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EFFECTS OF ENROLLMENT IN CO-TEACHING CLASSES ON THE ACADEMIC PERFORMANCE OF HIGH SCHOOL STUDENTS WITHOUT DISABILITIES

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EFFECTS OF ENROLLMENT IN CO-TEACHING CLASSES ON THE
ACADEMIC PERFORMANCE OF HIGH SCHOOL STUDENTS WITHOUT
DISABILITIES

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A Dissertation Submitted in Partial Fulfillment of the Requirements
for the Doctor of Philosophy Degree

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DISSERTATION APPROVAL

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Doctor of Philosophy

in the field of Curriculum and Instruction

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AN ABSTRACT OF THE DISSERTATION OF

Linda Elaine Buerck, for the Doctor of Philosophy degree in Curriculum and Instruction, presented on November 12, 2009, at Southern Illinois University Carbondale.

TITLE:

EFFECTS OF ENROLLMENT IN CO-TEACHING CLASSES ON THE
ACADEMIC PERFORMANCE OF HIGH SCHOOL STUDENTS WITHOUT
DISABILITIES

MAJOR PROFESSOR: D. John McIntyre, Professor of Curriculum and
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This study examined the impact of enrollment in co-teaching classes on the grades earned by high school students without disabilities. The study also included analyses of teacher responses to a survey regarding their experience with the co-teaching model at the school. The study sought to examine (1) the extent to which enrollment in co-teaching classes affects academic achievement of regular education students; (2) the attributes of co-teaching classrooms that may have an effect on the academic performance of all students; and (3) the similarities and differences in opinion of regular education teachers and special education teachers regarding the co-teaching model.

Student grades were analyzed using descriptive statistical procedures. Thirty-eight classes were eligible for the study. A total of 719 semester grades were recorded, representing 441 students. Two hundred thirteen of the students were enrolled in more than one of the classes in the study concurrently. A subset of data was produced using only the grades earned by the 124 students who were enrolled in at least one regular education class and at least one co-teaching class in the same semester.

The dependent variable was course grades. The primary independent variable was the type of class—regular education or co-teaching. Other independent variables included course content (Communication Arts, Mathematics, Science or Social Studies), grade in school (9th, 10th, 11th, or 12th), and achievement level. Student achievement levels were classified as low (0.00-4.99), average (5.0-7.99), or high (8.0-11.0) based on overall grade point averages.

Paired samples t-tests ($\alpha = .05$) demonstrated significant difference between grades earned in co-teaching classes and grades earned in regular classes. Student grades in all three achievement levels were higher in co-teaching classes than in regular education classes. A Cohen's d coefficient was generated to determine the effect size of the differences between teaching models. A medium effect size was detected for grades earned in co-teaching classes for students in the high and average achievement levels. There was a large effect size for grades earned in co-teaching classes for students in the low achievement category.

Teacher responses to a survey constructed solely for use in this study were analyzed using inductive analysis. Ten regular education teachers and seven special educators responded to the survey (response rate of 77% for all teachers.) The three themes that emerged from all teachers were the need for common planning time, the need for quality professional development and training activities, and the need to clearly define the roles of each co-teacher in the pair. Responses to selected questions were also analyzed by directly

comparing the responses given by the 13 pairs of teachers who were assigned to the same co-teaching class. There were significant differences in perceived roles between the pairs of teachers.

DEDICATION

This work is dedicated to my family. My husband, Curt, has been a constant supporter. Curt has taken on more than his share of household and parenting duties over the past five years to help make this possible. My children, Landon and Leah, have lost many hours of 'mommy time' throughout this process. It is my hope that I have instilled in them the importance of education by example. My parents have always been proud of my educational accomplishments and continue to support me and all of their grandchildren in the pursuit of higher education.

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CHAPTER 1

THE PROBLEM

Introduction to the Study

Since the fall of 1998, the high school in this study has been including students with mild to moderate disabilities in the regular education classroom using the co-teaching model. Beginning with the fall semester of 2008, the school completely eliminated all content resource classes and included students with mild to moderate disabilities in the general education classroom. The time to completely implement the co-teaching model school-wide was lengthened by administrative turnover and the need to take this transition slowly for public relations purposes. The only exceptions at this school were a few students (less than 10) categorized as Mentally Retarded or Severely Autistic placed in a self-contained, special education classroom most of the day. All of these students, however, were placed outside the special education classroom at least one period each day. Physical education, art and choir classes were usual regular education placements made for these students.

At the time of this study, the school district had a very high rate of students identified as having speech or language concerns, mild to moderate disabilities such as learning disabilities, or other health impairments such as Attention Deficit Disorder. Seventeen percent of the district's student population met these criteria—much higher than the national rate of less than 12 percent. The extensive use of co-teaching classes was an administrative response to the large numbers of students in need of instructional modifications at the school. Co-

teaching was viewed as an avenue to provide services to large numbers of students without the undue budgetary strain of adding faculty and staff.

The co-teaching model used at this high school was 'lead and support.' This is the least sophisticated co-teaching model to implement. Generally speaking, the lead teacher is the content specialist (regular education teacher) and the support teacher is the special educator, however, these roles can be reversed to fit the teaching situation. The lead teacher delivers the content and the support teacher assists individuals or small groups in whatever manner necessary to help them successfully obtain the information presented. Ideally, the teachers work as a co-teaching team to manage classroom behavior, determine grades earned in the class and plan instruction and assessment.

Increasingly, parents and guardians of students without disabilities questioned why their child was placed in a classroom with a special educator and with students identified as having special needs. They were concerned about any negative implications this could have for their child. These parents were concerned that the curriculum may have been 'watered down' and that their children were placed in classes with students that exhibited behaviors that were detrimental to the learning environment. My answers to these queries were supportive of the co-teaching classroom situation. This was in support of the administrative decision rather than a thoroughly educated response. This research was intended to analyze student achievement data and teacher perspectives related to co-teaching classes. Hopefully, these analyses have provided information that will enable the administration and teachers to make

decisions regarding the co-teaching impetus at the high school and across the district that will positively affect student achievement.

It is reasonable to assume that the instructional strategies used in co-teaching classrooms intended to accommodate students with disabilities can be beneficial to all learners. These strategies could include changing the pace of instruction, more frequent formative assessments, the use of teaching aids not used in the regular classroom, using closed notes, and many more. Additionally, the presence of two teachers in the classroom may be advantageous for providing individual attention to all students.

This study examined the academic performance of students without disabilities in co-teaching classes as compared to students without disabilities enrolled in the same regular education class. (For example, I looked at the grades earned in Mr. Jones' regular English II class and the grades in Mr. Jones' co-teaching section of English II.) In addition, this study investigated the different instructional strategies and classroom management techniques used in co-teaching classrooms.

There is much discussion regarding students with disabilities and the advantages of using the co-teaching model as it evolved from the special education perspective. This discussion is necessary to help the reader understand the development of co-teaching classrooms and highlight the possible differences between a regular education class with one teacher and a co-teaching classroom with two teachers.

Creating Co-Teaching Classrooms

Providing students with special needs a well-rounded educational experience requires utilizing effective educational methods for all students. Murawski and Hughes (2009) say that, “When schools begin to establish, embrace, enhance, and emphasize collaborative practices between educators, research-based strategies can more easily make their way into the general education classroom” (page 271).

Voltz, Brazil and Ford (2001) view inclusion as the creation of an instructional environment that promotes success and a sense of belonging for all students as opposed to merely physically placing special education students in a general education classroom. Saxon (2005) recommends that implementation of the co-teaching model should be gradual, seriously consider teacher input and include support from the administration. According to Saxon, sustaining such a program will require strong commitment by the teachers and continued support from the administration.

Differences among students should be celebrated and all students should be recognized for their unique perspectives and contributions to the classroom. According to Dieker (2001), studies have shown that students with disabilities may derive benefits from the co-teaching classroom in the form of increased self-concept as well as increased academic achievement. Exposure to the general education curriculum in the co-teaching classroom may help students with disabilities perform at higher levels on local and state assessments.

Kohler-Evans (2006) reports that, even though The Individuals with Disabilities Act (IDEA) has been in effect for over 30 years, regular education teachers are still struggling to meet the needs of students with disabilities. General education teachers may be reluctant to make suggested modifications in the classroom for students with disabilities because they view this as unfair. Teachers may use the issue of fairness as an excuse to resist making the necessary instructional changes under the guise of holding all students to the same standards regardless of need (Welch, 2000). Welch defines fairness in three different ways. *Equality* is when it is fair to treat everyone the same. Equality can be achieved in schools only if every child has safe housing, competent parents and nourishing food. *Equity* is when it is fair to make rewards based on input. Equity is employed when everyone has an equal opportunity to participate and those who perform the best are rewarded. *Need* is the third definition of fairness. "Wheelchair ramps, free lunches, and special education are provided, not to everyone (equality) or to the best (equity), but to those who need them the most" (Welch, p. 36). Voltz et al. (2001) advise that "the words and actions of teachers must reinforce the notion that fair does not necessarily mean that everyone gets the same thing but rather that everyone gets what they need" (p. 26).

Making appropriate accommodations for handicapped students in the classroom is a collaborative effort driven by the Individualized Education Plan (I.E.P.) process. The I.E.P. team determines accommodations based on what is best for the student rather than suggesting the modifications that are 'easiest' to

make. The classroom teacher(s) must be able to create a community within the classroom that fosters understanding and respect for individual differences; otherwise the regular education students may lack the higher-level reasoning necessary to accept that some students need extra help to be successful (Welch, 2000). According to Welch, “Educators are legally and morally obliged to ensure that they provide necessary accommodations whether or not other students approve” (p. 39).

Co-Teaching as a Service Delivery Model

Co-teaching is the most popular model for implementing inclusion in the secondary school (Magiera & Zigmond, 2005; Dieker & Murawski, 2003). Co-teaching models usually include a general education teacher and a special education teacher together in the same classroom. The general education teacher is the content specialist and the special education teacher is the expert in instructional delivery. The ultimate goal of co-teaching is to make all students—regular education students and those with disabilities—successful in the general education setting (Dieker, 2001).

Murawski and Dieker (2008) maintain that “for true co-teaching to occur, both professionals must co-plan, co-instruct, and co-assess a diverse group of students in the same general education classroom” (p. 40). The link between instruction and assessment is important. All students need to be assessed based on their strengths. Measures of academic performance can include authentic performance-based assessment, portfolios, and observations (Salend,

2000). Salend also said that behavioral development can be measured in a variety of ways; interviews and questionnaires, adjective checklists, written and oral narratives or pictures.

Instructional strategies used in the co-teaching classroom can include putting content into themes, using graphic organizers and the use of problem-based learning (Tomlinson & Eidson, 2003). Voltz et al. (2001) suggest that instruction should be organized around big ideas that are central to the concepts being taught. The central themes should be introduced to the students before the lessons begin.

Since some students have issues with behavior, the teachers need to discuss class rules and consequences for noncompliance before instruction begins and review the rules frequently throughout the school year (Voltz et al.). In co-taught classes, both teachers need to consistently enforce class rules and agree on academic goals in order to have an effective co-teaching partnership.

Secondary teachers may encounter challenges such as large class sizes, large case loads, wide ranges of learning needs, and varying proportions of students with disabilities in individual classes (Dieker & Murawski, 2003). Additionally, these teachers may work with more than one co-teacher each day and may be asked to teach in several different content areas. Administrative support and a whole-school approach to inclusion will help decrease the degree to which teachers must deal with these difficulties.

The co-teaching model becomes especially important given the fact that students with disabilities are now included in high-stakes testing. All students are

being assessed on the same local, state, and national tests. Students in need of special services must be exposed to the general education curriculum in order to ensure that everyone can have ample opportunity to pass some level of standardized testing.

Brief Description of the Study

The purpose of this study was to determine whether enrollment in co-teaching classes affects the academic achievement of regular education students. Semester grades earned by regular education students were examined post-hoc. The grades earned in co-teaching classes were compared to grades earned in regular classes. Course content and regular classroom teacher(s) were consistent—meaning that all regular education teachers in the study provided instruction for identical courses in the co-teaching and regular education format. The courses in the study were from the core curriculum. Enrollment in core courses was not elective. All students were enrolled for the purpose of fulfilling required graduation credits.

Teachers in the study were asked to describe the instructional and classroom management strategies they used in co-teaching classes via an electronic survey. The surveys also included questions regarding professional development, common planning time, and suggestions for implementation. The specific questions posed in this study included:

1. Does enrollment in co-teaching classes affect academic achievement of regular education students?

2. What are the attributes of co-teaching classrooms that may have an effect on the academic performance of all students?
3. What are the similarities and differences in opinion of regular education teachers and special education teachers regarding the co-teaching model?

Co-teaching was defined in this project as “when two or more professionals deliver substantive instruction to a diverse or blended group of students in a single physical space” (Magiera & Zigmond, 2005, p.1). Specifically, the ‘lead and assist’ (also called ‘one teach, one assist’) model was used at this high school. In much of the available literature, the word *inclusion* is a general term used to describe any number of situations in which students with disabilities are included in regular education classrooms. Co-teaching is a means to including students with disabilities in the regular classroom.

