors had departmental approval to collaborate, however due to the cancellation of the GE class that originally met on the same night as the SPE class, the classes were nevertheless scheduled on different nights posing hardships for all participants due to class conflict for students and the need to be on campus for hours otherwise not required for the professors. These hardships actually prevented students from participating in the joint sessions, diminishing the overall benefit of the work and dedication required of the professors in this collaborative endeavor. It was also noted across multiple data sources that the small rooms originally assigned to each professor prevented an optimal learning experience. Despite these difficulties, the creation of joint sessions allowed participants the opportunity to attend portions of class that were indeed co-taught and brought the same students back week after week for this voluntary experience.

We know from the professor email interview that from the beginning, the professors intended to not only teach the prescribed content of the class, but also to show collaboration in practice and transfer the benefits of mixed student population to professional practice. In order to accomplish these additional goals, observations and document review show the detailed planning ahead of each class in order to create a collaborative and inclusive environment which

started before the first class and continued through the end of the quarter. Ongoing communication between the professors indicated their support and interest in each other's joint session presentation which spilled into observed presentations that heavily emphasized the importance of collaboration among professionals and the benefits and methods of working with students of varying ability in an included setting. Infusing disability related knowledge via lecture and in group work reinforced the importance of learning about disability and being able to teach children with various needs. For example, during a GE lecture on language analysis in Week 6, Quinn showed the video "The Central Park 5." Utilizing language samples from five young men featured in the film, Quinn pointed out that one of the men has a hearing impairment which affects his ability to process and produce language. In this way, the topic of hearing impairments was included in GE lecture, discussion and the corresponding assignments. These efforts were rewarded with survey data indicating significant differences over the course of the quarter in GE participant knowledge gained regarding various disabilities. Focus group and survey data reflected this effort as participants noted that they enjoyed joint sessions in terms of information learned, presentation of collaborative model, and access to experiences (learning center), materials, and professors from other departments. Students' attitudes toward collaboration and inclusion also greatly improved, likely a result of their professors' modeling. Communication in class and online were collaborative and frequent in nature beginning with the meta-course which was utilized before the quarter to make introductions, explain the course model, and make materials available to all students. The professors almost exclusively used the pronouns "we" and "ours" instead of "I" and "mine" when referring to their presentations or students. Students were referred to as "colleagues" and thanked weekly for participation and for helping each other. Participants reflected this effort in survey and focus group responses as

professors were both viewed as experts in their field; similarly, participants grew to respect their classmates as professionals with different but equally important roles in education of all students. It is possible that the apparent dedication to collaboration and teaching disability is due, at least in part, to the fact that Quinn and Sasha previously taught a collaborative courses and that both professors have experience teaching students with and without disabilities. Focus groups and survey responses indicated that overall, the greatest concern about this course was that the joint sessions were too few due to scheduling difficulties and that the university should make attending such a class a requirement for all future educators.

Overall outcomes. Study 1 and 2 were quite different in their presentation and student response, however, at the end of the day, valuable gains were made regardless of the model. While educational and attitudinal outcomes were more promising in Study 2, participants from both classes understood the value in being a part of this program. In short, there is an academic and attitudinal benefit in taking a collaborative class regardless of professor combination or presentation as almost all students came to recognize collaboration as a workplace reality and valued the modeling and opportunities that arose from being a participant. A comparison of the two studies shows us that modeling collaboration can powerfully impact negative attitudes toward disability, collaboration, and inclusion. Importantly, as demonstrated by Study 2 findings, collaboration need not occur weekly to show a positive outcome. It should be noted that modeling collaboration and infusing disability specific knowledge in lecture and group work provides the opportunity to teach disability to students who might otherwise only receive minimal instruction. In order to maximize the impact of the collaboration model, we must remember to explicitly remind students that collaboration is a workplace reality; otherwise the lessons and opportunities presented might be ignored. This direct and indirect teaching

methodology can in turn shape student attitude and knowledge about disability and collaboration as students learn content specific to their course.

Students, regardless of whether they like the professors, the class, or the material, see the value in this method of pre-service education. It is my hope that by the end of their programs, students will emerge not only with a teaching certificate but also the ability to work with colleagues and teach all students, regardless of ability which is especially important in the current climate of inclusion of students with disabilities. We have seen from the two studies that this is possible to varying degrees despite barriers. These studies should help encourage the practice of collaboration across education disciplines in an effort to effectively teach pre-service educators methods and the value of collaboration while arming them with knowledge of disability and special education practices.

As I reflect on these cases, I ask myself, “In what other profession do we put people in the field without adequate training?” Doctors, lawyers, accountants, therapists; all of these professionals must endure rigorous training in terms of higher education or apprenticeship before being able to practice their craft. Considering teaching is a profession that also requires specialized higher education, why is it acceptable to put teachers in a situation (collaboration) with little to no training where the ultimate effect is on our children’s education? Let’s stop the practice, learn from these cases, and continue to add to this body of literature in an effort to enhance teacher pre-service programs to make the field of education equivalent to other professions in terms of training expectations.

Limitations

Due to the nature of Studies 1 and 2, there are methodological limitations inherent to the method of selection and study of the cases. The small number of cases analyzed makes

generalization of findings unfeasible, although the goal of this dissertation was to contribute to a small body of literature. The selection of the cases, should be noted, was due to happenstance rather than through the use of specific selection criteria. Heterogeneity of participants in each course (i.e., blend of graduate and undergraduate students in each course) prohibits discussion of the impact of previous experiences or focal area of study as it relates to participant responses. Additionally, it would have been ideal to study the professors teaching the same collaborative class during two different quarters; but due to the grant applicant pool and course availability constraints, documenting two cases was limited to distinct courses and professors. Differing study goals (evaluative versus dissertation study) caused inconsistency in data collection (i.e., email exchanges were collected in Study 2 but not Study1) making it impossible to compare and contrast like data sources.

