COTEACHING IN A HIGH SCHOOL HISTORY CLASS:

A CASE STUDY OF STUDENTS WITH LEARNING DISABILITIES

A Dissertation

by

LINDA EASTWICK COVINGTON

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2009

Major Subject: Educational Psychology

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ABSTRACT

Coteaching in a High School History Class:

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(May 2009)

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Coteaching is one instructional delivery model that purports to provide students with supports they need to succeed in the general education setting. This case study used qualitative methodology, which was supplemented by quantitative data, to explore the instructional factors that may contribute to the achievement of high school students with learning disabilities who are placed in a cotaught setting. An optimal environment was created for coteaching and included careful selection of the cotaught team, support from the campus administration, initial and ongoing training for the coteachers, and the creation of common planning periods. Two cotaught classrooms were observed for one semester, and five students with learning disabilities were selected from these classrooms for observation and interview. Additional data included interviews with the campus principal, campus teachers, and the coteachers, as well as weekly observations using the Stallings Observation System. Interviews and observations suggested that there was little change in teacher or student behaviors.

DEDICATION

I dedicate my dissertation to my father and mother, my personal coteachers, and upon whose shoulders I stand, and to Layton, who encouraged me to dream Texas-sized dreams with all of his Texas-sized heart.

ACKNOWLEDGEMENTS

This body of research would have been forever "thoughts swirling in my head" without the assistance and support of many. First, I thank my students from Olton, Texas, (the classes of 1997, 1998, 1999, and 2000), whose energy, insights, and resilience inspire me to this day. My colleagues from Texas A&M, especially Richard Evans and Mona Cole, provided comfort, solace, and sympathy for the inevitable periods of despair, and lots of opportunities for laughter during the rest of the journey. I had the privilege of studying under Dr. Yvonna Lincoln, whose conversations and writings opened up so many new ways of "seeing." Audrey Arnold provided me the time and the resources to make this study a possibility; without her support, I would still be "All but Dissertation" (ABD). And without the cooperation of the coteachers in this study, I would have little to report. They gave willingly of their time and scheduled "one more thing" to make this study possible.

My friends and family provided the "atta girls" when they were deserved, compassion during anxious moments, and discerning bits of advice in between. Kathy and Ada allowed me to pick their brains at will, and they were always ready to go out to dinner when writer's block appeared. Jane and Lorrie never tired of listening with sympathetic ears, reading and responding to emails with encouragement, and cheering during the triumphant moments. Eric and Alexis expressed their confidence in my acquisition of the "Dr. Mom" title in a thousand ways as they forged ahead with their

own accomplishments. And Charles consistently presented me with wise counsel and unflagging support, as only a loving partner could.

My committee challenged me at every opportunity, reminding me of my potential. Thank you Dr. Zellner, Dr. Parrish, and Dr. Palmer for your support during this journey! But without the encouragement and persistence of my chair, Dr. Laura Stough, this research would never have materialized. She knew when to prod, when to reflect, when to sympathize, and when to celebrate. (Now!) She never gave up, never gave in, and never, ever stopped believing in me.

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CHAPTER I

INTRODUCTION

Coteaching in the general education classroom is a service delivery model that has received increasing attention since the advent of the No Child Left Behind Act of 2001 (NCLB). The overarching purpose of the law is "… to ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic assessments" (No Child Left Behind Act, 2002). One component of NCLB is the requirement that all teachers of core content areas were highly qualified to teach by the end of the school year 2005-2006. The federal government has provided a broad definition of *highly qualified*. In general, a *highly qualified teacher* is one who has a bachelor's degree, has earned teacher certification, and has demonstrated competence in core subject knowledge and teaching. Core subjects include English, reading or language arts, mathematics, science, foreign languages, civics and government, economics, arts, history and geography. Although there are formulae for existing teachers to use to determine their highly qualified status which are based on years of experience, training, and college course work, new teachers must meet the highly qualified standards as outlined above before they can begin teaching (Green, 2005).

This dissertation follows the style of *Teaching Exceptional Children*.

The highly qualified mandate has been especially challenging for special education teachers in secondary education classes, as traditionally, they have taught across all subject areas, most of the time in small group instruction. Teachers who teach in self-contained classes are exempt from the highly qualified mandate, as they teach the students who do not access the general curriculum; however, teachers who teach students in resource or in basic academic classes do need to meet the highly qualified mandate, as they teach the core courses for which students receive high school credit from the general curriculum. Thus, students needing support from a resource room in any of the core subjects now must be taught by a teacher who is both highly qualified in special education and highly qualified in each core subject in which he or she provides such support.