The *regular education classroom* is a traditional classroom where a general educator instructs students using the curriculum outlined by the school with minimal differentiation in content, instructional delivery or classroom management. Students with disabilities enrolled in co-teaching classes have *mild to moderate disabilities* that may be categorized as learning disabilities, speech/language impairments, emotional disturbances or other health-related impairments that make it difficult to function in the regular classroom without additional supports.

Modifications made in the co-teaching classroom include techniques and materials used to effectively teach students with disabilities and actual changes in instructional delivery that make information more accessible for students with disabilities. Possible modifications include slowing the pace of instruction, giving

alternative assignments, reading directions and assignments to students, allowing students to give answers verbally, and giving directions in a variety of ways. Some students with disabilities may need *accommodations* such as preferential seating, assistive devices, a personal aide, or other supports necessary to function in an academic setting. *Services* provided for students with disabilities could include speech therapy, occupational therapy or social skills classes.

The *regular education teacher* is the content specialist and the *special education teacher* is the expert in instructional delivery. In secondary classrooms, the regular educator is certificated in the specific content area taught in the course. The special educator is certificated in special education according to the state of Missouri certification guidelines.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Overview

This chapter is divided into three parts. The first section is a brief description of significant legislation that has influenced the way students with disabilities have been and continue to be educated in schools. The second portion of the chapter is a recapitulation of studies relevant to the co-teaching model. The chapter concludes with a summary of the literature and its significance to the questions posed in this study.

Legal Basis for Inclusion

The concept of including students with disabilities in the regular education classroom in the public school system in the United States began as a civil rights argument. The premise of this argument was that all children—disabled and non-disabled—should have access to the same academic and social opportunities within the school (Sailor, 2002). The Education for All Handicapped Children Act (PL 94-142) was passed in 1975 and became the first piece of legislation to address including students with disabilities in the regular education setting. Smith (1998) summarized the major features of PL 94-142 as:

- A free, appropriate, public education must be provided for all students with disabilities regardless of the nature or severity of their disabilities.
- Students with disabilities must be educated with non-disabled children to the maximum extent appropriate.
- An Individualized Educational Program (I.E.P.) must be developed and implemented for each student found eligible for special education.

- Parents of students with disabilities are to be given an active role in the process of making any educational decisions about their children.
- States meeting the requirements of PL 94-142 must receive federal funds to help offset the additional costs associated with special education services. (p. 13)

PL 94-142 was reauthorized in 1991 and renamed the Individuals with Disabilities Act (I.D.E.A.). This reauthorization introduced the concept of “least restrictive environment” (Karten, 2005; Magiera & Zigmond, 2005).

Reauthorization of I.D.E.A. in 1997 further emphasized the importance of including students with disabilities in the regular education setting to the maximum extent possible. Lipsky and Gartner (1997) indicate that during the legislative reviews of I.D.E.A. the spirit of the law is summarized by the statement, “Integration in school was seen as key to the ultimate goal of integration in society” (page 303).

The regular education classroom is the starting point for determining the best placement for handicapped students and any exceptions to that placement must be justified in the I.E.P. (Dieker, 2001; Karten, 2005; Lipsky & Gartner, 1997; Magiera & Zigmond, 2005; McLeskey, Hoppey, Williamson, & Rentz, 2004). McLeskey et al. maintain that, while there is research evidence to support the placement of students with mild to moderate disabilities in the regular education classroom with appropriate supports, there is little data available regarding the extent to which the states are actually including students with disabilities in less restrictive settings.

Studies of the effects of including students with disabilities in the regular education classroom do not consistently favor its implementation. Lewis and

Doorlag (1999) report that, "The data on the merits of educating retarded children with their non-retarded peers are simply inconclusive" (pp. 467-68). Lewis and Doorlag did, however, report that instructional factors such as small class size, effective classroom management, increased instructional time and others have the potential to promote the achievement of students with disabilities placed in regular education classrooms. In order for these instructional factors to be effective, there must be adequate teacher training, appropriate selection of students, sufficient continuum of services and time for collaboration between the special educators and the regular educators.

Review of Related Studies

Teacher Attitudes on Including Students with Disabilities in the Regular Classroom

Treder, Morse and Ferron (2000) examined whether the most effective classroom teachers were more or less willing to work with special needs students. This study used an identified group of exceptionally effective teachers and a randomly selected group of typical teachers from Florida. The "S.B.S. Inventory of Teacher Social Behavior Standards and Expectations" (Walker & Rankin, 1980) was used to assess teacher attitudes regarding appropriate student behavior.

Previous studies indicated that the most effective teachers may not work well with special needs students because those teachers may be less tolerant of and more resistant to behaviors that could impede classroom management. This study, however, indicates that effective teachers may be superior at identifying

and correcting behaviors that have the potential to negatively affect the instructional environment. According to this study, the most effective teachers can work with students with disabilities in the regular education classroom with a high level of success. This research also indicated that additional study in the form of interviews and observation may be necessary to make a generalized conclusion.

Snyder, Garriott and Aylor (2001) interviewed 28 teachers from Michigan who were, at the time of the study, teachers in regular education classrooms that included special education students. These teachers were asked questions about their perceptions, beliefs, and attitudes regarding including special education students in the regular education classroom. The researchers used analytic induction of the responses to determine that there were three broad categories in which to place the answers. Sixty-four percent of the teachers said that it is more difficult to teach in an inclusive classroom because of increased time, paperwork, and the challenges of working with a cooperative teacher. Ninety-six percent of the teachers agreed that there were benefits to teaching this type of class—mostly for the special education students in the form of increased academic and social opportunities.

Avramidis, Bayliss and Burden (2000) surveyed 81 primary and secondary teachers in England. United Nations policies are similar to federal legislation in the United States in that the policies are put into place to make sure that all students are treated equally and provided similar educational experiences within the regular education classroom. The working definition of an inclusive

classroom in this study supports the widespread placement of students with special needs in the regular education classroom with the support services and personnel necessary for successful placement.

Avramidis et al. (2000) found high-quality professional development is essential to raising teacher confidence in working with special education students in the mainstream classroom. The teachers were more apprehensive about meeting the needs of students with emotional and behavioral difficulties than meeting the needs of students identified with learning disabilities. The study also found that professional development opportunities were especially important in determining teacher attitudes. Teachers with substantial training in meeting the needs of students with disabilities held the most positive regard for inclusion practices. Teachers also indicated that university-based professional development was more valuable than school-based training.

One of the earliest studies to attempt to link teacher attitude to instructional strategies in inclusive schools was conducted by Bender, Vail, and Scott (1995). The researchers asked 127 regular education teachers from three different school districts in Georgia to describe their specific attitudes toward mainstreaming and the instructional strategies used in their classrooms. The teachers were then grouped as to whether they had a positive or less positive attitude toward mainstreaming. The use of effective instructional strategies used in the teachers' classrooms was then compared between the two groups. Inclusion was defined in this study as "full-term placement into mainstream general education classes, with appropriate special education support" (p. 87).

Nearly 40% of the teachers in the study did not support or felt no strong commitment to the concept of inclusion. Bender et al. (1995) indicated that with over one-third of the teachers lacking support, there may be some problems successfully implementing inclusion in these teachers' classrooms. More than half of the teachers indicated that they frequently made instructional modifications to some degree. Peer tutoring, alternative assessment and cooperative learning were used most frequently. Classroom management interventions such as the use of assertive discipline plans and frequent review of class rules were also used frequently. Specialized grading systems, behavioral contracts and direct instruction were rarely used.

Bender et al. (1995) examined correlations among mainstreaming attitudes, demographic variables and the use of instructional strategies. Teachers who had taken more courses on teaching children with disabilities, teachers in lower grade levels and teachers with smaller class sizes had more positive attitudes. Teachers who had less positive attitudes toward mainstreaming used fewer instructional strategies in their classroom. Teachers with the most positive attitude used far more individualization strategies than those teachers with a less positive attitude. The data suggests that teachers with the most positive attitude toward inclusion are willing to make relatively major adaptations for children with disabilities in their classroom.

Each of these studies indicated that there was a need for more research on teacher attitudes and inclusion. Bender et al. (1995) wrote, "to our knowledge, this is the first time in the special education literature in which negative attitudes

toward mainstreaming have been directly linked to less frequent use of effective instructional strategies to facilitate mainstreaming” (p. 93). A few of the elements necessary for successful inclusion may include high-quality professional development, administrative support and commitment from the teaching staff.

In a more recent study, Fuchs (2008) examined the beliefs and attitudes of regular education teachers toward current mainstreaming practices. The teachers reported a lack of support from the administration at the school. The administration did not fund proper pre-service and in-service training, did not limit class size and did not arrange for common planning time.

The teachers in the Fuchs (2008) study reported feeling confident that they had good teaching abilities, but were not given the support and training necessary to effectively teach students with disabilities. The teachers felt overwhelmed by the everyday duties placed upon them as educators. The additional responsibilities resulting from the inclusion of students with disabilities in their classrooms resulted in frustration and a general feeling that they were given disproportionately more work than the special education teachers. Fuchs writes that, “The regular education teachers felt that they were responsible for teaching, grading, planning, and making accommodations for all students, while the special education teacher had far fewer responsibilities” (p. 109).

The Co-Teaching Relationship

It is sometimes difficult to predict which teachers have the ability to work together successfully in the same classroom. In general, co-teachers do not

naturally come together as a collaborative team. Mentoring programs and professional development specifically directed at how to work within the co-teaching classroom are essential to effective co-teaching efforts. There are times however, when training and other supports are not enough and the administration has to decide that certain teachers are just not proficient at working in co-teaching classrooms.

Friend (2000) writes that the phrase “teacher collaboration” is frequently misused to describe any and all interactions that teachers have with each other. Collaboration is more than casual conversation or brief discussion at faculty meetings. True collaboration requires “commitment on the part of each individual to a shared goal, demands careful attention to communication skills, and obliges participants to maintain parity throughout their interactions” (p. 131). Effective collaboration can be formal or informal. Some of the best collaborative conversations occur out of genuine concern for students and not by administrative mandate or in the name of political correctness (Toutkoushian, 2005).

Interactions with students and interactions with adults require different skills. Multiple opportunities to work with adults can be advantageous for developing the communication skills necessary to develop collaborative relationships, if the dialogue is aptly productive. According to Friend (2000), teachers sometimes use poor communication skills when working together because they are overly familiar with each other so they make assumptions about shared opinions, do not honestly contribute to the conversation and may become agreeable for the sake

of saving time. Pre-meetings in the hallways and whispers about individuals often sabotage teachers' collaboration efforts and are symptoms of the need for professional development.

Dieker (2001) writes that the amount of research on 'effective' co-teaching teams, especially at the secondary level, has been limited. Dieker's study looked at the characteristics of effective middle and high school co-teaching teams. In the 1970's the model of working with another teacher in the same classroom was referred to as team teaching or cooperative teaching. According to Dieker, co-teaching specifically refers to the collaborative effort between teachers when special needs students are included in regular education classrooms. Members of the 'team' can include the co-teachers as well a case manager, personal aide, speech/language specialist or any number of persons directly involved in providing the necessary supports to make students successful in the least restrictive environment.

Dieker (2001) describes five options for implementation of co-teaching:

1. Lead and Support: One teacher leads and another offers assistance and support to individuals or small groups,
2. Station Teaching: Students are divided into heterogeneous groups and work at classroom stations with each other,
3. Parallel Teaching: Teachers jointly plan instruction, but each may deliver it to half the class or small groups,
4. Alternative Teaching: One teacher works with a small group of students to pre-teach, re-teach, supplement, or enrich, while the other teacher instructs the large group,
5. Team Teaching: Both teachers share the planning and instruction of students in a coordinated fashion. (p. 15)

It has been my experience that each of these teaching options can occur in the classroom at any given time. Co-teachers who work effectively together are able

to determine which method will work best for the particular lesson and audience. Subject matter, methods of assessment, and student needs should be considered when determining instructional delivery strategies.

Nine co-teaching teams from an urban Midwestern school district consisting of nine general educators and seven special educators were included in Dieker's 2001 study. The average teaching experience of the general educators was 7.6 years and of the special educators was 7.4 years. Teams had been established for between one and three years. The teams served students with learning disabilities, emotional disturbances, mild to moderate cognitive disabilities, and autism. All of the teams were returning to the same school and working with the same co-teacher(s).

Through the use of videos and field notes, the co-teaching options described previously were evident. There were no notable differences in effectiveness of one option compared to another. Teaching options were chosen based on teacher experience, content area and the needs of the students. The most common practice observed in all classrooms was the development of a positive learning climate. Three specific factors were noted as contributing to this positive relationship; natural peer supports were in place, the teachers' actions and words made it clear that all students were accepted and valued, and a continuum of special education services were available making it possible to move students easily to a more restrictive environment ensuring that the learning climate remained positive for all students.

The study noted several reasons for the effectiveness of the teaching teams. Over half of the lessons observed in the study involved active learning. All of the classrooms had high expectations for both behavioral and academic performance. The teams spent an average of 45.5 minutes each week co-planning, but reported that they would have liked to have more than twice that much time to work together. Another practice that may relate to the effectiveness of the teams is the use of multiple methods of assessing student learning. The teams reported that they used a variety of creative methods for grading academic and social performance.