Focus group selection was a limitation in both studies. Because Study 1 was designed and executed for evaluative purposes, much was pre-determined by the professors. For example, all participants attended a focus group session, but the assignment of students with similar teaching goals (GE v SPE rather than mixed groups) was done by the professors. Study 2's focus group meeting time was complicated by the professors who did not wish to utilize class time to conduct multiple focus groups; only those students who wished to attend on their own time during a class break did so, resulting in an imbalanced mixed group of only seven participants.

The relatively small number of participants in each class section resulted in reduced statistical power in survey analysis making it difficult to determine the true effect of the course on participant knowledge and attitude change over time. Unfortunately, due to the nature of these courses, class sizes are relatively small, limiting options for quantitative data analyses.

Luckily, questions about attitude and knowledge shifts can be addressed using other data sources.

It is a limitation that outside of direct observation and questions posed via email to professors in Study 2, data were not collected about the professors' attitudes and beliefs about collaboration. This may have impacted the way in which they collaborate with another teacher and pass on collaboration information to their students.

Data regarding the infusion method of teaching was not explicitly collected throughout the observation periods. Use of the infusion model by Sasha and Quinn was not discussed; it was simply a method of teaching that came naturally to them. Utilization of it was recognized during the data analysis phase of the study.

Lastly, the quantitative data did not always match participant responses from focus groups or open ended questions. It is possible that the Likert scales were not sensitive or complex enough to capture participant sentiment or that there was insufficient power due to the small number of participants. While I do not discount the significant findings regarding an increase of disability knowledge for GE participants in Study 2, I do believe that in this type of research where observation, focus groups and open ended responses are so rich with information, these types of measures should take precedence in data collection, examination, and interpretation.

Because the literature base specifically addressing collaborative teaching case studies at the post-secondary level is relatively narrow, despite these limitations, this case study provides valuable contributions to expanding the literature. Anne, Chris, Sasha and Quinn are trailblazers in education; their successes and difficulties can help guide future and current collaborating professors as well as the universities who allow for and encourage such inspired practices.

Implications for Research

Considering the small number of cases in this study, further examination of the process and effect of professor collaboration in pre-service programs is necessary to document effects of the use of collaboration models in pre-service, cross curricular classrooms. Consistency in data collection method and measures would be helpful to more accurately compare effects of the model on students' knowledge gained and attitudes and beliefs about inclusion and disability as a result of participation in collaborative classes. Studies of professors and students who participate in collaborative courses over longer periods of time would be beneficial to add to the literature. The systematic examination of professor dyads over time is scant at best. Longitudinal research of professor dyads might shed light on the process and development of professional relationships and effective methods of teaching collaboratively as they develop over time informing policy and procedure for future collaborative education courses. Following student participants as they complete coursework, and ultimately into the workplace, would document long-term effects of their experience which may have widespread implications for policy and practice at the pre-service level.

Implications for Practice

Observation of two collaboratively taught pre-service courses within an education department has implications for determining potential benefit and best practices for collaboration implementation and outcomes for students including an increase in knowledge about disability and willingness to collaborate for the purposes of inclusion. Findings illustrate great potential to help guide pre-service institutions and their professors in the creation of collaborative programs for special and general education pre-service educators. University administration's support as

well as professor planning and modeling of collaborative techniques is essential to a successful collaborative experience.

Administrative support in the form of a teaching incentive was crucial for getting these innovative classes implemented. Administrators of university pre-service programs should consider how courses are being taught at their institutions to pre-service educators that enforce the importance and potential benefits of collaboration, teaching methods of collaboration by modeling, in addition to the depth of disability content, specifically in general education classes. Findings from these cases imply that collaborative teaching can help remedy what may be gaps in an education department's course offerings and delivery methodology regarding best practices in professional collaboration, inclusion, and disability awareness.

In order to help facilitate the success of collaboratively taught courses, administrators should recognize the importance of scheduling class meetings concurrently to minimize scheduling conflict for students and time hardship for the professors. When creating the course catalogue and schedule of classes, one course description (for both courses), one room assignment, and both professor names listed would eliminate the student confusion reported in these case studies. Administrator's behind the scenes work before the start of a course can greatly improve the collaborative experience for professors and students alike.

Given administration's permission and support, education professors have the unique opportunity to teach collaboration by simply modeling it in their own practice. Professors should recognize that by modeling various methods of collaboration in class, students will learn by observing and likely accept or, at least, not reject, collaborative models as practice in their own classrooms. By using the infusion model of teaching about disability or inclusion, general education students will gain a better understanding of special education teacher responsibilities

and have access to an expanded knowledgebase often neglected or minimized in pre-service programs. The infusion of disability knowledge and collaboration techniques may require additional training for professors, specifically those who typically teach non-special education coursework. Training for all professors across the department should include practices such as merging syllabi, explaining the class model in the course description, and how to create a meta-course. These measures might have a great initial impact on students' perception of collaboration and taking collaborative courses. Implementation of these measures would provide for a smooth first night of class and the collaborative model would be an expectation rather than a surprise. As seen in Study 2, professors' knowledge, pre-planning and enthusiasm about including children with disabilities through collaborative models was possibly the greatest contributing factor to positive student outcomes.

With administration and professors on board, findings from these cases suggest potential for academic, attitudinal and professional benefits in the use of collaboration among professors and students across education disciplines. Increased training opportunities for professors of pre-service teachers and school trainings for in-service teachers can help bridge the information gaps about the benefits of collaboration and importance of disability knowledge and inclusion.

Lessons Learned

As I wrote previously, there were some difficulties conducting this study being an "insider," particularly due to the fact that I was previously a lecturer at SU. Although I took measures to reduce my own bias in the findings, if I were to replicate this study, I would do a few things differently. First and foremost, I would not conduct a study in a university where I had been previously employed. The personal connection to the school, professors, and students made it difficult to report findings, particularly those that were not entirely positive.