As this requirement mandates that special education teachers at the secondary level must earn a multitude of degrees or certifications, variations of the collaborative teaching model have been proposed that would meet the NCLB mandates while providing students the specially designed instruction that is mandated by Individuals with Disabilities Education Improvement Act of 2004 (IDEA 2004a). One model that has proliferated in recent years is coteaching, in which the special education teacher works jointly with the general education teacher to provide direct services to students. Although the research base on coteaching has grown since it was first described as a "practical merger between general and special education integration" (Bauwens, Hourcade, & Friend, 1989, p. 17), most of the published research to date has been conducted with students and teachers at the elementary level (Wallace, Anderson, Bartholomay, 2002).

As coteaching at the secondary level presents unique challenges not associated with elementary level coteaching (Mastropieri, et al., 2005), research results need to be differentiated to appropriately assess coteaching efficacy. At the secondary level, few studies have been conducted to determine the effect that coteaching has on academic achievement (Murawski & Swanson, 2001), and these have yielded mixed results. Although research provides best practice indicators for coteaching at the secondary level (e.g., Dieker, 2001; Dieker & Murawski, 2003; Keefe & Moore, 2004), there have been no studies to date that have reported best practice interventions on student achievement or behavior.

Statement of the Problem

In 2004 6.6 million students received special education services in the public school systems of the United States. Of these students, over 2.8 million were classified as *learning disabled*. Nationally, 51% of all students classified as learning disabled spent one or fewer class periods a day out of a seven-period day outside of the general education classroom. A typical placement for these students is in a resource room taught by a special education teacher. Over a third (36%) of these students spent two to four class periods outside of the general education setting. Another 12% spent five or more periods of a seven-period day outside of the general classroom setting (National Center for Education Statistics [NCES], 2005). Significant numbers of students with learning disabilities are spending at least part of their day outside of the general education setting.

Learning disabilities appear on a continuum. Students with a mild form of learning disabilities can successfully perform in the general education classroom and

progress with their peers with minimal supports, such as having increased time to complete assignments and receiving orally administered tests. Students with more severe forms of learning disabilities are generally placed in resource classes. The purpose of educating students with more severe forms of learning disabilities in a resource room, outside of the general education setting, is to provide the kinds of intensive and explicit instruction not usually provided in the general education classroom. Typically, students in resource rooms are taught by teachers highly qualified in special education, but not necessarily in every core subject in which they teach. Resource teachers are often expected to teach most or all of the core academic subjects, which maximizes their level of support to the campus.

As students are required to read from increasingly complex texts as they progress through school, many students with reading disabilities are unable to meet the demands of required courses in the content areas of high school (Allington, 2002; Deshler, et al., 2001). Most teachers at the secondary level assume that students in content courses possess the requisite skills for independent learning (Mastropieri, et al., 2003). Results from the National Assessment of Education Progress (NAEP) in reading, however, illustrate increasingly larger gaps between students with disabilities and those without disabilities from grade four to grade twelve (NAEP, 2007), suggesting that the demands of a traditional secondary classroom for many students with disabilities are overwhelming.

Darling-Hammond (2000) examined data from a 50-state policy survey, case studies of selected states conducted from the Center for the Study of Teaching and

Policy, the 1993-94 Schools and Staffing Surveys, and the NAEP, sponsored by the National Center for Education Statistics, to determine the variables that most affected student achievement. She stated in her conclusion:

> The most consistent highly significant predictor of student achievement in reading and mathematics in each year tested is the proportion of well-qualified teachers in a state: those with full certification and a major in the field they teach (r between .61 and .80, $p < .001$). The strongest, consistently negative predictors of student achievement, also significant in almost all cases, are the proportions of new teachers who are uncertified (r between -.40 and -.63, $p < .05$) and the proportions of teachers who hold less than a minor in the field they teach (r between -.33 and -.56, $p < .05$). (Darling-Hammond, 2000, Findings section, para. 7)

This mounting evidence suggests that a highly qualified teacher is fundamental to the academic achievement of students; yet, large numbers of students with disabilities–primarily those who are taught in resource rooms–do not receive instruction from highly qualified teachers in their present instructional settings. As the achievement gap between students with disabilities and those without them continues to widen, it is clear that the traditional instructional delivery system for students with learning disabilities needs reexamination.