From the results of this study, Dieker (2001) suggests that regular educators and special educators work closely to ensure that the most effective practices are included when developing or revising a co-teaching situation. Before instruction begins, co-teachers should spend time defining roles, discussing curricular expectations, and familiarizing themselves with the needs of individual students. Creating a positive climate in the classroom, clarifying teacher roles, and securing common planning time are essential to effective co-teaching. The teams should also devise a system for constantly evaluating the teaching and learning situation in their classroom to maximize student outcomes.

Ashton (2003) surveyed 24 teaching pairs (24 regular education teachers and 24 special education teachers) during a two-day co-teaching in-service. Ashton asked about their biggest concerns with the co-teaching model. The item of biggest concern was having time to co-plan. The teachers specifically cited common plan time as important to the co-teaching process. Special educators

indicated frustration with trying to co-plan with more than one co-teacher in more than one content area.

The second area of concern for the teachers was making sure the teaching pairs had similar teaching styles and teaching philosophies. In this case, the teachers recommended that they request their co-teacher rather than being assigned by an administrator. Many of the teachers feared that administrators would make these decisions using random methods rather than seeking input from the teachers.

Instructional Strategies that Work

Co-teaching classrooms are implemented at all levels in K-12 school systems. While IDEA says that we should start with the regular classroom as the least restrictive environment, in reality students are often times placed in very restrictive educational situations and asked to 'earn' their way into the regular classroom. Parents and students are reluctant to accept placements in co-teaching classrooms when they are used to self-contained special education classes (Murawski & Dieker, 2004).

The I.E.P. team must legally and ethically assess the needs and abilities of the student without succumbing to parent pressure or claiming that the school does not offer the service(s) needed by the individual child. The decision as to who gets placed in the co-teaching classroom should be based on educational diagnosis, professional judgment and current practices at the school. Kemp and Carter (2006) examined on-task behavior during whole class instruction and

direction-following behavior for elementary students with disabilities to determine if those factors could determine successful inclusion in co-teaching classes in the future.

Kemp and Carter (2006) studied the ability of children to remain on task and follow directions because those skills have been identified as classroom skills that can be important for functioning in larger groups. This study indicated that there has been very little research on the relationship between classroom skills and success of inclusion. Data were collected on 19 students with mild to moderate intellectual disabilities and 12 students without disabilities for comparison. All students had been members of integrated classrooms for at least 1.5 to 5.5 years.

Kemp and Carter (2006) found that children with disabilities, as a group, did not fall further behind regular education peers as they transitioned to higher grades. There were differences in on-task and direction-following behaviors between the students with and without disabilities. Students with disabilities exhibited more off-task behaviors during whole-class instruction and followed fewer instructions directed to the group and required more follow-up directions from teachers. However, the gap between those differences did not significantly widen as the years passed. This study is important in that it suggests further research into which skills are necessary for successfully including students with disabilities in the regular education classroom. This study also gives an indication that skills possessed in the initial years may be indicative of success in future educational settings.

Simmons and Magiera (2005) evaluated the effectiveness of the co-teaching program at three urban high schools within one school district. Using the Magiera-Simmons Quality Indicator Model of Co-Teaching (Magiera & Simmons, 2005), they conducted 10 classroom observations and 22 teacher interviews. Although the results varied, their findings included several consistent attributes.

Simmons and Magiera (2005) found that the co-teaching pairs worked together to map curriculum in the summers and spent time planning together during the school day. Both general education teachers and special educators agreed that having students work in mixed-ability groups, repetition and presenting content in varied formats were powerful teaching strategies. In general, the general educator was the lead teacher and the special educator's role was to review material.

Suggestions for the district included pairing teachers voluntarily based on interest, provide training as a pair, provide opportunity to observe other co-teaching classrooms and provide common planning time. Simmons and Magiera (2005) also suggest keeping pairs together as long as they are an effective instructional team. A caveat to this recommendation is that "longevity of co-teaching pairs does not ensure the effectiveness of the co-teaching pairs." (p. 10)

Kohler-Evans (2006) studied the attitudes and concerns of high school teachers from 15 urban and suburban school districts. According to Kohler-Evans, "Special education teachers are frustrated because they have been left homeless, having their room taken from them, and have been thrust into a classroom that has been resided in by a veteran language arts, math, history, or

science teacher who knows what to teach and how to teach it” (p.260). The outcome of this relationship could be a negative situation with the students observing.

Kohler-Evans (2006) asked open-ended questions. Most of the teachers in the survey were participating as a co-teacher because they were assigned—not because they had volunteered. Most of the teachers (77%) believed that co-teaching has a positive impact on student learning. The number one feature of co-teaching deemed most important by the teachers in the study was common planning time. The teachers also indicated that it was important to have a positive working relationship with your co-teacher.

Ninety-seven percent of the teachers in Kohler-Evans’ 2006 study would co-teach again, if give the opportunity. In general, the teachers thought this instructional delivery method reaches more students and affords them the support of another adult. The need for training and resources were two reasons given by those teachers that would choose not to co-teach again.

The Impact of Including Students with Disabilities in Regular Education Classes

Including students with disabilities in regular education classrooms is not a new concept but, as has been previously discussed, the extent to which this practice has been employed in schools is relatively unknown. Each state, school and teacher has a slightly different vision of what an effective co-teaching classroom looks like. This type of service delivery method impacts not only students with disabilities but also the students without disabilities enrolled in

these classes. This section will review studies that have investigated outcomes for non-disabled students in inclusive classrooms.

Huber, Rosenfeld and Fiorello (2001) looked at how including special education students in the regular education classroom affected regular education students' math and reading achievement. General education students were identified and grouped as high, average, or low achieving. A total of 410 students from one of three Eastern Pennsylvania elementary schools were included in the study. Data were collected from inclusive and traditional classrooms during three separate school years. The inclusive classrooms employed a variety of teaching strategies—team teaching and cooperative learning were the most commonly cited models.

Huber et al. (2001) found that students identified initially as lower achieving benefited from inclusion while students who were grouped as high achieving seemed to lose ground when enrolled in an inclusive classroom. These effects were less pronounced during the second year of inclusion. Further investigation of the data revealed that the number of students with disabilities enrolled in an inclusive classroom did not affect achievement gains. The authors suggest that further studies examine classroom climate, teacher attitudes, and instructional strategies used in inclusive classrooms.

Fisher (1999) conducted a qualitative analysis of the perspectives of 257 high school students regarding the inclusion of special education students in the regular classroom. The results indicate that students were generally supportive of this practice. Fisher said that the importance of this study is that “these

teenagers may soon be the co-workers, employers, friends, neighbors, and parents of individuals with disabilities. Their advocacy for and beliefs about inclusive education are important to understand” (p. 458).

Fischer (1999) asked if students without disabilities recommend inclusive education. In this particular high school the answer was ‘yes.’ A significant point in this study was that, “High school students appear to understand the impact that their behavior has on others. Results of the present study also suggest that students without disabilities want to provide role-modeling and believe that they have something to learn from their peers with disabilities.” (p. 465)

Summary

Overall, there is a paucity of research available to study the effects of enrollment in co-teaching classes on regular education students at the secondary level. The reasons for this may include lack of consistency between states in implementing co-teaching, vacillating definitions of the co-teaching model, and the mixed results of research that is currently available. Just as each classroom is different, so is each school. It is difficult to generalize instructional delivery across schools; however, the related studies described in this chapter seem to indicate that including students with disabilities in the regular classroom is certainly not harmful and may be advantageous to all students socially and academically. The research also suggests that providing teachers with common planning time, allowing them to choose their own co-teaching partner, and providing quality training are necessary components of a co-teaching effort.

Chapter Three of this study describes the processes used to select subjects, gather achievement and survey data, and methods used to analyze the results. In Chapter Four, the findings are reported and discussed. Various tables have been provided throughout the study to allow the reader to examine the data in detail. Chapter Five summarizes the findings derived from the analyses of data and proposes recommendations for practice and further study.

CHAPTER 3

METHODOLOGY

Introduction

This study was intended to determine whether, and to what extent, the academic achievement of regular education students may be affected by enrollment in co-teaching classes at the high school level. In addition, the study examined teacher responses from a survey intended to address instructional practices in co-teaching and regular education classes. This research study included quantitative analysis of student achievement data and qualitative analysis of the submitted responses to the teacher survey. Teachers and student academic records met a pre-determined set of criteria before becoming eligible for the study. This project was reviewed and approved by Southern Illinois University at Carbondale's Human Subjects Committee.

Student achievement data were collected post-hoc from the Student Information System (SIS) database used by the school district. Teachers assigned to the classes in the study were sent an e-mail survey (see Appendix A) and asked to return it to a third party. Teachers and students had no prior knowledge of the study. Permission from the school district's superintendent (see Appendix B) was garnered before any data were obtained. Data were recorded and reported in a manner that is consistent with the student records privacy policies of the school district.

Selection of Subjects

The high school in the current study was located in Southeast Missouri. There were approximately 740 students enrolled at the school in grades 9-12 during the fall semester in 2008. Nearly 17% of the students had an I.E.P. and were receiving special services for mild to moderate disabilities such as learning disabilities, speech/language impairment or other health issues such as Attention Deficit Disorder. That figure is relatively high in comparison to similar high schools in the area. Fewer than 2% of the students had low-incidence disabilities such as severe mental retardation or a combination of severe physical and mental impairments. Thirty-two percent of the high school students qualified for free or reduced lunches during the Fall, 2008, semester. Forty-one percent of all school children in the county qualified for free/reduced lunches during this same time frame. This is the only public high school in the county. Enrollment had remained stable for at least 10 years prior to the study.

According to Missouri Kids Count (2007) the student population in the county was mostly white (more than 97%) and middle class. There were several contemporary manufacturers in the town where numerous members of the community were employed. There was also a substantial farming community in the county. The adult unemployment rate in the county was less than four percent and the median household income was \$33,934 as of the 2000 census.

Placing Students in Co-Teaching Classes

The high school had been implementing the co-teaching model in the core curriculum since the fall of 1998. During the first year of implementation, there were relatively few co-teaching classes—two in the Communication Arts department and one in Science. Co-teaching sections were added each year to meet the needs of the special education students per their I.E.P. By the 2005-06 school year, nearly all content-area resource classes had been eliminated and most students with mild to moderate disabilities were placed in co-teaching classes as identified in their I.E.P. The only exception was a self-contained resource room for students diagnosed with behavior disorders, which was eliminated at the beginning of the 2008-09 school year.

At the time of the study, all students with mild to moderate disabilities were placed in the regular classroom whenever possible with supports and services delivered via the co-teaching model. There were no content-specific resource classes; however, an open resource room was provided for special education students to get academic assistance during the school day. This change in paradigm was a result of the administration's desire to serve more students with fewer personnel and to keep students in the classroom rather than frequently leaving the regular classroom to go to resource rooms. The number of co-teaching classes offered each school year vacillated slightly based on demand, changes in state requirements for graduation, and course offerings. During the fall semester of 2008, a total of 30 co-teaching classes were included in the master schedule.

Students with disabilities were assigned to co-teaching courses based on their need for services as outlined in the I.E.P. For example, students with deficits in reading comprehension were placed in Communication Arts co-teaching classes and students with difficulty in math reasoning and/or calculation were placed in a mathematics co-teaching class. It was possible for a student with an I.E.P. to be on the roster in a co-teaching class, but not placed in the class as a part of the special education population.

The total number of students in need of a co-teaching assignment was the biggest factor in determining the number of co-teaching classes offered in the master teaching schedule. The school enforces the unwritten rule that no more than 25% of the total class enrollment consists of students placed in the co-teaching section of the class. All classes in this study met this criterion. Co-teaching classes were assigned two course section numbers. One section number was for the students assigned to co-teaching classes according to the specifications in their I.E.P. and one section number for regular education students. Regular education students had equal chances of being assigned to co-teaching and regular education classes because the computerized Student Information System truly randomly assigned students.

Co-teaching classes in this study were from the core curriculum and were required for high school graduation by state and local school board policy. Elective courses were not eligible for this study. The co-teaching classes selected had a 'partner' regular class. For example, if Mr. Jones teaches a co-teaching American History class, the partner class would be a regular American

History class taught by Mr. Jones. Both classes have the same curriculum and must fulfill the same requirements in terms of state and local curriculum and assessment mandates (see Table 1). The school was on a traditional seven-period schedule. All classes were taught in the same day using 50-minute class periods.

Table 1

Summary of Classes in Study

Content Area	Course Name	Number of Classes	
		Co-Teaching	Regular
Communication Arts	English I	2	2
	English II	1	1
	English III	2	2
Social Studies	Government	4	4
	American History I	3	3
	World Geography	1	1
Mathematics	Applied Algebra A	2	2
Science	Physical Science	2	2
	Biology I	2	2
Total Classes		19	19

Note. All classes in the study were from the core curriculum and were required for graduation.

Subjects in the study were assigned a letter grade for the semester. Students with an I.E.P. enrolled in the class as a member of the regular education population were included in the study. For instance, a student with a learning disability in mathematics could be enrolled in a regular education communication

arts class. Their disability does not affect performance in communication arts; thus, they were eligible to be included in the study.