Secondly, although this study followed qualitative techniques endorsed by Creswell (2007) regarding the development and acceptance of codes and themes, in the future, I would consider measuring interrater reliability more stringently by formally coding observation transcripts with a colleague and calculating percent agreement. In order to facilitate this process, I would ask permission to video record the professors in class so that field notes can be referenced during my regular debriefing sessions. In this way, events overlooked or minimally described in my note taking can be considered and we would have the possibility to include a visual reference to classroom events when discussing and implementing codes to the written field note transcripts.

Underutilized in these studies is the professors' insight regarding the experience of collaborating with a colleague to plan and teach a class together. Ongoing questionnaires or interviews might provide valuable insight into the development of professors' relationships with one another, comfort with their teaching model, rationale for changes made during the quarter, etc. Background information collected before the start of the class such as past teaching experiences, personal views on inclusion and collaboration, trainings received, and personal experiences with people with disabilities would be helpful when examining the dyad relationship, collective personality, and presentation of disability and collaboration related material to students.

Lastly, before the beginning of the course, a meeting with the professors would be helpful to determine the timing and method of giving the pre- and post-course surveys and the creation and execution of the focus groups. In this way, attrition rates might decrease and information gathered from each data source can be compared across studies if the timing and execution methods are consistent.

With reduced personal bias, stricter reliability controls, data collection consistency, and additional information about professors included, future studies on the topic of collaboration across the special-general education continuum will be rich with information to help build this small but important body of literature.

Tables

Table 1

Gender and Ethnic Composition of College of Education Students: Study 1

		African American n(%)	Asian n(%)	Hispanic/ Latino n(%)	White n(%)	Other n(%)	Total n(%)
General Education	Male	0(.00)	0(.00)	0(.00)	0(.00)	0(.00)	0(.00)
	Female	1(4.55)	0(0)	6(27.27)	1(4.55)	2(9.09)	10(45.46)
Subtotal		1(4.55)	0(0.00)	6(27.27)	1(4.55)	2(9.09)	10(45.46)
Special Education	Male	0(.00)	0(.00)	2(9.09)	0(.00)	0(.00)	2(9.09)
	Female	0(.00)	3(13.64)	2(9.09)	2(9.09)	3(13.64)	10(45.46)
Subtotal		0(0.00)	3(13.64)	4(18.18)	2(9.09)	3(13.64)	12(54.55)
Total		1(4.55)	3(13.64)	10(45.46)	3(13.64)	5(22.73)	22(100)

Table 2

Gender and Ethnic Composition of College of Education Students: Study 2

		African American n(%)	Asian n(%)	Hispanic/ Latino n(%)	White n(%)	Other n(%)	Total n(%)
General Education	Male	0(.00)	1(3.45)	5(17.24)	2(6.89)	1(3.45)	9(31.03)
	Female	1(3.45)	0(.00)	2(6.89)	3(10.35)	1(3.45)	7(24.14)
Subtotal		1(3.45)	1(3.45)	7(24.13)	5(17.24)	2(6.89)	16(55.17)
Special Education	Male	0(.00)	0(.00)	0(0.0)	0(.00)	1(3.45)	1(3.45)
	Female	1(3.45)	2(6.89)	8(27.59)	0(.00)	1(3.45)	12(41.38)
Subtotal		1(3.45)	2(6.89)	8(27.59)	0(0.00)	2(6.90)	13(44.83)
Total		2(6.90)	3(10.35)	15(51.72)	5(17.24)	4(13.80)	29(100)

Table 3

Participant Attrition

	Study 1		Study 2	
	<u>GE</u>	<u>SPE</u>	<u>GE</u>	<u>SPE</u>
Number of Students				
Enrolled in Course	11	12	19	30
Consented	11	12	17	24
Completed Measures	10	12	16	13

Table 4

Summary of Measures

Study 1		Study 2	
Measure	Data Collection Timing	Measure	Data Collection Timing
Observations	Weekly	Observations	Weekly
Pre-Course Survey	Week 1	Pre-Course Survey	Week 1
Post-Course Survey	Week 10	Post-Course Survey	Week 10
Focus Groups	Week 6	Focus Groups	Week 8
Document Review	Ongoing	Document Review	Ongoing
		Professor Email	After last class
		Interview	

Table 5

Explanation of Themes and Data Sources

Theme	Professor modeling is a teaching tool.
Explanation	By teaching a collaborative course, professors model methods of collaboration, providing role models for students and passing on valuable information.
Data Source:	
Observations	<i>Observations revealed that when talking to students during lecture or activities, they (Sasha and Quinn) said “we” referring to themselves as a teaching unit. (page XX)</i>
Focus Groups	<i>In the field, all of a sudden it’s like we have to collaborate and it’s like I’ve never collaborated and I don’t know what to do. At least now I have some kind of clue and some idea. Study 2 SPE participant (page XX)</i>
Open Ended Response	<i>(Sasha and Quinn) were role models for collaboration. Study 2 GE participant (page XX)</i>

Theme	Opportunities and gratitude provide an enhanced learning experience.
Explanation	By having two professors with different expertise and campus/community connections, students who otherwise might not have access to opportunities can gain valuable knowledge and experience. Showing appreciation for one another across disciplines might be a key to encouraging students to embrace new opportunities and information.
Data Source:	
Observations	Sasha had a connection to the Learning Center (LC), an on campus classroom established to give pre-service teachers an opportunity to teach under the guidance of professors while providing an educational weekend experience for local school children. (page XX)
Focus Groups	<i>I learned a lot of material about special education that I didn’t learn in general education classes and had a chance to look at (other teachers’) point of view. Study 1 GE participant (page XX)</i>
Open Ended Response	<i>I definitely gained more from collaborating with colleagues who are experts in another field. Study 2 GE participant (page XX)</i>
Document Review	In an email from Sasha and Quinn to students, “ <i>Thank you for your welcoming attitudes, open minds, and great comments and thoughts.</i> ” (page XX)
Professor Survey	<i>I was so grateful when the students came on the nights when they did not have a class! Study 2 SPE professor (Page XX)</i>