The highly qualified mandate of NCLB most directly affects special education teachers who teach students with high incidence disabilities, such as learning disabilities. In addition to being qualified in service delivery and strategy instruction differentiation,

these teachers must now be qualified in each core subject they teach. District certification officers verify teacher qualification and report the information to the state education agency, which then includes it in a report to the U. S. Department of Education. Teachers may prove qualification by earning: a college major in the subject(s) they teach, a graduate degree, credits equivalent to a major, advanced certification from the state, or by passing a state examination. Experienced teachers may also demonstrate that they are highly qualified with a combination of professional development, years of experience, and knowledge in their subject (Green, 2005). Although the highly qualified mandate has brought about some positive changes, such as increased communication between special and general educators, it has also been criticized by some for its overwhelming emphasis on the content knowledge of teachers as an indicator of teaching effectiveness.

At the secondary level, the highly qualified mandate is particularly problematic, as special education teachers are now required to demonstrate competency in each subject they teach, in addition to competencies in special education theory and service delivery models, if they remain in the resource room teaching multiple core courses. While competency in all core subjects at the elementary level can be achieved with a generalist certification, competency in core subjects at the secondary level requires a breadth and depth of knowledge not typically achieved in more than one or two areas, given the typical amount of college course work, experience, or training required of prospective special educators. Thus it is rare to find a teacher at the secondary level who is highly qualified in both special education and in more than one core subject area.

One delivery system that has been receiving more attention in the literature and can be viewed as a remedy to the highly qualified dilemma is that of coteaching. By pairing a highly qualified special education teacher with a highly qualified teacher of a core content area in a coteaching situation, students with disabilities have access to the general education curriculum in a setting that can provide the supports that meet their individual needs. Although this model appears to be an intuitively effective way to teach a diverse classroom, there has been little research on its effect on student achievement, especially at the secondary level.

Purpose of This Study

The purpose of this study was to explore the instructional factors that may contribute to the achievement of students with learning disabilities in a cotaught class in a high school setting. In this case study, several types of data were collected in order to investigate the following questions:

1) What is the nature of coteaching behaviors in a high school setting?

2) What are the perceptions of key stakeholders (teachers, students with learning disabilities, principals) in a cotaught setting?

3) Over a semester of coteaching, do teachers' instructional behaviors change?

4) Over a semester in a cotaught class, do behaviors of students with learning disabilities change?

5) Over a semester in a cotaught class, do measures of achievement from students with learning disabilities change?

Definition of Terms

The following terms will be used in this research:

Core subjects. Core subjects as defined in NCLB include English, reading or language arts, mathematics, science, foreign languages, civics and government, economics, arts, history and geography.

Coteaching. Coteaching as used in this study is a service delivery model in which two teachers, one highly qualified in a content area and one highly qualified in special education, are jointly accountable for the planning, delivery, and evaluation of instruction designed to meet the needs of a diverse group of students—including those with disabilities—in one classroom, and are jointly accountable for the academic outcomes of those students.

Individual Education Program. An Individual Education Program (IEP) is a document that is jointly created by teachers, parents, school administrators, related services personnel, and students (when appropriate) to improve educational results for children with disabilities. It identifies personalized goals, support systems, assessments, and timelines of completion for each student with disabilities.

Inclusion. Inclusion is a belief system shared by every member of a school as a learning community about the responsibility of educating all students so that they reach their potential. (Region 4 Education Service Center, 2004)

Learning disability. A learning disability is one of thirteen disability categories cited in the Individuals with Disabilities Education Improvement Act of 2004. It is defined as:

> . . . a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Specific learning disability does not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage" (IDEA 2004b: Definitions, 2004).

A multidisciplinary team determines a student's eligibility by reviewing documents, observations, and assessments that indicate that the student is not achieving adequately for his age or does not meet grade level standards in one or more of the following: oral expression, listening comprehension, written expression, basic reading skills, reading fluency skills, reading comprehension, mathematics calculation, and mathematics problem solving (IDEA 2004c: Specific learning disability existence, 2004).

In Texas, legislation in the fall of 2007 required schools to include a Response to Intervention component in their eligibility determinations. Whereas prior to November 2007, eligibility could be determined on the basis of the discrepancy between intellectual ability and academic achievement, consideration of a child's response to appropriate instruction provided by qualified personnel must now be considered. Presently, eligibility must include data indicating that the child received appropriate instruction by a qualified

teacher, in addition to formal testing which indicates variance among specific cognitive functions and/or intellectual ability (Commissioner's rules concerning special education services, 2007).