Data Collection and Analysis

Student Achievement Data Collection and Coding

This study investigated the effects, if any, of enrollment in co-teaching classes on the academic achievement of students without disabilities. The primary independent variable was the type of class (regular or co-teaching) and the primary dependent variable was the semester grades earned by the students in the identified classes in the study. The effects of additional independent variables were studied to make sure the design of the study rules out other plausible hypotheses. Analysis of the student achievement data was quantitative (Isaac & Michael, 1997).

Academic achievement was measured by semester grades earned in the identified classes for the Fall, 2008, semester. Course grades and cumulative grade point averages were reported using an 11.0 scale (see Table 2). Students were placed into high, average and low-achieving groups based on their cumulative grade point average at the end of the Fall, 2008,, semester. Students with grade point averages equal to or greater than 8.0 (on an 11.0 scale) were considered high achieving, students with a grade point average between 5.0 and 7.99 were average achievers, and those with grade point averages equal to or below 4.99 were classified as low achievers.

Table 2

Numerical Equivalent of Letter Grades on 11.0 Scale

Letter	Number	Letter	Number
A	11.0	C	5.0
A-	10.0	C-	4.0
B+	9.0	D+	3.0
B	8.0	D	2.0
B-	7.0	D-	1.0
C+	6.0	F	0.0

Information was recorded as raw data and frequencies in order to use a variety of statistical techniques for analysis. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 17.0 and Excel 2003 software programs. I identified 38 classes with a potential pool of 734 semester grades of students enrolled in co-teaching and regular education classes. Note that individual subjects may have more than one semester grade since they potentially could have been enrolled in more than one of the classes.

For each subject in the study, the type of class (regular or co-teaching), grade earned in the class for the semester, cumulative grade point average at the conclusion of the semester and content area of the class was noted. Class status was recorded in the data-9th, 10th, 11th or 12th grade. In addition, students were placed into achievement groups based on their cumulative grade point

average as described in the preceding paragraph. Table 3 indicates the manner in which data were recorded.

Table 3

Student Achievement Data Coding Procedure

Data Label	Code
ID	Students numbered 1-441
Class Status (grade in school)	9,10,11,12
Course	Classes will be numbered 1-38
Achievement Group	1-High (8.0 or higher) 2-Average (5.0-7.99) 3-Low (0.0-4.99)
Cumulative, Non-Weighted GPA	See Table 1
Grade earned in Class (Course GPA)	See Table 1
CT or Regular class	0-Regular, 1-Co-Teaching
Content Area (Type)	1-Communication Arts 2-Math 3-Social Studies 4-Science

Note. Achievement group was determined by cumulative, non-weighted grade point average.

Statistical Procedures used to Analyze Student Achievement Data

The statistical technique ANOVA (Analysis of Variance) was used to analyze student data for statistically significant differences within groups using the

independent variables class status, content area, type of class, and achievement group with course grades as the dependent variable (George & Mallery, 2007; Hinkle, 1998). Alpha was set at .05. It is important to note that all semester grades ($n = 719$) were used to make this determination—meaning, all student grades were analyzed for between-subjects differences even though some students may have been enrolled in only one class included in the study.

There were no significant differences within the groups labeled class status, type of class or achievement group; however there was statistical significance detected among the content areas. The Least Significant Difference (LSD) and Bonferroni post-hoc tests were used to rule out a Type 1 error (Glass & Hopkins, 1996; Hinkle 1998; Kerlinger, 1992; Lipsey, 1990).

A paired-samples t-test was used to determine whether there were significant differences between grades earned in co-teaching classes and grades earned in regular classes for the students who were enrolled in at least one co-teaching class and at least one regular class concurrently for the semester. The t-test demonstrated statistically significant differences; therefore a Cohen's d coefficient was calculated for each achievement group to determine the effect size of enrollment in co-teaching classes (Cohen, 1988).

Teacher Survey Content and Procedures

The teacher surveys were distributed to all regular education and special education teachers assigned to the classes in the study. The surveys indicated approval from the Human Subjects Committee at the university. The survey

questions were written for the specific purpose of use in this project and were generated based on the information presented in the review of literature in Chapter Two. The surveys were distributed through the school e-mail system. Teachers were asked to send the surveys to a third party who removed all identifying information and coded the surveys appropriately according to the Fall, 2008 master teaching schedule before submitting them to the researcher (see Appendix A).

Analysis of the teacher surveys was qualitative. Surveys were initially analyzed en masse. The responses were then grouped into those from regular educators and those from special educators. Additionally, the responses given by co-teaching pairs—regular educators and special educators assigned to the same co-teaching class—were compared and contrasted (Alreck, 2004; Patton, 2002).

The first three questions on the survey asked questions regarding teacher assignment, years of overall teaching experience and years of co-teaching experience. Those results were used for descriptive purposes. Question number one also included a query regarding the perceived role of the educator in the co-teaching class. This question was used to investigate the varied duties of co-teachers within and among the courses in the study.

Question four on the survey asked what kind of training the teachers had that specifically addressed working in the co-teaching classroom. Question five asked how many hours were spent co-planning each week. This information

could be helpful in determining the level of commitment demonstrated by the teachers and the administration to the co-teaching effort at this school.

Question six asked the teachers to discuss the modifications in content and instructional delivery made in co-teaching classes. Question seven asked about any modifications in classroom management that may be used in the co-teaching class that are not used in the regular education class. Question eight asked the teachers to summarize questions six and seven by describing how the co-teaching classes and the regular education classes differ. These questions could provide specific information to describe the differences between regular and co-taught classes.

Question number nine asked the teachers to identify characteristics of the co-teaching classroom that are beneficial to regular education students. By contrast, question number 10 asked the teachers to describe any characteristics of the co-teaching classroom that may be detrimental to the learning of regular education students. The final question on the survey asked teachers to make suggestions for co-teaching implementation or professional development that could improve the effort to use co-teaching as a primary service delivery for students with mild to moderate disabilities. The survey in its entirety is included in this paper as Appendix A.

Possible Limitations of the Study

There are limitations of this study. The fact that the study was conducted at only one school may mean that the results cannot be generalized to all

educational settings. The data collected were from a rural high school in Southeast Missouri. Most of the teachers in the study had been educated in basically the same geographic region, had been employed by the same school district for all or most of their teaching career, and had participated in similar training and professional development activities. There had been administrative turnover at the building-level principal position however; the district-level special services administration, assistant principals, and teaching faculty in the building had remained stable for several years, giving a fair amount of consistency to the co-teaching effort.

Another limitation of the study could be that the grades were from only one semester and not an entire school year. There could be differences in school schedules that would make it undesirable to study only one grading term. The fall semester was chosen because the school calendar tends to be relatively uninterrupted during the fall semester. The spring semester is more unpredictable due to weather conditions that may cause school to be dismissed early or cancelled altogether and re-scheduled at a later date. The learning process could be distracted enough in the spring semester to make a difference in student performance.

Since grades are at least partially subjective, there is no way to determine an exact method for assigning them across the different classes. The same grading scale was used throughout the school. However, the method for arriving at a final percentage for the course could vary greatly. Some teachers may use multiple homework and in-class assignment results as primary barometers of

academic achievement whereas others may heavily depend on the results of summative exams to assign course grades. These differences could not be fully determined for this study.

Given the pre-existing relationship with the researcher, some teachers may have been apprehensive to answer the survey with any comments they suspect would have reflected negatively upon them, the school administration or other teachers. The researcher was an administrator—thus, an evaluator of teachers—in the building. Procedures to ensure that the researcher did not know the identity of the respondents were put into place and communicated properly, but some teachers may have questioned the proposed route to the researcher.

Operational Hypothesis

I formulated what I believed to be an operational hypothesis for this research project. Enrollment in co-teaching classes for regular education students identified as low achievers will have a positive effect on semester grades. Students classified as average achievers will benefit academically from the co-teaching classroom but not as much as the low achievers. Students identified in the high achieving category will be relatively unaffected academically by enrollment in an inclusive classroom. I believe content area and class status will have little effect on student achievement.

The teacher surveys will bring to light the differences and similarities in opinion between the regular educators and the special educators regarding co-teaching. I believe that the majority of the teachers will agree that co-teaching is

beneficial for all students and that the practice should be continued. I suspect that the teachers will voice concerns over lack of co-planning time and recommend that the administration make available more training and professional development opportunities specifically focused on co-teaching.

CHAPTER 4

FINDINGS

Introduction

The purpose of this study was to determine the effect, if any, of enrollment in co-teaching classes on the academic achievement of regular education students in one high school. Student grades issued for the Fall, 2008, semester were studied in 38 different classes from the core curriculum in Communication Arts, Mathematics, Science and Social Studies. Students were classified into achievement groups based on cumulative grade point averages (see Table 3). Inferential procedures (e.g. ANOVA, t-tests, and correlation) were used to identify differences in grades earned in co-teaching classes and grades earned in regular classes. The alpha level was set at .05 for these research questions, which is a typical level for research in education.

This study also sought to determine how co-teaching classes differ from regular education classes in the same high school. A teacher survey included questions related to the implementation of the co-teaching model at this school. Teachers assigned to the classes in the study were sent surveys via the school e-mail system.

The survey results were qualitatively analyzed first by grouping the responses given by the regular education teachers and those responses given by the special education teachers separately. Secondly, the completed survey questions were sorted by matched pairs of co-teaching teams—meaning the

regular education and the special education teachers who taught together in the same class. This enabled a more in-depth study of how the teaching pairs perceived the same classroom situation.

Statistical Analyses of Student Data

Student data were recorded for subjects enrolled in 38 high school classes. Nineteen of the classes were regular education classes and nineteen were co-teaching classes. Students enrolled in the co-teaching classes based on special education placement (less than 25% of class enrollment) were not eligible for the study. It is possible for students with disabilities to be included in the study—those students had been randomly placed in the class and their disability did not affect performance in the course. A total of 719 semester grades were recorded for 441 different students. Some of the students were enrolled in multiple classes in the study. Table 4 is a sample view of how the data were recorded for all observations.

Table 4

Sample View of Data Sheet for All Observations

ID	Grd	Cours	Ach Grp	GPA	Reg GPA	CT GPA	Course GPA	CT	Cont
1	9	10	2	7.20	6.3		6	0	3
1	9	14	2	7.20	6.3		7	0	1
1	9	16	2	7.20	6.3		6	0	4
2	12	4	1	9.52	8.0		8	0	4
3	10	35	3	4.28	0.0		0	0	3
4	10	38	1	11.00	11.0		11	0	3
...	...	...	...	...	...	...	...	...	...
439	11	28	1	8.80	9.0	8	9	0	1
439	11	29	1	8.80	9.0	8	8	1	3
440	11	8	3	4.19		5	5	1	3
441	12	7	2	6.90	9.0		9	0	2

Note. Data were recorded using Excel 2003 software. See Table 3 for coding procedures.

A second data sheet was prepared using only grades from students who were enrolled in both types of classes—regular education and co-teaching. There were 124 students who were enrolled in at least one regular class and at least one co-teaching class concurrently during the Fall, 2008, semester. This data set included separately calculated grade point averages for co-teaching and regular education classes for each student. Table 5 is a sample view of the data for the smaller group.

Table 5

Sample View of Small Group Data Sheet

ID	Grade in School	Ach Group	GPA	Reg GPA	CT GPA
11	11	2	7.08	9.0	7
15	11	1	9.30	6.5	10
18	11	2	6.21	4.5	4
21	10	3	3.08	8.0	9
32	11	1	9.61	8.0	10
34	9	3	3.93	2.0	4
38	9	2	6.42	5.0	8

Note. See Table 3 for coding procedures.

ANOVA (Analysis of Variance) ($\alpha = .05$) was used to determine if there were between-subjects effects using all student grades ($n = 719$). The dependent variable was course grades and the independent variables included class status, achievement group (high, average and low), course content (Communication Arts, Math, Social Studies and Science) and type of class (regular or co-teaching). Class status was defined as lower classes (grades 9 and 10) or upper classes (grades 11 and 12).

F-statistics is used to compare the means in one-way ANOVA when there are multiple independent variables. If the computed value of F is greater than the critical value of F, then the null hypothesis is rejected and pair wise differences should be investigated (Turner & Thayer, 2001; Fraenkel, 2006). In this case, the critical value of F ($n = 719$) was higher than the table value of F for course content (see Table 6). Thus, the independent variable course content—Communication Arts, Math, Social Studies, and Science—warranted further investigation.

Table 6

<i>Tests of Between-Subjects Effects</i>		
Independent Variable	F	Critical F
Achievement Group-High, Average, Low	204.656	3.00
Content-Comm Arts, Math, Science, Social Studies	2.353	*2.61
Co-Teaching, Regular	20.804	3.84
Class Status-9th/10th, 11th/12th	13.687	3.84
<i>Note.</i> Dependent variable is course grade point average. *Null hypothesis could be true.		

An ANOVA test ($\alpha = .05$) revealed that there were differences in course grades among the content areas at the .006 level of significance. The Least Significant Difference (LSD) post hoc test of multiple comparisons revealed that Math and Social Studies grades ($p = .007$) as well as Social Studies and Science grades ($p = .007$) were significantly different (see Table 7). The LSD adjusted the level of significance to .01.