Theme	Attitude is infectious.
Explanation	Throughout the courses, professors interjected comments and/or actions that were indicative of their attitude toward collaboration, inclusion and disability. Students, taking their lead, often adopted professors' positive or negative attitudes.
Data Source:	
Observations	<i>Week 6 saw Anne and Chris joking, laughing and appearing noticeably more comfortable with one another as co-teachers.</i> Study 1 (page XX)
Focus Groups	<i>"They don't want to answer questions directly because they don't want to step on each other's toes".</i> Study 1 GE participant (page XX)
Open Ended Response	A Study 2 GE participant noted that s a result of collaboration on class projects, he <i>"greatly values the input of special educators."</i> (page XX)
Survey Measures	On the IAS, within subjects analyses indicate a significant main effect due to time for the Study 2 GE group indicating that GE participants' attitude towards inclusion improved over the period of the 10 week course. (page XX)
Document Review	<i>Before the beginning of the quarter, Quinn and Sasha emailed back and forth discussing the finer points of the first joint sessions. Email responses included pleasantries, praise, and appreciation for their collaborative efforts.</i> Study 2 (page XX)
Professor Survey	<i>Sasha explained the importance of providing an opportunity to develop a positive attitude toward professional collaboration by experiencing a positive experience in which they model collaboration in a university class setting: 'General ed teachers and special ed teachers should have an opportunity to take a class together at a later point (when they have more professional knowledge) and in the context of a smaller class (that would promote discussions). I am convinced that they need to have this experience to dispel the mystery of each other's expertise.'</i> (page XX)

Theme	Overcoming barriers requires commitment.
Explanation	Individuals as well as the university presented barriers to optimal implementation of the collaborative courses. Professors' commitment to create the best possible experience for students showed that barriers can be overcome.
Data Source:	
Observations	<i>Observations revealed that Anne referred to the courses as two separate entities and went so far as to explain that students must see "their professor" for questions and clarification.</i> Study 1 (page XX)
Focus Groups	Due to scheduling difficulties, one Study 2 SPE student said that

	they wanted more time to collaborate with the GE cohort as it was <i>'hard to build relationships with (them) in a short period of time.'</i> (page XX)
Open Ended Response	(page XX)
Document Review	<i>A review of the syllabi showed that while nearly identical in content, there were differences that contributed to confusion. Study 1</i> (page XX)
Professor Survey	When asked about barriers to teaching their course, Sasha and Quinn wrote that they recognized the scheduling difficulties as a barrier to instruction because they planned for their courses to run concurrently so they could include all students in the joint sessions. (Page XX)

Table 6

Change in Knowledge of Disability over Time

		<u>Study 1</u>				<u>Study 2</u>			
		Pre(μ)	Post(μ)	Diff(μ)	<i>p</i>	Pre(μ)	Post(μ)	Diff(μ)	<i>p</i>
ADHD	GE	1.90	2.30	0.40	0.295	2.38	2.56	0.18	0.530
	SPE	2.83	3.25	0.42	0.143	3.15	3.00	-0.15	0.613
AUT	GE	2.00	2.40	0.40	0.494	1.81	2.81	1.00	0.001
	SPE	3.33	3.67	0.34	0.457	2.69	3.23	0.54	0.089
DHH	GE	1.60	2.00	0.40	0.309	1.88	2.44	0.56	0.034
	SPE	2.08	2.83	0.75	0.108	1.69	1.77	0.08	0.794
ED	GE	2.10	2.60	0.50	0.322	2.06	2.63	0.57	0.003
	SPE	2.42	2.75	0.33	0.305	2.69	3.15	0.46	0.111
ID	GE	2.00	2.30	0.30	0.576	2.06	2.50	0.44	0.203
	SPE	3.42	3.67	0.25	0.643	2.62	2.85	0.23	0.387
SLD	GE	2.30	2.60	0.30	0.496	2.31	3.13	0.82	0.003
	SPE	3.50	3.42	0.08	0.881	3.39	3.46	0.07	0.721
VI	GE	1.70	2.30	0.60	0.081	1.69	2.56	0.87	0.014
	SPE	2.30	2.92	0.620	0.317	1.69	1.77	0.08	0.819

Note. ADHD = Attention Deficit Hyperactivity Disorder; AUT = Autism; DHH = Deaf and Hard of Hearing; ED = Emotional Disabilities; ID = Intellectual Disabilities; SLD = Specific Learning Disabilities; VI = Visual Impairment.

Table 7

ANOVA Table: Change in Knowledge of Disability over Time

	Study 1				Study 2			
	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>p</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>p</i>
ADHD x Enrollment	1	9.673	8.318	.009	1	5.306	2.457	.129
ADHD x Time(GE)	1	.800	1.161	.309	1	.281	.413	.530
ADHD x Time(SPE)	1	1.042	1.211	.295	1	.154	.270	.613
Interaction	1	.001	.001	.975	1	.418	.661	.423
AUT x Enrollment	1	18.436	8.535	.008	1	6.043	3.003	.095
AUT x Time(GE)	1	.800	.507	.494	1	8.000	17.143	.001
AUT x Time(SPE)	1	.667	.595	.457	1	1.885	3.419	.089
Interaction	1	.012	.009	.925	1	.764	1.515	.229
DHH x Enrollment	1	4.728	3.084	.094	1	2.597	1.366	.253
DHH x Time(GE)	1	.800	1.161	.309	1	2.531	5.448	.034
DHH x Time(SPE)	1	3.375	3.062	.108	1	.038	.071	.794
Interaction	1	.334	.365	.553	1	.846	1.700	.203
ED x Enrollment	1	.594	.748	.397	1	4.814	1.698	.204
ED x Time(GE)	1	1.250	1.098	.322	1	2.531	12.789	.003
ED x Time(SPE)	1	.667	1.158	.305	1	1.385	2.959	.111
Interaction	1	.076	.091	.766	1	.037	.115	.737
ID x Enrollment	1	21.128	11.266	.003	1	2.899	1.193	.284
ID x Time(GE)	1	.450	.336	.576	1	1.531	1.771	.203
ID x Time(SPE)	1	.375	.228	.643	1	.346	.806	.387
Interaction	1	.007	.005	.947	1	.153	.228	.637
SLD x Enrollment	1	11.092	7.177	.014	1	7.116	3.108	.089
SLD x Time(GE)	1	.450	.503	.496	1	5.281	12.739	.003
SLD x Time(SPE)	1	.042	.024	.881	1	.038	.133	.721
Interaction	1	.401	.291	.595	1	1.940	5.412	.028
VI x Enrollment	1	4.261	2.738	.114	1	2.229	1.364	.253
VI x Time(GE)	1	1.800	3.857	.081	1	6.125	7.737	.014
VI x Time(SPE)	1	2.042	1.098	.317	1	.038	.055	.819
Interaction	1	.001	.001	.980	1	2.284	3.033	.093