Resource class. A resource class is one that is dedicated to supporting the needs of students with special needs, especially those with high incidence disabilities, such as learning disabilities.

Secondary level. The secondary level is defined in the State of Texas as grades seven through twelve.

Solo teaching. Solo teaching is the traditional instructional service delivery model where one highly qualified teacher is solely responsible for the planning, delivery, and evaluation of instruction for a group of students in one classroom, and is accountable for the academic outcomes of those students.

State-Developed Alternative Assessment. The State-Developed Alternative Assessment (SDAA) was a standardized test administered annually to students in grades 3-10 in special education who were instructed using the TEKS, but whose IEP committees deemed the TAKS inappropriate as a measure of progress. It was replaced in 2007-2008 with two alternative assessments: the TAKS Accommodated (grade level with accommodations) and the TAKS-Modified (grade level with modifications and/or accommodations).

Texas Assessment of Knowledge and Skills. The Texas Assessment of Knowledge and Skills (TAKS) is a standardized test administered annually to students in grades 3

through 11 (or exit level) to assess their attainment of reading, writing, mathematics, science, and social studies skills required under Texas state standards.

Texas Essential Knowledge and Skills. The Texas Essential Knowledge and Skills (TEKS) is the state-mandated curriculum in Texas.

CHAPTER II

REVIEW OF LITERATURE

To explore the instructional factors that contribute to the achievement of students with learning disabilities in a high school cotaught classroom, it is important to consider the legal factors that influenced this study. Federal initiatives such as the No Child Left Behind Act of 2001 (NCLB) and the Individuals with Disabilities Education Improvement Act of 2004 (IDEA 2004) have emphasized student outcomes and accountability in the classroom. Both initiatives require that the curriculum for students in special education be more closely aligned to the curriculum for students in general education and that teachers and administrators be held accountable for the achievement of all students. In an effort to assure that these mandates are met, both NCLB and IDEA 2004 call for highly qualified teachers in classrooms where core courses are taught (IDEA 2004a, 2004; NCLB, 2002). Coteaching is one delivery system that can potentially meet the conditions of these federal initiatives. A review of the literature, however, revealed little research that informed practice of how implementation of coteaching changed teacher and student behaviors and even less research on how coteaching affected academic achievement at the high school level.

The definition of coteaching has evolved since it was first described by Bauwens, Hourcade, and Friend (1989) in their seminal article:

> (Coteaching is) an educational approach in which general and special educators work in a co-active and coordinated fashion to jointly

> teach heterogeneous groups of students in educationally integrated settings (i.e., general classrooms). In cooperative teaching both general and special education teachers are simultaneously present in the general classroom, maintaining joint responsibilities for specified education instruction that is to occur within that setting (p.18).

Cook and Friend (1995) expanded this definition in a call for consensus on the meaning of coteaching. Their definition included four components: 1) two or more educators; 2) active involvement by both teachers in instructing students; 3) a diverse classroom which includes students with disabilities; and 4) a single, physical space. They elaborated on the ideal coteaching arrangement as one in which teachers share accountability and vary the instructional delivery, depending upon the lessons taught and the student supports that are needed, as well as evaluate the effectiveness of the coteaching process. They provided a caveat, however, stating that best practices and administrative pragmatics are often difficult to reconcile.

Research on Coteaching

Empirical Research

There has been little empirical research that supports coteaching as a feasible alternative to the resource room. One of the earliest studies to employ an experimental design to study the outcomes of collaborative teaching was conducted by Boudah, Schumacher, and Deshler (1997). They measured student engagement and academic outcomes in a study of 6th, 7th, 8th, and 10th graders in 1993-1994. Measuring classroom test and quiz scores, they found that students with disabilities earned lower scores after

teachers were trained with the collaborative teaching model than before. They attributed these results in part to the low student engagement that they observed.

Murawski and Swanson (2001) conducted a meta-analysis of coteaching research and found that only six articles had sufficient quantitative information to code effect sizes. As the effect sizes ranged from 0.08 to 0.95, however, the authors could draw no conclusions as to the efficacy of coteaching as a service delivery model. The results of the meta-analysis are detailed in Table 1. The authors concluded that it was difficult to draw assumptions from these studies given the lack of information on student characteristics, inconsistent reporting of teacher characteristics, the nonstandardized measures of achievement, and the absence of information on treatment fidelity. The dependent measures in the studies varied and included: social outcomes, attitudes toward coteaching, special education referrals, absenteeism, grades, and achievement, although the academic achievement outcome measure was defined in different ways among the six studies. Academic achievement was measured with standardized reading and

mathematics assessments (Klingner, et al., 1998); teacher assigned grades (Lundeen & Lundeen, 1993; Walsh & Snyder, 1993); a chapter test (Rosman, 1994); and curriculum-based measurement (Self, et al., 1991).