Given that there are multiple outcomes when testing the means for course content, the Bonferroni multiple comparisons test was used. The Bonferroni calculates a new pair wise alpha to keep the family wise alpha value at .05 (Dunlop, 1996; Hinkle, 1998). This reduced the chance of making a Type 1 error. In this case, the adjusted pair wise alpha value was .01. Using the Bonferroni adjustment, I found no significant differences between course grades in the content areas (see Table 7). Thus, when all student grades are taken into consideration, and groups are defined by the independent variables, the means

of the grades earned are the same. Therefore, any differences found between grades earned in regular classes and grades earned in co-teaching classes can be attributed to the independent variable-type of class.

Table 7

Post Hoc Tests of Multiple Comparisons

(I)Content	(J) Content	LSD			Bonferroni		
		Mean Diff	Std Error	Sig	Mean Diff	Std Error	Sig
CA	Math	0.573	0.413	0.166	0.573	0.413	0.996
	SS	-0.511	0.254	0.045	-0.511	0.254	0.267
	Science	0.254	0.304	0.404	0.254	0.304	1.000
Math	CA	-0.573	0.413	0.166	-0.573	0.413	0.996
	SS	1.084*	0.398	0.007	-1.084	0.398	0.039
	Science	-0.319	0.431	0.460	-0.319	0.431	1.000
SS	CA	0.511	0.254	0.045	0.511	0.254	0.267
	Math	1.084*	0.398	0.007	1.084	0.398	0.039
	Science	0.765*	0.282	0.007	0.765	0.282	0.041
Science	CA	-0.254	0.304	0.404	-0.254	0.304	1.000
	Math	0.319	0.431	0.460	0.319	0.431	1.000
	SS	-0.765*	0.282	0.007	-0.765	0.282	0.041

Note. * p < .01

An inspection of the descriptive statistics generated using only the grade point averages of students concurrently enrolled in regular and co-teaching classes (n = 124) reveals a definite pattern in the means of each of the

achievement level subgroups. The high achievers had a mean overall grade point average of 8.902, the average achievers' mean grade point average was 6.311 and the low achievers' mean grade point average was 3.667 (see Table 8). The results of our ANOVA test are consistent with this—grades earned in class are comparable to overall achievement level.

Table 8

Course Means for Regular and Co-Teaching Classes by Achievement Level

Achievement Group	Type	Mean	N	SD
High	Reg GPA	8.312	54	1.823
	CT GPA	9.016	54	1.356
	Overall GPA	8.902	54	1.717
Average	Reg GPA	5.048	48	2.252
	CT GPA	6.544	48	1.853
	Overall GPA	6.311	48	2.773
Low	Reg GPA	2.456	22	2.623
	CT GPA	4.388	22	2.267
	Overall GPA	3.667	22	2.896

This study sought to determine whether the grades earned in co-teaching classes and the grades earned in regular classes are significantly different. Using only the grade point averages earned by students enrolled in both co-teaching and regular classes ($n = 124$), a paired samples t-test ($\alpha = .05$) shows significant difference ($p = .001$). Additionally, paired samples t-tests also show that the differences in course grades occurred for all three achievement groups at the .005 level of significance (see Table 9).

Table 9

Paired Samples T-Test by Achievement Group

Achievement Group	t	Sig. (2-tailed)
High (CT GPA-Reg GPA)	*3.012	0.004
Average (CT GPA-Reg GPA)	*3.739	0.001
Low (CT GPA- Reg GPA)	*3.129	0.005

Note. *p<.05

To determine the extent to which type of class affects grades, Cohen's d coefficients were generated for each achievement level (Cohen, 1988). To compare two groups, Cohen's d is computed as the difference of the means divided by the average of the standard deviations for each group (Lipsey, 1990). Cohen developed precise guidelines for interpreting effect size as small, medium or large (Cohen, 1988). An effect size of 0.0 would indicate that the mean of the grades from co-teaching courses would be in the 50th percentile of the regular class grade distribution. Table 10 describes the resulting effect sizes.

Table 10

Effect Size of Class Type on Course Grades by Achievement Group

Achievement Group	Paired Differences		Cohen's d	Effect Size
	Mean Diff	Pooled SD		
High (RegGPA-CTGPA)	0.704	1.589	0.4382	Medium
Average (RegGPA-CTGPA)	1.496	2.052	0.7254	Medium
Low (RegGPA-CTGPA)	1.932	2.445	0.7881	Large

Note. Mean difference is computed by subtracting the mean Reg GPA from the mean CT GPA. The pooled SD is the average standard deviation between the Reg GPA and the CT GPA.

Semester grades were significantly higher ($p < .01$) in co-teaching classes than in regular classes in all three achievement groups. According to the calculated effect size, students in the lowest achievement level (overall grade point average of less than 4.99) benefitted most from co-teaching classes, however, students in the average and high achievement levels also earned higher semester grades in the co-teaching classroom. According to Cohen's guidelines, the mean of the grades earned in co-teaching classes by the low achievers is in approximately the 78th percentile of the mean of the grades earned by low achievers in regular education courses. The percentile ranks for average and high achievers are 76th and 66th respectively.

In summary, students earned significantly higher grades ($p < .01$) in co-teaching classes than they earned in regular education classes. Students in all achievement groups apparently benefitted from enrollment in co-teaching classes. The following analysis of the teacher surveys provides some insight into

the perceived roles and responsibilities of the teachers and a general description of the co-teaching model at this school.

Teacher Survey Analysis Procedures

Teacher Survey Collection, Coding and Response Rate

The survey (see Appendix A) was sent by electronic mail using school e-mail addresses to teachers eligible for the study on June 10, 2009. Teachers were given until August 10, 2009 to return the survey. There was a pre-existing relationship between the researcher and the teachers in the study. For this reason, a third party collected the surveys to protect the anonymity of the teachers. She removed all identifying information from the surveys and coded them with appropriately using the Fall, 2008, master teaching schedule(see Appendix D).

Survey Content

The survey consisted of 11 open-ended questions. The survey was created specifically for use in for this study. The first three questions asked for basic information related to teacher assignment and years of teaching experience (see Appendix C). Question number one also asked for a description of the role of the teacher in the co-teaching class enabling the response to be analyzed more in depth.

Twenty-two surveys were sent and 17 were returned for an overall response rate of 77%. Seven of eight special educators (88%) returned the survey and 10 of 14 regular educators (71%) responded. The average number of years in the teaching profession for all respondents was 11.44 years. The average number of years spent teaching for regular educators was 6.9 years and for special educators was 17.9 years. Five of the 10 regular educators (50%) had been teaching less than 5 years. By contrast, four of the seven special educators (56%) had taught for more than 20 years (see Table 11).

The average number of years teaching in at least one co-teaching class was about the same for regular and special educators. The average number of years spent in co-teaching classes for regular educators was 4.3 years and for special educators was 4.6 years. All teachers averaged 4.4 years of service in at least one co-teaching class. Given that the study's main focus is on the co-teaching experience, the disparity in the overall number of years of teaching experience between special educators and regular educators described in the previous paragraph was not viewed as a factor in need of additional investigation; however, this could be an issue to address in future research (see Table 11).

Table 11

<i>Years of Teaching Experience</i>				
Assignment	Teaching Experience	Mean	SD	Range
Regular Educators	All years of experience	6.9	5.47	18
	Years of CT experience	4.3	3.06	9
Special Educators	All years of experience	17.9	11.08	28.6
	Years of CT experience	4.6	2.76	8
All Educators	All years of experience	11.44	7.93	29.6
	Years of CT experience	4.4	2.85	8

Teacher responses to the questions were analyzed using three different perspectives. I initially reviewed the responses as a large group to look for recurring themes. These were common responses detected by the vast majority of teachers as a whole. Secondly, I reviewed the answers by grouping the 10 regular education and seven special education teacher responses separately. The teachers were coded using letters. The regular educators will have an 'R' in front of their letter name and the special education teachers will have an 'S' in front of their letter name. For example, teacher A is a regular educator so the name of this teacher in the study will be RA. Special educator D will be referred to as SD.

Lastly, I compared and contrasted the answers to selected questions given by matched pairs of teachers. Meaning, I looked at the responses of 13 pairs of teachers who worked in the classrooms together as co-teachers. The regular educator is listed first in the matched-pair label. For example, in the

matched pair RASO, teacher A is the regular educator and Teacher O is the special education teacher (see Appendix D). Only the responses to questions one and eleven will be analyzed using matched pairs of teachers. These two questions pertain primarily to the relationship between the co-teachers as opposed to issues related to classroom instruction.

In general, the responses to the questions in the teacher survey were brief and included very few details. The teachers did not include any specific examples in their answers. Many times the answers given by the teachers did not fully address the question. This somewhat limits the conclusions that can be drawn from analysis of the survey; however, there were several important themes that emerged from the data.

Perspective One: Common Responses from All Teachers

Looking at the responses as one large group, there were three general themes that emerged from the surveys as common areas of discussion for regular and special educators. The teachers most frequently cited the need for common planning time, inadequate training and professional development opportunities to help prepare for co-teaching, and concern over the specific roles each teacher should take in the classroom.

Many of the teachers indicated that they did not have common planning time with their co-teachers. Reasons for this varied. In most instances, however, the special educator worked with more than one teacher and in sometimes in more than one content area making the logistics of common planning time

complicated. For various reasons, the teachers were not able to meet before or after school. High school teachers have many duties before and after school making it difficult to meet outside of the school day on a regular basis.

The teachers in the study were concerned that they had very little training specifically addressing the co-teaching model. The responses included descriptions of incidences when new teachers were assigned to co-teaching classes before they were hired at the district. None of the teachers were given the opportunity to volunteer for co-teaching. These assignments were made by the administration. There were no responses indicating that the co-teaching pairs were able to do observations in similar classes or were afforded the opportunity to attend trainings as a pair.

Lastly, the responses indicated a bit of 'role confusion.' The co-teaching pairs, in some cases, had very different perceptions of their roles in the classroom. This was exacerbated by the fact that co-teacher pairs change often. The teachers were continually 'getting used to each other.' Several teachers suggested allowing the co-teaching pairs to work together for more than one year.

As a whole, the teachers agreed that some teaching strategies were especially helpful in the co-teaching class. Teachers cited chunking information, slowing the pace of instruction, teaching in small groups, and giving directions in a variety of ways as specific techniques used frequently in co-teaching classes. According to the majority of the co-teachers, the biggest advantage to all students in the classroom was simply having two sets of eyes in the room to

constantly monitor student learning. Teachers in co-teaching classes believed they did a good job of keeping students on task, identifying students who need help, and addressing academic needs promptly.

The expectations for all students were the same in terms of classroom management. The teachers indicated that all students were expected to follow the same set of discipline rules; however, it was common practice at this school to put behavior plans in place for selected special education students that included a case manager or other special educator in the process of remediation. Some of the special educators did have concerns that certain special needs students had the potential to adversely affect the learning environment—no specifics were communicated in the survey responses. None of the regular educators voiced this concern and no specific examples of disruptive behaviors were given.

Most teachers said there were no characteristics of the co-teaching classroom that were detrimental to the regular education student. A disadvantage to regular education students in co-teaching classes could be that they easily become 'bored' because the pace of the class was slower than a regular class. Special educators noted that regular education students had a propensity to express feelings of not being motivated more often than students with disabilities. The teachers agreed that there were solutions to all of the 'problems' encountered in the co-teaching classroom—just as there are solutions to similar 'problems' in the regular classroom. The key to effectively managing

the co-teaching classroom was to ensure that both teachers interpret and enforce the rules and norms of the classroom consistently.

Perspective Two: Regular Education and Special Education Responses

Question Number 1: What is your role in co-teaching classes? In other words, what are your major responsibilities in educating students in your co-teaching classes? You may want to discuss your classes separately.

All 10 of the regular education teachers indicated that they were the primary content specialists in the classroom. Teacher RP explains, “I am a regular education teacher and I usually take the ‘lead’ role in my classes. I direct discussion, introduce concepts and materials, etc. I typically maintain this throughout my classes and do my best to make the material accessible to all students.”

All of the regular educators said that they were responsible for all or the majority of the instructional preparation, delivery and assessment. Teacher RN had a typical response by reporting, “I set the agenda, instruct, and do most of the formal assessment.” None of the regular education teachers mentioned that their role in the co-teaching class involved working with the special educator. Teacher RF mentioned that part of the role of lead teacher was to “communicate with case managers” but did not specifically refer to the co-teacher.

The special educators indicated that they were, for the most part, active participants in the instructional process. Five of the seven special education teachers specifically said that providing instruction to the class was one of their responsibilities. Six of the seven special educators said they worked with all

students in the classroom. "I help any student who needs assistance regardless of whether the student does or does not have an I.E.P.," said Teacher SK.

None of the teachers indicated in this question that they collaborated with each other as a co-teaching pair. Only three of the seven special educators specifically described a 'helping' relationship with the teacher. Teacher SH's complete description of the teaching role was, "I help around the room and make sure all students are on task. I also help grade papers. If the students have any questions about their assignments, I will help them."

Teacher SL's response illuminates the fact that the experience from one co-teacher to another can be quite different. "In (one of my co-teaching classes), I do everything that the regular classroom teacher does; provide instruction, work one-on-one with students, answer questions, read tests and assignments, etc. In the other class, I am a 'guide on the side.' The teacher does 90% of the instruction and I help out when needed."