Note. ADHD = Attention Deficit Hyperactivity Disorder; AUT = Autism; DHH = Deaf and Hard of Hearing; ED = Emotional Disabilities; ID = Intellectual Disabilities; SLD = Specific Learning Disabilities; VI = Visual Impairment.

Table 8

Change in Willingness to Collaborate to Include Students with Disabilities over Time

		<u>Study 1</u>				<u>Study 2</u>			
		Pre(μ)	Post(μ)	Diff(μ)	<i>p</i>	Pre(μ)	Post(μ)	Diff(μ)	<i>p</i>
ADHD	GE	3.60	3.60	.00	1.00	4.38	4.38	.00	1.00
	SPE	4.33	4.08	-.25	.555	4.69	4.54	-.15	.165
AUT	GE	3.60	3.10	-.50	.397	4.13	4.13	.00	1.00
	SPE	4.33	3.92	-.41	.408	4.54	4.46	-.08	.337
DHH	GE	3.90	3.20	-.70	.257	4.13	4.31	.18	.456
	SPE	4.50	4.25	-.25	.536	4.23	4.15	-.08	.584
ED	GE	3.90	3.30	-.60	.279	4.25	4.06	-.19	.530
	SPE	4.17	4.00	-.17	.732	4.46	4.15	-.31	.104
ID	GE	3.90	3.20	-.70	.173	4.38	4.06	-.32	.060
	SPE	4.42	4.25	-.17	.674	4.23	4.08	-.15	.165
SLD	GE	3.90	3.70	-.20	.591	4.44	4.31	-.13	.497
	SPE	4.67	4.33	-.34	.339	4.69	4.54	-.15	.165
VI	GE	3.60	3.30	-.30	.656	4.19	4.19	0.00	1.00
	SPE	4.42	4.08	-.34	.474	3.77	3.77	0.00	1.00

Note. ADHD = Attention Deficit Hyperactivity Disorder; AUT = Autism; DHH = Deaf and Hard of Hearing; ED = Emotional Disabilities; ID = Intellectual Disabilities; SLD = Specific Learning Disabilities; VI = Visual Impairment.

Table 9

ANOVA Table: Change in Willingness to Collaborate to Include Students with Disabilities over Time

	Study 1				Study 2			
	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>p</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>p</i>
ADHD x Enrollment	1	4.037	3.197	.089	1	.829	1.084	.307
ADHD x Time(GE)	1	.000	.000	1.000	1	.000	.000	1.000
ADHD x Time(SPE)	1	.375	.371	.555	1	.154	2.182	.165
Interaction	1	1.056	.161	.692	1	.085	.335	.568
AUT x Enrollment	1	6.552	4.492	.047	1	2.017	1.534	.226
AUT x Time(GE)	1	1.250	.789	.397	1	.000	.000	1.000
AUT x Time(SPE)	1	1.042	.741	.408	1	.038	1.000	.337
Interaction	1	.019	.013	.911	1	.021	.040	.844
DHH x Enrollment	1	7.425	6.578	.018	1	.010	.006	.940
DHH x Time(GE)	1	2.450	1.465	.257	1	.281	.584	.456
DHH x Time(SPE)	1	.375	.407	.536	1	.038	.316	.584
Interaction	1	.552	.439	.515	1	.251	.780	.385
ED x Enrollment	1	2.548	2.596	.123	1	.329	.177	.678
ED x Time(GE)	1	1.800	1.328	.279	1	.281	.413	.530
ED x Time(SPE)	1	.167	.124	.732	1	.615	3.097	.104
Interaction	1	.512	.378	.545	1	.052	.111	.742
ID x Enrollment	1	6.694	5.192	.034	1	.060	.031	.861
ID x Time(GE)	1	2.450	2.194	.173	1	.781	4.310	.055
ID x Time(SPE)	1	.167	.186	.674	1	.154	2.182	.165
Interaction	1	.776	.780	.388	1	.090	.684	.416
SLD x Enrollment	1	5.345	4.242	.053	1	.829	.988	.329
SLD x Time(GE)	1	.200	.310	.591	1	.125	.484	.497
SLD x Time(SPE)	1	.667	1.00	.339	1	.154	2.182	.165
Interaction	1	.048	.074	.789	1	.003	.017	.897
VI x Enrollment	1	6.982	6.999	.016	1	2.510	1.067	.311
VI x Time(GE)	1	.450	.213	.656	1	.000	.000	1.000
VI x Time(SPE)	1	.667	.550	.474	1	.000	.000	1.000
Interaction	1	.003	.002	.966	1	.000	.000	1.000

Note. ADHD = Attention Deficit Hyperactivity Disorder; AUT = Autism; DHH = Deaf and Hard of Hearing; ED = Emotional Disabilities; ID = Intellectual Disabilities; SLD = Specific Learning Disabilities; VI = Visual Impairment.