Three of the six studies included in Murawski and Swanson's (2001) meta-analysis were conducted at the high school level and are discussed in detail. Lundeen and Lundeen (1993) evaluated a high school collaborative teaching program from West Virginia that included 15 classes in social studies, English, science, and health. The eight general education teachers and five special education teachers who served as coteachers in the program were responsible for the joint planning, instructional delivery, and evaluation for their respective classes. The authors evaluated grades from the first year of the program and compared them to grades obtained from the previous year in the same content areas where students had been instructed in solo taught classrooms with no special education support. Grades were excluded for students who had been in self-contained classes the previous year.

Table 1. Studies from Murawski and Swanson's meta-analysis (2001)

Author **Year of Publication** **Journal**	**Sample Size and** **Description** **Length of Study**	**Reported Results**
Klingner, et al., 1998 *Exceptional Children*	25 LD; 89 ND Grades 3-6; 1 year	Authors conclude that some students need more than in-class support in a cotaught environment
Lundeen & Lundeen, 1993 ERIC document	134 SP; 249 ND Grades 9-12; 1 year	Grades showed no significant change when compared to previous year's grades in same content area
Rosman, 1994 ERIC document	59 total Grades 9-12; 3 weeks	No significant results in achievement scores for special education students or males
Self, 1991 *Exceptional Children*	170 total Grades K-3; 3 years	Positive outcomes in reading; positive reports from teachers
Vaughn, 1998 *Journal of Learning Disabilities*	59 SP; 126 ND Grades 3-6; 1 year	Students with LD fared better socially in the consultation/collaboration model
Walsh; 1993 ERIC document	343 cotaught 363 in general classes Grade 9; 1 semester	Varied results in academics; no significant differences in absenteeism or discipline referrals

Note: LD = Learning Disabilities; SP = Special Education; ND = No Disabilities

Although grades in the collaboratively taught classes improved for nearly half of the students through the first semester, by year's end, only 38.8% of these students had better grades than in the previous year. Almost the same number (33.6%) had poorer grades, and the rest (27.6%) had no change. The authors disclosed that since teachers were responsible for establishing their own evaluation criteria, grades varied significantly among the classes, but that there was no significant difference in the relative performance of students with disabilities and those without.

In a review of data from the student information management system for the 1991 fall semester, Walsh and Snyder (1993) evaluated several criteria, including state minimum competency tests and course grades. Fifteen cotaught classrooms (n = 343) were compared with fifteen solo taught classrooms (n = 363) without special education support. No significant differences were found when all of the grades across the four core subjects were averaged. However, in Language Arts, the grades for students in the cotaught classrooms were significantly lower than those in the solo taught general education classrooms, but scores on the state minimum competency tests were significantly higher for the cotaught group than for the regular group.

Rosman (1994) conducted a three-week study in an inclusive Algebra I class that compared the effects of two different special education roles. In the classroom with Teacher 1, the special educator served as an in-room assistant who provided one-on-one assistance to students, but who had no planning, classroom management, or evaluation responsibilities; in two other classrooms with Teacher 2, the special educator served as the coteacher, with joint accountability for all aspects of the classroom. Achievement

was measured by the total number of points earned from classroom assignments, worksheets, quizzes, and the chapter test from the book, as compared to the points earned from the previous chapter. Achievement scores for the cotaught class were significantly higher than for the class with an in-room assistant. When these scores were disaggregated, however, the author found that the results for special education students and males were not significant. The results for females in both groups were significantly higher than those in the control group, taught solely by Teacher 1.

With Murawski and Swanson's (2001) meta-analysis including just three studies at the high school level, interpretations must be made with caution. First, all three were documents disseminated through the Education Resources Information Center (ERIC) and were not published in refereed journals. While nonsignificant results are most likely to be found in unpublished studies, "studies that are not reviewed by experienced researchers and authors retain a questionable status regarding reliability and/or validity" (Murawski & Swanson, 2001, p. 265). Second, the articles did not contain a uniform measure of academic achievement. If coteaching is implemented to improve the academic outcomes of students with disabilities in the general education setting, the academic growth of students with disabilities should be measured and analyzed to determine the specific variables that contribute to this success. Third, there was no mention of treatment fidelity in any of the studies. Therefore, it is difficult to ascertain what the treatment actually was that was being measured over the course of the study.