Teacher SK provided some explanation for the limited role of the special educator, "If I was in one co-teaching class for the day or if I could remain in the same co-teaching class for more than one year, I could help out more with lectures." Teacher SK also believes that the "same plan times with my co-teaching partner would help with preparing me to assist with class instruction." Lastly, teacher SK said, "I feel that I help the regular education teacher as much as possible and in any way they would like for me to assist."

Other responsibilities listed by the special educators included taking attendance, grading student work, and keeping abreast of the lessons in order to

respond to student questions. Three of the seven special educators said that keeping students on task was part of their role. "When lecturing is going on, I make sure that all students are on task," said Teacher SK.

Question Number 4: What kind of training did you have that specifically addressed the co-teaching classroom?

All teachers indicated that their training and professional development opportunities were limited. The special educators seemed to have had more instruction in college courses and through off-campus workshops. The regular educators had no or very little training before beginning their co-teaching experience and the training they did get was provided by the current school district and held on campus for large groups of teachers.

Recent professional development in the district focused on aligning instruction to the state's identified grade-level and course-level expectations in an effort to prepare students for the state-mandated tests. The district had also provided training to a few teachers for the implementation of School-Wide Positive Behavior Supports (SW-PBS). Very little training had been afforded in the area of co-teaching in the past several years.

Three of the seven special educators indicated that they had studied co-teaching throughout their undergraduate college courses. Teacher SL seems to indicate that the concept of co-teaching is inherent in the certification process. "I am a certified K-12 special education teacher. I have also attended several co-teaching classes," said teacher SL.

The regular education teachers cited in-district professional development activities and one-day seminars as their primary source of training. Teacher RC summed up the training experience as, “I don’t feel like I’ve ever been ‘trained’ to teach in this kind of class. We’ve had handouts about it or it was discussed a little at a workshop day, but I’ve never felt like I knew exactly how it was supposed to work.” Teacher RA has been teaching in the district for four years and in a co-teaching class for two years. When addressing co-teaching training, teacher RA said, “I had no specific training before I started co-teaching. All my training has come in the form of professional development days with this district.”

None of the special education teachers indicated that they were afforded the opportunity to work together with their co-teacher(s) at any of the training sessions. Teacher SJ indicated that, “I have been to one seminar but did not go with a general educator.” Teacher RP described the amount of training provided by the district as, “Honestly, not much. It was addressed briefly in some of my college classes and I was given a few scant hours of ‘training’ in an informal setting with other co-teachers in the district. However, that has been the extent.”

The responses to this question emphasized one of the three general concerns voiced by all teachers—inadequate training and professional development opportunities specifically addressing co-teaching. The teachers indicated that there was training made available by the school district. Unfortunately, the training was apparently not timely, specific, and did not allow for pairs of co-teachers to work together. The quality of the training and the

usefulness were also questioned. The teachers did not indicate that any of the training has transferred to practical use in the classroom.

Question Number 5: On average, how many hours do you spend co-planning with your co-teacher each week?

The number of reported hours spent co-planning ranged from zero to two hours per week. Frequently, planning time was reported as a few minutes before class, during class or for short periods of time before school. Teacher RQ said, “I would like to have at least two hours per week to co-plan with my co-teacher. I feel that the role of the special educator is significantly diminished if we do not have time to plan together. Right now, we have brief conversations before and after class and/or school which is not sufficient to build a true teaching relationship.”

Regular education teachers saw planning as one of their primary responsibilities. “Each week I spend about 30 minutes planning lessons with my co-teacher. I initiate all discussion and receive ideas, but do all prep and foot work,” said teacher RF. The special educators acknowledged that the majority of lesson planning falls back on the regular educator. Teacher SJ said, “In some instances, the general educators have already planned out what they want to do because they have other classes that are not classified as co-teaching.”

Eight of the seventeen teachers indicated specifically that they did not have common planning time. However, three of these teachers said that they found time to co-plan for at least one hour each week. The issue of common planning time is one of the three biggest concerns of the teachers.

There was no evidence that common planning time for co-teachers was given consideration in the master schedule. In general, high school teachers have many duties after school—coaching, sponsorships, etc. Before school can also be a bad time to meet as a co-teaching team if the teachers have children of their own to get to school or daycare. Therefore, the expectation that co-teachers will have time outside of the school day to co-plan is unrealistic.

Question Number 6: Briefly discuss the modifications in content and instructional delivery made in co-teaching classes that affect ALL students. Please indicate whether these modifications are also used in the regular classroom?

Overall, the responses indicated that regular classes and co-teaching classes have similar attributes. In many cases, the instructional strategies used to teach students with special needs are also used to better meet the needs of those students without disabilities. Teacher RE addresses this question with, “The modifications used are, for the most part, transparent. Since I teach mostly freshmen I feel the need to use the same instructional strategies for both types of classrooms. I may take a little extra time reviewing previous lessons, giving more oral/visual cues, or outlining written expression. But I have found that all students can benefit from these things.”

Pacing was mentioned by four of the ten regular educators. Teacher RQ says that, “It is imperative in co-teaching classes to ‘play it by ear’ and not worry about getting behind regular sections. If you just plow through the subject without modifying teaching strategies then you are just teaching a regular class and not accounting for the wide variety of learning needs that can occur in a co-teaching

class.” Teacher RQ also mentioned other strategies used in the co-teaching class such as chunking subject matter, frequent use of real-world application and using numerous formative assessments as opposed to lengthy summative assessments.

The special educators indicated that giving copies of the class notes and re-iterating class rules and directions frequently and in a variety of ways were two very important strategies used with special needs students. Teacher SK indicated that the use of small groups was also an effective teaching strategy for co-teaching classes. However, teacher SK qualified this by saying that the small groups should be of mixed abilities and should not be segregated by putting special education students all in one group. Special educators also advocated reading tests and quizzes to students—and this task was the responsibility of the special educator. Three of the seven special educators indicated that this practice could benefit all students.

Question Number 7: Briefly discuss the modifications in classroom management made in co-teaching classes that affect ALL students. Please indicate whether these modifications are also used in the regular classroom.

The regular education teachers saw classroom management as the opportunity to truly work as a team. The special educator was relied upon to help address potentially disruptive situations with all students. Teacher RP said that, “I rely on my co-teacher for addressing specific issues with a student or students so as to minimize class interruptions. Treating all students equally and without significant divisions between groups with only targeted re-direction has proven a solid method up until this point.”

The majority of the teachers mentioned that the behavioral expectations for students with disabilities and without disabilities were the same. Teacher SI observed that classroom management techniques were the same whether the class was a regular section or a co-teaching section. "I teach in one co-teaching class that requires no change in procedure because the regular teacher is a great classroom manager." On the other hand, teacher SI taught other sections with "a regular teacher that has poor classroom management skills and does not work well with any category of student-regular or special needs."

None of the teachers indicated that classroom management techniques were modified for the co-teaching classes. Teacher RG said that, while having two teachers in the room can be beneficial for classroom management; there were some instances where students would try to "play one against the other." For this reason, it was very important for both teachers to establish and enforce classroom norms.

Question Number 8: Given your answers to numbers 6 and 7 above, how do your co-teaching classes differ from your regular sections?

Five of the ten regular educators described their regular classes and their co-teaching classes as either identical or very similar. Three of the regular educators indicated that they reviewed missing assignments and grades more frequently for the co-teaching sections than for the regular classes. Teacher RE said that, "My regular sections of class usually get more in-depth and tend to run a little smoother. I cannot say that the grades are any better as I tend to check on my regular sections less and thus they tend to have more missing

assignments.”

Regular teacher RQ believes that it was easier to meet the academic needs of students in a co-teaching class. “It is good to have two teachers in the room to assess the ongoing learning needs of the students. High school classes tend to be very large; those students who do not speak up and ask for help may get behind very quickly. The second set of eyes can determine which students may need re-teaching or re-direction more efficiently than if there were only one teacher.”

Four of the seven special educators said that they had not had the opportunity to either observe or teach a regular education class. Teacher SK believed that the ratio between students with and without disabilities assigned to the co-teaching class can have an impact. “Co-teaching and regular classrooms are very similar. All classroom teachers should make modifications to allow all students to succeed. If there are a large number of IEP students, the progression through the material can be somewhat slower at times. If there are a reasonable number of IEP students, there is not a difference.”

Question Number 9: In your opinion, what are the characteristics of a co-teaching class that are beneficial to the learning of regular education students?

Sixteen of the seventeen teachers were able to cite at least one benefit of a co-teaching class for regular education students. Twelve of the seventeen teachers believed that simply having an extra teacher in the room was beneficial to all learners. Teacher SH was unsure of any benefits because, “Most of the regular students think the special educator in the classroom is an aide and most

do not see me as a 'real teacher.' When you ask if they need help, they will say 'no' then they will go to the regular education teacher for help."

Teacher RN described the benefits of having two teachers in the classroom; "With two instructors, the individual needs of the students are more likely to be met. Also, the freedom to ask questions of another adult and refine adult opinions and perceptions in front of students makes for a very engaging and meaningful learning environment." Teacher SK says that, "There are two different teaching styles and personalities and this should guarantee that every student can be reached. There is a content specialist and an instructional specialist in the room working together to maximize the education of all students enrolled in the class."

Only one special educator noted that co-teaching classes could be beneficial for students' social skills. One regular educator indicated that having a diverse student population in the same classroom could be beneficial for regular education students but did not completely explain the comment. Several regular educators cited the special educator's ability to reinforce lessons, chunk information and address individual needs as important to the learning needs of all students.

Question Number 10: In your opinion, what are the characteristics of a co-teaching class that are detrimental to the learning of regular education students?

Three of the ten regular education teachers said that there was a propensity for students without disabilities to become bored because the pace of the class was too slow. They sometimes became bored with the instructional

process and caused discipline problems. Teacher RQ noted this as a possible issue but maintained that “any good classroom manager will be able to quickly re-direct those students or group them with another activity that is aimed at a higher level of cognition.”

Three of the seven special educators said that the regular education students were more difficult to deal with than the students with special needs. Teacher SL said, “To tell the truth, the regular education students are more disruptive than the special education students in most cases. In the classes that I am in it seems like most of the special education students want to do well in the class and just need some extra help.” Teacher SD shared that sometimes regular education students refused to take notes because they thought the special educator would provide them with a complete copy. Some regular education students did not understand that students with special needs had this support and it was not intended for all students. Apparently, this was an on-going argument in some classes.

Two of the special educators voiced concern over improper placement of students with disabilities in the regular classroom. Teacher SI indicated that the mix of students can be a bad situation if the special needs students have too many behavior concerns. Teacher SO agreed that some students with behavior disorders could have outbursts that had potential to compromise the learning environment. Both teachers recommended looking more closely at the class rosters before school starts to make sure these students are evenly distributed throughout the co-teaching sections.

Four of the seven teachers who indicated there was some factor that had the potential to be detrimental to the learning of regular education students also said that there were solutions to the problems. Teacher RP said that co-teaching is “a workable system that needs better integration in to the school day that allows for more preparation and instructional opportunities between the two teachers.”

Question Number 11: Do you have any suggestions for co-teaching implementation or professional development for co-teachers that would improve the inclusive effort at this high school.

The themes of no common planning time, lack of specific training and unclear definitions of roles surfaced and re-surfaced in the responses to this question. Additionally, many teachers indicated that assignment to more than two co-teachers is detrimental. Six of the seventeen teachers specifically wrote about the need for common planning time. Teacher RA’s entire answer to this question was, “Co-teachers need time to plan lessons together!” Teacher RB wrote, “Teachers REALLY need time to plan together.” These responses left little room for misinterpretation.

Five of the seventeen teachers discussed providing quality professional development and training specifically addressing co-teaching. Three of these teachers said that both the special educator and the regular educator should attend the training. The time to discuss what co-teaching ‘looks like’ could alleviate awkward situations that surface in the beginning stages of the co-teaching relationship.

The issue of role confusion was discussed in terms of co-teacher assignments. Suggestions from the teachers included assigning only experienced teachers to co-teaching classes, allowing co-teachers to work together for multiple years, assigning the special educator to one content area, and pairing the special educator with only one or two regular teachers. Teacher RG said that some teachers “may not feel comfortable in the co-teaching classroom experience initially. But after an adjustment period in which both parties are able to see what each one brings to the situation, the process will go much smoother in subsequent years.”

Three of the seven special educators and one of the regular education teachers discussed the perceived displacement of special education teachers. Teacher SI said that “it would be great to have a special services work room and not be in the back of someone else’s classroom. The term ‘marriage’ has been used to describe the relationship between CT teachers. Even members of a real marriage need some private time.” Teacher RG acknowledged, “All special educators would benefit from having a place in each regular educator’s classroom so they can store their materials and have a place of their own.”

Two of the regular education teachers suggested expanding the co-teaching effort district-wide in order to better prepare special education students for the co-teaching classroom. Teacher RF said the special education students are “being thrown to the wolves in high school” after “being sheltered for eight or nine years” in resource classes. In an apparent show of support for the co-teaching model, Teacher SK said, “I feel the co-teaching classes are beneficial

for all students. In the real world, individuals are not separated according to their ability. Co-teaching is a real world, real life skills situation.”