Appendix A

Student Consent Form

Co-Teaching Across Education Curricula

To Project Participant:

You are invited to take part in a research project conducted by a doctoral student in a joint doctoral program in special education between California State University, Los Angeles and University of California Los Angeles. In this study we hope to learn more about the co-teaching process as well as your opinions and feelings about co-teaching, collaboration, and issues related to collaborative education practices among general and special education degree candidates at the university level. You were selected to participate in this study because you are currently enrolled in a co-taught class. We hope that our research will lead to a better understanding of the co-teaching process at CSULA for both the professors who teach the courses and the students who are enrolled in them.

Participants will be expected to participate in two survey administrations, one at the beginning of the quarter and one at the end, and a focus group which will be conducted half way through the quarter. Throughout the quarter, the researcher will make classroom observations during scheduled lecture hours.

Each survey administration should take approximately 10-20 minutes and will be given prior to the break during class time in weeks one and ten of the quarter. Instead of names, anonymous codes will be used to link surveys. Only the researcher will have access to these codes. Those who choose not to participate in the study or specifically, the surveys will be able to begin their break during this time. The focus groups will take place mid-quarter and should take approximately 20 minutes. Focus group discussions will be audio recorded for transcription. Written transcripts may be shared with the co-teaching professors of the course at the request of the professors. In order to ensure confidentiality outside of the focus group and in the audio and written transcriptions, participant names and identifiers will not be used in the conversation or transcription. All participants will be asked to keep what is said during the focus group between the participants only. However, complete confidentiality cannot be guaranteed. Those who opt not to participate in the study or specifically the focus groups will remain in the class for the activity that the professors have designed during this time. If a participant chooses to withdraw from the study after data has been collected via focus groups, their surveys will be withdrawn, however, their focus group responses will remain as the focus groups will not use the anonymous codes for participant identification.

Minimal risks to the participants are associated with this research. The surveys will be confidential; an anonymous code will be created for the purposes of the survey administration. No names will be recorded or associated with the student created anonymous codes. The focus groups will be confidential in that participants will not be identified by name or otherwise during the focus group meetings or in transcriptions. The anonymous codes used for the surveys will not be linked to focus group participation.

Reports resulting from this study will not identify you as a participant. All information gathered in this study will remain confidential and be given out only with your permission or as required by law. If you give us permission by signing this consent form, we will protect your confidentiality. The surveys and recordings from the focus groups will not include participants' name or personal identifiers and will be kept in the office of the researcher's adviser, locked in a file cabinet, on the University of California, Los Angeles campus. All surveys and focus group recordings will be destroyed no less than three years after the completion of the study. Because all surveys and recordings will be confidential, they may be used in the researcher's home in accordance with the law. All of the researcher's computer files will be password protected to ensure data security.

If you have any questions about this research at any time, please call or write:

Talya Drescher (Principal Investigator)
Doctoral Candidate, CSULA, UCLA
California State University, Los Angeles
5151 King Hall
Los Angeles, CA 90032
(323) 343-4000
talyalouise@ucla.edu

Dr. Sandra Graham (Adviser):
Sandra Graham, Ph.D.
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Los Angeles, CA 90095-1521
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You may also contact Dr. Lois Weinberg (Campus Sponsor):
Lois A. Weinberg, Ph.D.
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King Hall C1065
Los Angeles, CA 90032
(323) 343-4399
lweinbe@exchange.calstatela.edu

By signing this consent form you indicate that you have read the form and agree voluntarily to participate in the study. If you choose not to take part there will be no penalty or loss of benefits to which you are entitled. If you agree to take part, you are free to withdraw from it at any time. Likewise, no penalty or loss of benefits to which you are otherwise entitled will occur.

I agree to participate in Co-Teaching Across Education Curricula Project as set out above.

Printed Name

Signature

Date

THIS PROJECT HAS BEEN REVIEWED BY THE CALIFORNIA STATE UNIVERSITY, LOS ANGELES INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS IN RESEARCH. ADDITIONAL CONCERNS AND COMPLAINTS, OR QUESTIONS REGARDING YOUR RIGHTS AS A RESEARCH PARTICIPANT, SHOULD BE DIRECTED TO THE DEAN OF GRADUATE STUDIES AND RESEARCH (Phone number: 323-343-3798).

Appendix B

Professor Consent Form

Co-Teaching Across Education Curricula

To Project Participant:

You are invited to take part in a research project conducted by a doctoral student in a joint doctoral program in special education between California State University, Los Angeles and University of California Los Angeles. In this study we hope to learn more about the co-teaching process as well as your opinions and feelings about co-teaching, collaboration, and issues related to collaborative education practices among general and special education degree candidates at the university level. You were selected to participate in this study because you are currently one of two co-teachers of a co-taught class. We hope that our research will lead to a better understanding of the co-teaching process at CSULA for both the professors who teach the courses and the students who are enrolled in them.

Participating professors will be expected to participate by allowing the researcher to observe planning and teaching of the co-taught class. Throughout the quarter, the researcher will make classroom observations during scheduled lecture hours. Additionally, the professors are expected to allow the students enrolled in the course to participate by taking a pre and post course survey in weeks one and ten and attend a focus group mid quarter.

Each survey administration should take approximately 10-20 minutes and will be given prior to the break during class time in weeks one and ten of the quarter. Instead of names, anonymous codes will be used to link surveys. Only the researcher will have access to these codes. Those who choose not to participate in the study or specifically, the surveys will be able to begin their break during this time. The focus groups will take place mid-quarter and should take approximately 20 minutes. Focus group discussions will be audio recorded for transcription. Written transcripts may be shared with the co-teaching professors of the course at the request of the professors. In order to ensure confidentiality outside of the focus group and in the audio and written transcriptions, participant names and identifiers will not be used in the conversation or transcription. All participants will be asked to keep what is said during the focus group between the participants only. However, complete confidentiality cannot be guaranteed. Those who opt not to participate in the study or specifically the focus groups will remain in the class for the activity that the professors have designed during this time. If a participant chooses to withdraw from the study after data has been collected via focus groups, their surveys will be withdrawn, however, their focus group responses will remain as the focus groups will not use the anonymous codes for participant identification.