Each of the three empirical studies on coteaching at the secondary level described by Murawski and Swanson (2001) had design flaws. Two studies (Lundeen &

Lundeen, 1993; Walsh & Snyder, 1993) did not include a description of how teachers were trained to use coteaching or how teachers coplanned their instruction. One study (Rosman, 1994) described the components of training activities as those cited by Bauwens and Hourcade (1991), and indicated that teachers met at least once per week for planning purposes, but her study was just three weeks in length. None of the three studies contained descriptions of coteaching behaviors.

Mixed Methods Research

In a study conducted by Murawski (2006) on ninth grade English classes, student outcomes and observable instructional activities were measured. Grade averages were measured both before and after the 10-week intervention. Students with and without learning disabilities experienced little change in their grade point averages with the coteaching intervention. Observations of the teachers in these settings, however, did not reveal the differentiated instruction that coteaching, in theory, can offer. Instead, students received instruction for the most part in a large group format, with very little individualizing. Murawski also frequently observed that one teacher in the coteaching setting tended to provide instruction, while the other would be occupied in a non-teaching function (usually grading papers) although she did not disclose if the non-teaching role was assumed exclusively by one teacher, or alternately, by both teachers.

While Murawski (2006) included information on the coteaching training provided, it was a generic description of a three-hour session on the "characteristics and essentials for successful coteaching" (p. 231). She also included a theme which emerged

from teacher interviews, that of "very little coplanning" (p. 242) but did not elaborate on how coplanning had been implemented.

Morocco and Aguilar (2002) conducted a study of a school-wide coteaching model in an urban middle school in the south. They interviewed 11 teachers and four administrators, and conducted 40 observations over a one-year period. Using a case study approach, they developed observational codes from the information gained from the interviews and also compared the frequencies of observed instructional roles of the special education teacher and the general education teacher. The type of assistance provided by the teachers, in most cases, included support in the classroom for concept understanding and for synthesizing information. Although both teachers were adept at teaching, the general education teacher took the instructional lead, while the special education teacher provided assistance. The researchers concluded that while the classroom roles of the coteachers were differentiated, they were also ones of parity. As each teacher taught to her strengths, the authors maintained that shared instructional responsibility–and therefore coteaching–took place in the classroom. Although this is not the perspective of most advocates of coteaching, designed role differentiation should be considered in coteaching research as a type of delivery system. Unfortunately, there was no measure included of student achievement before or after the coteaching intervention in this study.

As the number and types of coteaching components that are described in both empirical and mixed methods studies on coteaching vary widely, it is difficult to make a global statement about the overall efficacy of coteaching. Volonino and Zigmond (2007)

concur with this appraisal and conclude that "…the research base does not provide sufficient support to suggest (coteaching) be either considered or implemented as a best practice" (p. 298). It is therefore important to review qualitative research to determine what role context may play in the successful implementation of coteaching.

Qualitative Research

Weiss and Lloyd (2002) interviewed and observed special education teachers in cotaught and special education classrooms at the secondary level (a middle school and a high school) in a mid-Atlantic school district. Their findings regarding the cotaught classrooms were similar to Murawski's (2006). In the cotaught setting, special education teachers conducted whole group instruction, monitored behavior, and answered questions. In the resource room, however, special education teachers focused on explicit, targeted instruction. It appears that the function of the role of special education teachers varied with the setting in which they taught. In the general education setting, their behaviors mirrored those of the general education teacher, but in the special education setting, their behaviors demonstrated the focus that typifies specialized instruction. The researchers reported that the high school teachers in the study had received training from other teachers within the district, and the middle school teachers had either experience or workshop training in coteaching, but there was no description of the training focus and content. They also reported that there were few opportunities for coplanning sessions and that all teachers expressed the desire for more training and support.

This description of the roles of special education teachers in the context of the cotaught classroom has been seen in other studies. In a synthesis of 32 qualitative studies

on coteaching, 17 of which included secondary students, Scruggs, Mastropieri, and McDuffie (2007) concluded that the model most often observed with coteaching was that of *one teach, one assist* and that the predominant method of instruction was whole class instruction. The role of the special educator was a supportive one in that her job function consisted of assisting students that were in need. Although exceptions were noted, the authors remarked that across all grade levels and content areas, these role functions were consistent.