Perspective Three: Matched-Pair Responses

Matched-pair responses were studied for questions one and eleven only. These questions pertained to the roles of the co-teachers in the classroom and asked for suggestions for implementing the co-teaching model in the future. Note the differences and similarities in perspectives. Keep in mind that these teachers worked in the same classroom together and ostensibly were teaching ‘together.’

Question Number 1: What is your role in co-teaching classes? In other words, what are your major responsibilities in educating students in your co-teaching classes? You may want to discuss your classes separately.

Matched pair RASO (Communication Arts).

Teacher RA reported delivering “most of the instruction” while the special educator “does guided practice and review with the students.” Teacher SO described various roles in the classroom which included teaching, planning, grading student work and making accommodations for special needs students. According to Teacher SO, “I do much planning and reading ahead in order to ensure my ability to help and instruct.”

Matched pair RBSD (Social Studies).

The regular educator, Teacher RB, reported being the “front of the room educator who gives most of the information,” The special educator, Teacher SD, described numerous duties to assist students with disabilities such as modifying tests and assignments, locating answers in the textbook, providing copies of notes, reading tests aloud and grading work from all students in the class.

Matched pair RCSI (Science).

Teacher RC claimed to be the “main teacher.” Teacher RC said, “I do all the instruction, lecturing, practice, etc. I am the one in front of the classroom.” Teacher SI’s role was “to cover material in a way that will help all students grasp the main ideas.”

Matched pair RESD (Social Studies).

The regular educator, Teacher RE, claimed to be “responsible for almost everything.” Teacher RE reported making lesson plans, teaching the majority of the lessons and grading “almost everything.” Teacher RE did not like to ask the co-teacher for help because that may “make them feel like an aide.” Teacher RE did say that the co-teacher was willing to help when necessary. The special educator, Teacher SD, described numerous duties to assist students with disabilities such as modifying tests and assignments, locating answers in the textbook, providing copies of notes, reading tests aloud and grading work from all students in the class.

Matched pair RESO (Social Studies).

The regular educator, Teacher RE, claimed to be “responsible for almost everything.” Teacher RE reported making lesson plans, teaching the majority of the lessons and grading “almost everything.” Teacher RE did not like to ask the co-teacher for help because that may “make them feel like an aide.” Teacher RE did say that the co-teacher was willing to help when necessary. Teacher SO described various roles in the classroom including teaching, planning, grading student work and making accommodations for special needs students. According to Teacher SO, “I do much planning and reading ahead in order to ensure my ability to help and instruct.”

Matched pair RFSJ (Math).

Teacher RF’s responsibilities reportedly included active teaching, classroom management, communicating with parents, preparing lesson plans, and making extra copies of notes for students with special needs. Teacher RF also provided “extensive assistance during class and after school for students of all academic levels.” Teacher SJ reported taking roll and assisting students that needed help when it was homework time. Teacher SJ said, “I do teach in some of the classes.”

Matched pair RFSK (Math).

Teacher RF's responsibilities reportedly included active teaching, classroom management, communicating with parents, preparing lesson plans, and making extra copies of notes for students with special needs. Teacher RF also provided "extensive assistance during class and after school for students of all academic levels."

Teacher SK's perceived role was multi-faceted. Teacher SK made modifications to tests and assignments, provided assistance to all students in the class, read tests aloud, made sure all students were on task during lectures, copied notes for special needs students, managed classroom behaviors and replaced the regular educator when a substitute teacher was necessary. Teacher SK could do more active teaching in the classroom if afforded common planning time, fewer preps and less than three different regular teachers to work with.

Matched pair RGSJ (Math).

Teacher RG said, "My primary role in the co-teaching classroom is as the main instructor." Teacher SJ reported taking roll and assisting students that needed help when it was homework time. Teacher SJ said, "I do teach in some of the classes."

Matched pair RNSH (Social Studies).

Teacher RN's role in the co-teaching class was to "set the agenda, instruct, and do most of the formal assessments." Teacher SH made sure students were on task during class, graded papers and helped students with in-class assignments.

Matched pair RPSK (Communication Arts).

Teacher RP took the "lead" role in the co-teaching classes. Teacher RP typically directed discussion, introduced lessons and made materials accessible to all students. Teacher SK's perceived role was multi-faceted. Teacher SK made modifications to tests and assignments, provided assistance to all students in the class, read tests aloud, made sure all students were on task during lectures, copied notes for special needs students, managed classroom behaviors and replaced the regular educator when a substitute teacher was necessary. Teacher SK could do more active teaching in the classroom if afforded common planning time, fewer preps and less than three different regular teachers to work with.

Matched pair RPSL (Communication Arts).

Teacher RP took the "lead" role in the co-teaching classes. Teacher RP typically directed discussion, introduced lessons and made materials accessible to all students. Teacher SL reported being the "guide on the side" in this

particular co-teaching pair. Teacher SL said the regular teacher “does 90% of the instruction and I help out when needed.”

Matched pair RQSO (Communication Arts).

Teacher RQ was the “lead content teacher.” Teacher RQ was reportedly “responsible for determining lesson content, pace and class activities.” Teacher SO described various roles in the classroom including teaching, planning, grading student work and making accommodations for special needs students. According to Teacher SO, “I do much planning and reading ahead in order to ensure my ability to help and instruct.”

Matched pair RPSO (Communication Arts).

Teacher RP took the “lead” role in the co-teaching classes. Teacher RP reportedly directed discussion, introduced lessons and made materials accessible to all students. Teacher SO described various roles in the classroom including teaching, planning, grading student work and making accommodations for special needs students. According to Teacher SO, “I do much planning and reading ahead in order to ensure my ability to help and instruct.”

Comments Regarding Matched Pairs and Perceived Roles

Three of the matched pairs seemed to have very different perceptions of their roles—RESO, RESO, and RFSK. In these cases, the regular education teacher and the special education teacher reported numerous areas of

overlapping responsibilities. The answers indicated a sort of 'competition' between the teachers. The teachers appeared to be 'doing their own thing' instead of collaborating.

Four of the matched pairs responses described an exceptionally limited role for the special educator—RGSJ, RFSJ, RNSH, and RPSL. The special educator's role was akin to a teacher aide or assistant as opposed to a fully certificated teacher who is supposedly an expert in instructional delivery. The question that cannot be answered by these responses is whether the regular education teacher constructed this relationship in this manner purposefully or if the special education teacher in these cases preferred to take a seemingly subordinate role.

The remaining six pairs seemed to share the responsibilities within the classroom. These responses produced a very limited amount of information. However, the overall suggestion from was that the regular education teacher was the 'lead' teacher and the special educator was involved in the teaching process in a somewhat limited capacity.

Question Number 11: Do you have any suggestions for co-teaching implementation or professional development for co-teachers that would improve the inclusive effort at this high school.

Matched pair RASO (Communication Arts).

Teacher RA simply stated, "Co-teachers need time to plan lessons together!" Teacher SO suggested that students with certain behavioral or emotional disturbances should not be placed in the same co-teaching classrooms at the same time. Counselors and administrators should do a better

job of assessing the student make-up of co-teaching classes. Teacher SO recommended having a resource room for very disruptive special needs students.

Matched pair RBSD (Social Studies).

Teacher RB's concerns were not based on teacher relationships. Teacher RB suggested ensuring that the special needs students are the first ones to get help in the class and that their necessary supports are appropriately communicated with the regular education teacher. Teacher SD suggested that co-teaching pairs work together for more than one year. Teacher SD said "that it takes a couple of years before the co-teachers develop trust in one another."

Matched pair RCSI (Science).

Teacher RC advocated that teachers "really need time to plan together." Teacher SI believed that certain students with severe behavioral concerns do not need to be included in the co-teaching classroom. Teacher SI also pointed out that special educators have an abundance of paperwork to complete through the I.E.P. process, thus, adding the responsibility of preparing lesson plans for co-teaching classes "is like having two jobs." Teacher SI also would like a separate space to work outside of the classroom. According to Teacher SI, there was a real need for co-teachers to have a private place and time away from the classroom.

Matched pair RESD (Social Studies).

Teacher RE would like to see written objectives for the co-teaching class. Teacher RE said that new teachers should not be placed in co-teaching situations because they simply aren't ready to add that dimension to their teaching duties. Teacher RE also believed that special educators should have the opportunity to work in the same content area and with the same teachers—as opposed to getting two or three different new co-teachers each year. Teacher SD suggested that co-teaching pairs work together for more than one year. Teacher SD says “that it takes a couple of years before the co-teachers develop trust in one another.”

Matched pair RESO (Social Studies).

Teacher RE would like to see written objectives for the co-teaching class. Teacher RE said that new teachers should not be placed in co-teaching situations because they simply aren't ready to add that dimension to their teaching duties. Teacher RE also believed that special educators should have the opportunity to work in the same content area and with the same teachers—as opposed to getting two or three different new co-teachers each year.

Teacher SO suggested that students with certain behavioral or emotional disturbances should not be placed in the same co-teaching classrooms at the same time. Counselors and administrators should do a better job of assessing

the student make-up of co-teaching classes. Teacher SO recommended having a resource room for disruptive special needs students.

Matched pair RFSJ (Math).

Teacher RF believed that the co-teaching model should be used throughout the district so students are familiar with the process before entering high school. Teacher RF said, “In lower grade levels, co-taught students are pulled from the general classroom, taught in small groups, and receive more intensive one-on-one assistance that is not ideal or practical in high school or post-secondary environments.”

Teacher SJ indicated, “The special educator is the one that is invading the general educator’s classroom.” Teacher SJ believed that all special educators should have a place to store personal belongings and teaching materials in each classroom. Teacher SJ also advocated allowing co-teachers to request with whom they want to work and allowing the teams to stay together for more than one year. These items would make it easier “to have a cohesive relationship between the educators.”

Matched pair RFSK (Math).

Teacher RF believed that the co-teaching model should be used throughout the district so students are familiar with the process before entering high school. Teacher RF said, “In lower grade levels, co-taught students are pulled from the general classroom, taught in small groups, and receive more

intensive one-on-one assistance that is not ideal or practical in high school or post-secondary environments.”

Teacher SK said that co-teachers should have common planning time and should attending training activities together. Teacher SK also believed that teachers should work together for more than one year and special educators should work with only one or two different regular educators each year.

Matched pair RGSJ (Math).

Teacher RG suggested grouping students by achievement level. High achieving special education students should be placed with high achieving regular education students, and etc. Teacher RG also advocated that co-teachers need to attend training together and have common planning time. Teacher RG said that regular education teachers should provide special educators with a space of their own in the classroom. In addition, Teacher RG advised co-teachers to be patient because it takes time to develop a good working relationship as a co-teaching team.

Teacher SJ indicated that “the special educator is the one that is invading the general educator’s classroom.” Teacher SJ stated that all special educators should have a place to store personal belongings and teaching materials in each classroom. Teacher SJ also advocated allowing co-teachers to request with whom they want to work and allowing the teams to stay together for more than one year. These items would make it easier “to have a cohesive relationship between the educators.”

Matched pair RNSH (Social Studies).

Teacher RN said that “allowing successful teams of co-teachers to work together would be an obvious suggestion.” Also, Teacher RN would allow special educators to work in the content area they choose. Teacher SH did not offer suggestions for implementation; however, Teacher SH believed that “co-teaching is much more effective in the elementary school setting.”

Matched pair RPSK (Communication Arts).

Teacher RP recommended common planning time and limiting the number of different teachers the special educators have to work with. Teacher RP noted that building time into the school calendar for co-teachers to communicate would provide “a more coordinated effort to improve student achievement.” Teacher SK said that co-teachers should have common planning time and should attending training activities together. Teacher SK also believed that teachers should work together for more than one year and special educators should work with only one or two different regular educators each year.

Matched pair RPSL (Communication Arts).

Teacher RP recommended common planning time and limiting the number of different teachers the special educators have to work with. Teacher RP advocated that building time into the school calendar for co-teachers to communicate would provide “a more coordinated effort to improve student achievement.”

Teacher SL observed that some teachers like co-teaching and some do not. Teacher SL enjoyed co-teaching “in its true form” but “after seven years of college and two degrees, I really do not want to be used as just a classroom paraprofessional.”

Matched pair RQSO (Communication Arts).

Teacher RQ believed that co-teachers should attend trainings together and should work as a team for more than one year. Teacher RQ advocated common planning time for co-teachers and special educators should be placed in the content area “in which they feel competent.” Teacher RQ said that administrators should evaluate co-teaching teams and classes frequently to assess the working relationships and determine whether students are placed properly. Teacher RQ believed that if the counselors would take more time to examine the mix of students assigned to co-teaching classes, this would “ensure a healthy learning environment.”

Teacher SO suggested that students with certain behavioral or emotional disturbances should not be placed in the same co-teaching classrooms at the same time. Counselors and administrators should do a better job of assessing the student make-up of co-teaching classes. Teacher SO preferred a resource room for disruptive special needs students.

Matched pair RPSO (Communication Arts).

Teacher RP recommended common planning time and limiting the number of different teachers the special educators have to work with. Teacher RP believed that building time into the school calendar for co-teachers to communicate would provide “a more coordinated effort to improve student achievement.” Teacher SO suggested that students with certain behavioral or emotional disturbances should not be placed in the same co-teaching classrooms at the same time. Counselors and administrators should do a better job of assessing the student make-up of co-teaching classes. Teacher SO believed in a resource room for disruptive special needs students.