Minimal risks to the participants are associated with this research. The surveys will be confidential; an anonymous code will be created for the purposes of the survey administration. No names will be recorded or associated with the student created anonymous codes. The focus groups will be confidential in that participants will not be identified by name or otherwise during the focus group meetings or in transcriptions. The anonymous codes used for the surveys will not be linked to focus group participation.

Reports resulting from this study will not identify you as a participant; the professors will be identified only as "Professor 1" or "P1" and "Professor 2" or "P2." All information gathered

in this study will remain confidential and be given out only with your permission or as required by law. If you give us permission by signing this consent form, we will protect your confidentiality. The surveys and recordings from the focus groups will not include participants' name or personal identifiers and will be kept in the office of the researcher's adviser, locked in a file cabinet, on the University of California, Los Angeles campus. All surveys and focus group recordings will be destroyed no less than three years after the completion of the study. Because all surveys and recordings will be confidential, they may be used in the researcher's home in accordance with the law. All of the researcher's computer files will be password protected to ensure data security.

If you have any questions about this research at any time, please call or write:

Talya Drescher (Principal Investigator)
Doctoral Candidate, CSULA, UCLA
California State University, Los Angeles
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Phone: (310) 206-1205
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You may also contact Dr. Lois Weinberg (Campus Sponsor):
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(323) 343-4399
lweinbe@exchange.calstatela.edu

By signing this consent form you indicate that you have read the form and agree voluntarily to participate in the study. If you choose not to take part there will be no penalty or loss of benefits to which you are entitled. If you agree to take part, you are free to withdraw from it at any time. Likewise, no penalty or loss of benefits to which you are otherwise entitled will occur.

I agree to participate in Co-Teaching Across Education Curricula Project as set out above.

Printed Name

Signature

Date

THIS PROJECT HAS BEEN REVIEWED BY THE CALIFORNIA STATE UNIVERSITY, LOS ANGELES INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS IN RESEARCH. ADDITIONAL CONCERNS AND COMPLAINTS, OR QUESTIONS REGARDING YOUR RIGHTS AS A RESEARCH PARTICIPANT, SHOULD BE DIRECTED TO THE DEAN OF GRADUATE STUDIES AND RESEARCH (Phone number: 323-343-3798).

Appendix C

Pre-Course Survey

1. On a scale of 1-5 (1 = not knowledgeable, 5 = very knowledgeable) how knowledgeable are you about teaching students with the following special needs?

	1	2	3	4	5
Attention deficit hyperactivity disorder					
Autism					
Emotional disabilities					
Hearing impairment (deaf or hard of hearing)					
Intellectual disabilities					
Learning disabilities					
Visual impairment (blindness or low vision)					

2. On a scale of 1-5 (1 = unwilling, 5 = very willing) how willing are you to collaborate with colleagues to include students with the following special needs in your class? If you are not currently teaching, how willing would you be to collaborate to include students with the following special needs in your class?

	1	2	3	4	5
Attention deficit hyperactivity disorder					
Autism					
Emotional disabilities					
Hearing impairment (deaf or hard of hearing)					
Intellectual disabilities					
Learning disabilities					
Visual impairment (blindness or low vision)					

TAIS-A

On the following pages you will find statements of ideas and attitudes about teaching children with special needs in general education classrooms. There are many different opinions about these subjects and I would like to know your personal opinions. There is no right or wrong answer to any of these statements. Please mark an X under the statement that best describes your agreement or disagreement with each statement. Please remember that your responses will be kept confidential.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. The inclusion of students with special needs can be beneficial for students without disabilities.					
2. Students with special needs can be best served in general education classrooms.					
3. General education teachers have the appropriate training to work with students with special needs.					
4. Students with special needs lose the stigma of being “different” or of being “failures” when placed in the general education classrooms.					
5. I am willing to work with a colleague as a co-teacher in an inclusive classroom.					
6. The extra attention students with special needs require will be to the detriment of the other student in the classroom.					
7. The study skills of students with special needs are inadequate for success in the general education classroom.					
8. Inclusion promotes self-esteem among children with special needs.					
9. The behavior of students with special needs will set a bad example for other students in the classroom.					

10. Students with special needs should be given every opportunity to function in the general education classroom where possible.					
11. I know enough about co-teaching/collaboration in order to work with colleagues to include students with special needs in general education classrooms.					
12. It is likely that the students with special needs will exhibit behavior problems in a general education classroom.					
13. Teaching students with special needs is better done by special rather than general education teachers.					

Please fill in the bubble or write in your response for each question about you.

<p>3. I am:</p> <ul style="list-style-type: none"> <input type="radio"/> male <input type="radio"/> female <p>5. My ethnicity:</p> <ul style="list-style-type: none"> <input type="radio"/> Black/African American <input type="radio"/> Asian <input type="radio"/> Latino <input type="radio"/> White/Caucasian <input type="radio"/> Other: Please specify <p>_____</p> <p>7. If yes, in what capacity? (teacher, paraprofessional, assistant, etc.)</p> <p>_____</p>	<p>4. I am currently enrolled in:</p> <ul style="list-style-type: none"> <input type="radio"/> Course A <input type="radio"/> Course B <p>6. Do you have teaching experience?</p> <ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> No <p>8. How much teaching experience do you have?</p> <ul style="list-style-type: none"> <input type="radio"/> None <input type="radio"/> Less than one year <input type="radio"/> 1-2 years <input type="radio"/> 3-5 years <input type="radio"/> 6-10 years <input type="radio"/> More than 10 years
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Appendix D

Post-Course Survey: Study 1

Post-Course Survey

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I enjoyed having two professors in this class.					
2. I received more help in this class than in classes taught by just one professor.					
3. I learn more when I have two professors.					
4. I would like to have two professors in my other classes.					
5. Both professors taught during each class meeting.					
6. Both professors equally understood the course content.					
7. I attended class more regularly because there were two professors.					
8. I worked harder in this class because there were two professors.					