Rice and Zigmond (2000) compared coteaching models in American and Australian secondary schools. Despite the social and cultural differences between the two countries, the themes that emerged from both countries reflected similar philosophies of coteaching. The status of the special educator in both settings was seen as being subordinate. Her duties consisted of performing clerical tasks such as taking attendance and assuming a helper role while the general educator taught the lesson. Rice and Zigmond conducted interviews and classroom observations of 17 teachers in Australia and Pennsylvania. They found that special educators had to "prove themselves" as capable teachers as a result of their perceived lack of content knowledge One special education teacher in Australia was able to change her status perception by becoming an expert in metacognitive strategy instruction and by conducting training sessions for her colleagues. Her status rose as a result of her school-wide trainings, and she was accepted into other rooms to assist teachers. Without this sort of negotiation, special education teachers were often assigned tasks that reflected their lack of content knowledge. For example, a general educator in an American English coteaching

classroom demonstrated her implicit authority over the classroom by delegating responsibility for the less difficult matching and multiple choice test questions to the special education teacher, while she, herself, assumed responsibility for the essays and projects. Other themes that emerged from Rice and Zigmond's study included the importance of schoolwide support for inclusion, the perceived benefits of coteaching, the importance of personal and professional compatibility, and obstacles to overcome for successful coteaching.

Mastropieri, et al. (2005) conducted a qualitative study of coteaching in the content areas ranging from upper elementary to high school and noted three emergent themes. First, the discrepancy of content knowledge between the general education teacher and the special education teacher appeared to determine their classroom roles. The more content that was understood by the special education teacher, the more parity there was in the teaching roles. Conversely, when special education teachers had little mastery of a content area, they were relegated to the aide or assistant role. Although there was no description of the type of training and administrative support that these teachers received, these findings suggest that in a cotaught situation at the secondary level, content knowledge is perceived as more critical to the achievement of students than strategy instruction.

The second theme described by Mastropieri, et al. (2005) was accountability in the form of high stakes testing. State accountability tests influenced the scope and sequence of content coverage, which, in turn, affected pacing. Because of the pressure that general education teachers felt to cover the curriculum, regardless of the effect that

the pace had on students, special education teachers had less time to accommodate to students' needs. These findings suggest that high stakes testing–not individual needs–drives classroom pacing for all students in the general education setting.

And last, compatibility–both socially and professionally–between the teachers directly affected the climate of the classroom, which affected the inclusive experience of the students. Factors that led to increased student achievement included teaching behaviors "such as structure, clarity, enthusiasm, maximizing student engagement, and motivational strategies" (Mastropieri, et al., 2005, p. 269).

Magiera and Zigmond (2005) observed eight coteaching pairs of teachers in eleven classrooms in four New York middle schools. The researchers compared the instructional experiences in cotaught and solo taught classrooms under routine conditions. They noted that not all of the teachers had been formally trained in coteaching, and that the pairs had limited time to plan together. Both of these criteria have been considered as best practice in the literature on coteaching.

Magiera and Zigmond (2005) observed the classrooms under two conditions: first, when the coteachers were working as a team, and second, when the general education teacher was working without the special education teacher. The authors chose their design to limit the threats to validity due to changes in teachers, classrooms, or content, although they acknowledge that validity issues arose by using the same general education teacher in both comparisons. They developed an observation protocol to record 13 activities, which included students working alone, students working as part of a small group, general education teacher interaction with students, special education

teacher interaction with students, group directions, individual directions, and student participation. Observers collected time-sample data in 10-second intervals during each 45-minute class period.

Magiera and Zigmond (2005) noted two significant differences between the cotaught and solo taught classrooms. First, students received more individual instructional time in classes with coteachers. Most of this one-on-one instructional time was observed when the general education teacher was delivering a whole class lecture, and the special education teacher walked around the room to offer instructional support to individual students. Second, general education teachers interacted less frequently with students with disabilities when the special education teacher was present. Rather than increasing the time that students spent interacting with general education teachers, the cotaught setting served to reduce the time spent with the general education teacher. The authors noted that as there were no measures of student achievement in the study it was difficult to determine the impact of coteaching.