Comments Regarding Matched Pairs and Suggestions for Implementation

Matched pair RCSI had an interesting combination of responses. Regular educator RC said teachers need more time to plan together during the school day. However, special educator SI said that teachers need their own private place to periodically get away from each other.

Matched pairs RESD and RGSJ focused on the relationships involved in co-teaching. The pairs agreed that it takes time to develop good working relationships and time to form a cohesive team. Matched pair RPSK agreed that co-teachers need common planning time. Matched pair RQSO agreed that student placement is a concern and suggest that counselors and administrators evaluate this process.

Using the responses to make inferences proved somewhat difficult because the answers were relatively short and non-specific. It would be interesting to know whether some teachers chose to censor their responses even though it was clearly articulated that the surveys were anonymous. However, for the most part, the matched pairs indicated a need for common planning time and the opportunity to train and work as a co-teaching team for more than one year.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of the Findings

Research Question Number 1: Does enrollment in co-teaching classes affect the academic achievement of regular education students?

A cursory examination of the descriptive data obtained from the students enrolled in regular and co-teaching classes concurrently ($n = 124$), demonstrated that semester grade point averages were higher in co-teaching classes than in regular education classes for all three achievement groups. Using a series of inferential procedures, it was discovered that semester grades earned in co-teaching classes were significantly higher ($p < .01$) than grades earned in regular classes by students in all three achievement levels. Student achievement levels were classified as low (0.00-4.99), average (5.0-7.99), or high (8.0-11.0) based on overall grade point averages.

Cohen's d coefficients were generated for each achievement level to determine the effect size of the co-teaching model. Students in the lowest achievement group benefitted most from placement in the co-teaching class with a large effect size. Effect sizes for the average and high achievement groups were medium. According to Cohen's guidelines, the mean of the grades earned in co-teaching classes by the low achievers is in approximately the 78th percentile of the mean of the grades earned by low achievers in regular education courses. The percentile ranks for average and high achievers are 76th and 66th respectively.

Research Question Number 2: What are the attributes of co-teaching classrooms that may have an effect on the academic performance of all students?

Half of the regular education teachers claimed they conduct co-teaching and regular classes similarly. Twelve of the seventeen teachers answering the survey said that the most important aspect of a co-teaching classroom may simply be the presence of two teachers in the room. This situation allows for one or both of the teachers to more closely monitor student learning and quickly respond to the needs of all students. Regular education and special education teachers thought they were better able to keep students on task with two teachers in the room. Three of the seven special education teachers saw keeping students on task and handling minor discipline issues during class as their responsibility.

The teacher surveys indicated that instructional strategies used in the co-teaching classes such as presenting information in 'chunks,' proceeding at a slower pace, working with students in small groups, and giving directions in a variety of ways may be beneficial for all learners. Several of the regular educators indicated that they check grades and missing assignments more often in co-teaching classes than in regular education classes and felt the constant reminders were effective in keeping student grades higher. Sixteen of the seventeen teachers said that co-teaching classes can be beneficial for all learners.

Research Question Number 3: What are the similarities and differences in opinion of regular education teachers and special education teachers regarding the co-teaching model?

A majority of the teachers indicated in the survey that they were unclear as to what their role was in the co-teaching classroom. There were many reasons given for this including a lack of clarification from the administration, underdeveloped relationships with co-teachers, assignment to undesirable content areas, and having to work with more than two co-teachers each day.

There was a limited amount of information available from the matched pair evaluation; however, it was clear that some pairs shared similar views while others gave answers that described very different perspectives regarding role and suggestions for implementation. In general, the special educator's role in the classroom was to assist the regular education teacher. There were a wide variety of responsibilities described by the special educators—from taking attendance to teaching lessons.

All of the regular educators indicated that they were the 'lead' teacher in the classroom and were responsible for lesson planning, instruction and assessment. None of the regular education teachers mentioned that their role in the co-teaching class involved working with the special educator. The implication here is that the teachers are not working together but rather as separate entities in the same physical space. There may be several factors leading to this consensus. It is feasible that the co-teaching pairs have not had time to develop as true co-teaching teams. Other possible explanations could include the fact that there has been little effective training, no time to co-plan or collaborate in

general, the roles have not been clearly defined by the administration or there could be a lack of commitment by the teachers because the co-teaching role was assigned to them as opposed to allowing them to volunteer for the task.

Conclusions and Recommendations for Practice

The results of this study indicate that students without disabilities earn higher grades in co-teaching classes than in regular education classes. Students who earn relatively low grades may benefit the most from enrollment in co-teaching classes. Given this information, a recommendation to school personnel would be to purposefully place struggling students in co-teaching classes so they can potentially benefit from the instructional strategies and presence of a second teacher to help monitor their progress and give them extra attention before falling behind or missing key concepts. The caveat I place on this recommendation is that counselors and administrators should assess the make-up of co-teaching classes (and all classes) to make sure the needs of the group are not so great that the learning environment is compromised.

The teachers cited common planning time as important for successful co-teaching. It may be difficult to accomplish this during the school day. Creative scheduling could afford co-teachers time to meet when they would otherwise be given lunch duty or study hall supervision. Another possible solution would be for administrators to limit extra-curricular responsibilities for co-teachers to allow them ample time to meet before or after school. Giving co-teachers time to plan together—whether it is during the school day or accomplished through relieving

the teachers of before or after school duties—is necessary for true co-teaching to occur (Murawski & Dieker, 2008).

Providing specific training for co-teachers each year before school starts and allowing the co-teaching pairs to work together during the training was suggested in the survey responses. Additionally, school administrators should make sure that special educators are paired with only one or two regular educators each day and place them in the content area(s) in which they are the most competent and allow these teams to work together for multiple years in order to truly develop an effective working relationship (Simmons & Magiera, 2005).

The special education teachers defined roles that were clearly subordinate to the regular education teachers. The regular education teachers, in general, spoke favorably of the potential benefits of the co-teaching model but did not directly address their relationship with their co-teachers—perhaps because the survey questions did not specify to do so. When using the ‘lead and assist’ co-teaching model, the role of the special educator may seem subordinate on the surface, but true co-teaching teams clarify their individual roles and respect each other as professionals (Dieker, 2001). The recommendation is for administrators to clearly define what a co-teaching classroom ‘looks like’ in their school and expect to see the team working together as two professionals every single day.

Recommendations for Further Research

The findings in this study indicate that student grades were higher in co-teaching classes than in regular education classes. What was the reason for this? The teachers indicated that they used a few instructional strategies in the co-teaching classes that were not widely used in the regular classes; however, they also indicated that simply having two teachers in the room was an important element in the success of the co-teaching model. Further research could focus on the use of different teaching strategies and further isolate instructional methods as a possible explanation for differences in academic achievement.

Semester grades may not be the best way to measure student achievement. Grades can be at least partially subjective, relative to the performance of the group or arrived at through a variety of means. Additional research may use other factors (or combinations of factors) to measure progress.

The responses to the teacher surveys were generally very short and included few details. The development of a survey that would be capable of producing more specific responses could be helpful. The brief answers in this study made it difficult to fully understand the relationships between the co-teachers and discern the particulars regarding the differences between the two teaching models.

Additional research in this area may focus on how the co-teaching model fits into a school's Response to Intervention (R.t.I.) plan and how it can be used or adapted to address the needs of struggling students. Push-in classes for language services, Title 1 reading intervention and a myriad of other instructional

models should be studied to determine their role in educating students with and without disabilities.

Final Thoughts

This has been an enlightening study. The confirmation that students earn higher grades in co-teaching classes as opposed to regular classes adds credence to the co-teaching impetus at this school. Resource classes keep students with disabilities separated from the students without disabilities and may not allow for exposure to the full curriculum—socially and academically. Placement in the regular education classroom is the least restrictive environment and should be an option for all students with disabilities who are able to function in that environment with the proper supports and services. Regular education students can benefit from the attributes of co-teaching classes described in this study.

There are issues that need to be addressed when implementing the co-teaching model. Teachers need time to collaborate, appropriate training and administrative support and guidance. Teachers working together as co-teaching teams have the potential to reach all students placed in their classrooms. Mutual respect for each other as professionals is the foundation on which to build an effective co-teaching relationship.

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APPENDICES

Appendix A

Survey Sent to Regular and Special Educators

This e-mail is being sent to you because you were either a regular or special educator who taught a co-teaching class during the 2008-09 School Year at Perryville High School that is being included in the research for the preparation of the dissertation for Linda Buerck in her Ph.D. program at Southern Illinois University at Carbondale. Your e-mail address was obtained from PCSD #32. The research involves the study of the instructional strategies and classroom management techniques used in co-teaching classes that may or may not be used in the regular classroom. E-mail addresses were obtained from the PCSD #32 e-mail database.

Completion and return of this survey indicates voluntary consent to participate in this study. If you choose to return the survey, please return this correspondence to Mary Roth on or before August 10, 2009. The survey is brief and should take no more than 30 minutes of your time. Mary will print the final surveys in a manner that will protect your anonymity. All identifying information regarding the person submitting the survey will be removed before submitted to Linda. Please do not include student names in your responses. Teacher and student names will not be revealed as a result of this project. Thank you for your help. No future e-mails will be sent.

If you have questions or concerns regarding this survey, please contact one of these two persons:

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Research Topic: Effects of Enrollment in Co-Teaching Classes on the Academic Performance of High School Students Without Disabilities

1. Are you a regular or special educator? What is your role in your co-teaching classes? In other words, what are your major responsibilities in educating students in your co-teaching classes? You may want to discuss your classes separately if you teach with more than one co-teacher each day.
2. How many years have you been teaching?
3. How many years have you taught at least one co-teaching class?

4. What kind of training did you have that specifically addressed the co-teaching classroom?
5. On average, how many hours do you spend co-planning with your co-teacher each week?
6. Briefly discuss the modifications in content and instructional delivery made in co-teaching classes that affect ALL students. Please indicate whether these modifications are also used in the regular classroom.
7. Briefly discuss the modifications in classroom management made in co-teaching classes that affect ALL students. Please indicate whether these modifications are also used in the regular classroom.
8. Given your answers to numbers 6 and 7 above, how do your co-teaching classes differ from your regular sections?
9. In your opinion, what are the characteristics of a co-teaching class that are beneficial to the learning of regular education students?
10. In your opinion, what are the characteristics of a co-teaching class that are detrimental to the learning of regular education students?
11. Do you have any suggestions for implementation or professional development that would improve the co-teaching effort at this high school?

Thank you for taking your valuable time to respond to this survey. A copy of this research will be made available to all faculty and staff at PCSD #32 when it is complete.

This project has been reviewed and approved by the SIUC Human Subjects Committee. Questions concerning your rights as a participant in this research may be addressed to the Committee Chairperson, Office of Research Development and Administration, Southern Illinois University, Carbondale, IL 62901-4709. Phone (618)453-4533. E-mail: siuhsc@siu.edu

Appendix B

Letter of Permission from Superintendent

March 2, 2009

To Whom It May Concern,

As the superintendent of Perry County School District #32, I have discussed the research project proposed by Linda Buerck as part of her program of studies at Southern Illinois University at Carbondale. I am in agreement that she can collect, record, and report data from our Student Information System. I understand that the data will be analyzed and published in accordance with the student records privacy policies outlined by our Board of Education.

Mrs. Buerck will provide a copy of the information garnered through her research for our perusal. Please feel free to contact me if you have questions regarding our agreement.

Sincerely,

Mr. Kevin Dunn, Superintendent
Perry County School District #32

Appendix C

Teacher Assignment and Years of Teaching Experience

Teacher	Regular or Special Educator	Number of years Teaching Experience	Number of years Co- Teaching Experience
RA	Regular	4	2
RB	Regular	10	10
RC	Regular	9	9
SD	Special	30.6	6
RE	Regular	4	4
RF	Regular	1	1
RG	Regular	11	3
SH	Special	26	1
SI	Special	28	5
SJ	Special	12	9
SK	Special	21	3
SL	Special	6	6
RM	Regular	19	3
RN	Regular	6	6
SO	Special	3	2
RP	Regular	2	2
RQ	Regular	3	3

Appendix D

Teacher Matched Pairs

Teacher	Regular or Special Educator	Content	Matched Pair(s)
RA	Regular	Comm Arts	RASO
RB	Regular	Soc Studies	RBSD
RC	Regular	Science	RCSI
SD	Special	Soc Studies	RBSD, RESD
RE	Regular	Soc Studies	RESD, RESO
RF	Regular	Math	RFSJ, RFSK
RG	Regular	Math	RGSJ
SH	Special	Soc Studies	RNSH
SI	Special	Science	RCSI
SJ	Special	Math	RFSJ, RGSJ
SK	Special	Comm Arts/Math	RPSK/RFSK
SL	Special	Comm Arts	RPSL
RM	Regular	Math	None
RN	Regular	Soc Studies	RNSH
SO	Special	Comm Arts/Soc Studies	RASO, RQSO, RPSO/ RESO
RP	Regular	Comm Arts	RPSO, RPSK, RPSL
RQ	Regular	Comm Arts	RQSO

VITA

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Dissertation Title:
Effects of Enrollment in Co-Teaching Classes on the Academic
Performance of High School Students Without Disabilities

Major Professor: D. John McIntyre