9. What did you enjoy about taking this co-taught class? Please be specific.

10. What did you not like about taking this co-taught class? Please be specific.

11. What appeared to be the role of:

Professor 1:

Professor 2:

12. Do you have anything else you want to say about your co-taught class? Any advice for the future?

Appendix E

Post-Course Survey: Study 2

Post-Course Survey

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I enjoyed having two professors in this class.					
2. I received more help in this class than in classes taught by just one professor.					
3. All students were treated equally.					
4. Both professors in this class had high expectations for my progress and achievement.					
5. I learn more when I have two professors.					
6. I would like to have two professors in my other classes.					
7. I believe that my interests were addressed in this course.					
8. Both professors taught during each class meeting.					
9. Both professors helped all students in the class.					
10. Both professors provided me with support and encouragement.					
11. Both professors equally understood the course content.					
12. Participating in a co-taught class has helped me to understand and value differences in people.					
13. I attended class more regularly because there were two professors.					
14. I worked harder in this class because there were two professors.					

15. What did you enjoy about taking this co-taught class? Please be specific.

16. What did you not like about taking this co-taught class? Please be specific.

17. What appeared to be the role of:

Professor 1:

Professor 2:

18. Do you have anything else you want to say about your co-taught class? Any advice for the future?

Appendix F

Focus Group Questions

1. What was your first response when you found out that this course would be co-taught?
2. Has your response changed since then?
3. What do you see as some of the strengths of this class?
4. What do you see as some of the problems of this co-taught class?
5. Are there things you would like to be learning in this class which are not being covered?
6. What suggestions would you make to the professors to improve the class?
7. Would you take a co-taught class again?

Appendix G

Code Book and Coding Form

Collaboration across Education Curricula: Observation Analysis Codebook

Unit of Analysis: Professor and student communication during each class meeting includes comments, anecdotes, and gestures that indicate attitude toward disability and collaboration as part of, and in addition to general lecture and interpersonal interaction. Codes will be assigned to unique communications that indicate, either passively or directly, an attitude toward disability or collaboration that occur during class lecture. Tally marks on the following coding documents will indicate the number of times each code was employed per class session.

Coding Instructions:

Read through each transcript (one per class meeting) noting the following on each coding form:

1. Indicate which study (Study 1 or Study 2) this sheet is referring to.
2. Indicate which class session is being coded (i.e. Week 1, Joint Session 2).
3. Note coder ID (1 or 2).

The codes used for this project are defined below.

P	Planning	Indicates professor planning ahead of class time. This can be in the form of a prepared handout, reference to online materials that support the lecture, discussion about planning or organizing materials/lecture for class.
NP	No Planning	Indicates disorganization due to lack of planning. This might look like: in class discussion about what comes next, leaving the room to make copies, looking for online references to show class reference material.
CT	Co-teaching	Indicates the professors co-taught or collaborated during lesson implementation. This includes interactions such as integrated professor discussion/lecture, both professors standing at the front of the room, professors answering questions together.
NCT	No co-teaching	Indicates that the professors are not teaching collaboratively. This might take the form of: one professor leaving the room, a professor sitting while the other lectures, etc.
SPD	SPE Professor Positive Attitude: Disability	SPE professor made a comment during lecture that indicates a positive attitude towards disability or teaching children with disabilities.
SND	SPE Professor Negative Attitude: Disability	SPE professor made a comment during lecture that indicates a negative attitude towards disability or teaching children with disabilities.
GPD	GE Professor Positive Attitude:	GE professor made a comment during lecture that indicates a positive attitude towards disability or teaching children with

	Disability	disabilities.
GND	GE Professor Negative Attitude: Disability	GE professor made a comment during lecture that indicates a negative attitude towards disability or teaching children with disabilities.
SPC	SPE Professor Positive Attitude: Collaboration	SPE professor made a comment during lecture that indicates a positive attitude towards collaboration.
SNC	SPE Professor Negative Attitude: Collaboration	SPE professor made a comment during lecture that indicates a negative attitude towards collaboration.
GPC	GE Professor Positive Attitude: Collaboration	GE professor made a comment during lecture that indicates a positive attitude towards collaboration.
GNC	GE Professor Negative Attitude: Collaboration	GE professor made a comment during lecture that indicates a negative attitude towards collaboration.
STPC	Student Positive Attitude: Collaboration	Student made a comment during lecture that indicates a positive attitude towards collaboration.
STNC	Student Negative Attitude: Collaboration	Student made a comment during lecture that indicates a negative attitude towards collaboration.
STPD	Student Positive Attitude: Disability	Student made a comment during lecture that indicates a positive attitude towards disability.
STND	Student Negative Attitude: Disability	Student made a comment during lecture that indicates a negative attitude towards disability.
SF	Student Frustration	Indicates that students are frustrated with some aspect of the collaborative model. This might come in the form of comments, angry questions, refusing to move into groups, etc.

Collaboration across Education Curricula: Class Observation Coding Form

Study: 1 2

Class session: _____

Coder ID: _____

P	
NP	
CT	
NCT	
SPD	
SND	
GPD	
GND	
SPC	
SNC	
GPC	
GNC	
STPC	
STNC	
STPD	
STND	
SF	

Appendix H

Professor Post-Course Email Questions

1. What was your motivation for teaching this class collaboratively?
2. How did it come to be that the two of you were paired for this class? Is there a back story?
3. Did either of you feel that there were barriers to a more effective collaborative effort?

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