Taken together, these findings suggest that there is a marked difference between the coteaching models that are advocated in the literature and those that are observed in the secondary classroom. In addition, in the general education setting, the focus of instruction is not determined by individual needs, but by external factors that are largely driven by state accountability assessments. Yet, teacher qualities appear to remain an important factor in student engagement and in the overall classroom climate. Effective general and disability-specific teaching skills, enthusiasm, and the ability to create an

accepting, positive classroom atmosphere were described by Mastropieri, et al. (2005) as traits of teachers in successful inclusive classrooms.

Critical Components of Effective Coteaching

Teacher Qualities

Teacher qualities and practices have been cited numerous times in the literature as critical components to effective coteaching, yet quantitative data are rarely presented to support these conclusions (e.g., Brownell, Adams, Sindelar, Waldron & Vanhover, 2006; Gately & Gately, 2001; Murawski & Dieker, 2004; Rice, Drame, Owens, & Frattura, 2007). In one three-year case study involving a collaborative cohort, for instance, researchers observed teachers utilizing the skills that they had acquired from their professional development on collaborative teaching. At the study's conclusion, the teachers were characterized as high adopters, moderate adopters, and low adopters. High adopters were teachers who readily used the new collaborative strategies and were generally found to have the most knowledge regarding their subject, student-centered beliefs regarding instruction and behavior management, and an ability to reflect on their students' learning. The study did not link these teacher behaviors to student achievement, however, and the authors advocated further research to determine how these kinds of collaborative teaching skills affect student achievement (Brownell, et al., 2006).

Assessing the level of use of an innovative classroom change is critical in research studies. If the desired behaviors in a classroom are not observed, there is no assurance that the innovation has taken place (Hall & Hord, 2001). Studies addressing

the effectiveness of coteaching need to include both a description of coteaching behaviors and how those behaviors impact student achievement.

Administrative Support

Murawski and Dieker (2004) advise that involvement of administrators is critical to the success of a coteaching endeavor. Cook and Friend (1995) cite specific commitments that administrators have employed to support a coteaching program. Providing ample time for planning before the coteaching begins, allowing coteachers sufficient planning time together on an ongoing basis, and providing needed resources are essential commitments to successful coteaching programs. Research suggests that teacher commitment is essential to wide change effort, but that without long-term administrator support, such efforts are doomed to failure (Hall & Hord, 2001). Although some studies referenced previously (e.g., Murawski, 2006; Rosman, 1994) contained a description of some of the elements associated with administrative support, none explicitly described this component.

Positive Climate

Dieker (2001) studied coteaching teams at the secondary level that were nominated from three or more sources as outstanding teams. Seven middle school teams and two high school teams from seven different schools participated in her study. The most common practice that she observed was the creation of a positive climate. Although this observation could have been the result of each team choosing to coteach, Dieker cited three additional factors that helped develop the supportive climate. Natural peer support–found in either peer tutoring or cooperative learning groups–was one factor

that contributed to acceptance. Teacher actions and words, which made it clear that high expectations, an accepting climate, and making accommodations so all could gain access to the curriculum were the norm, were cited as the second factor. The articulation of academic and behavioral goals in the communication of expectations was especially helpful in improving social skills. Last, utilizing a continuum of special education services ensured that the learning climate remained positive for all students.

A continuum of services was also cited by Marston (1996) in his survey of special education teachers as preferable to either full inclusion or pull-out models. Although only 19 of the 80 coteachers who responded to the survey taught at the high school level, 71% per cent of the teachers who had experience with both pull-out and inclusive models indicated that combined services was their preferred model. One special education teacher commented, "Each student should get what he or she needs to succeed in school, whether that is pull-out, inclusion, or a mixture of services" (p. 129).

Training

Cook and Friend (1995) pointed out that sharing philosophies and expectations facilitates the coteaching process for teachers who are new to the model. Dieker (2001) also cited the importance of providing time for teachers to share philosophies, roles, and expectations before beginning the coteach process. Teachers in the study who did not have this opportunity to discuss issues pertinent to the new arrangement reported having difficulty assuming their roles.

Common Planning Time

Just as training time is essential to the successful formation of a coteaching team, ongoing joint planning time is essential to its successful continuation. Joint planning time was cited in the preliminary study of this proposal, as well as by other researchers (Cook & Friend, 1995; Dieker, 2001) as a key factor in the collaborative process.

Teacher Role Clarification

Dieker (2001) described many instances in which the special education teacher took on a support role in the classroom, rather than taking on one of parity, yet did not focus on the needs of students with disabilities. This lack of parity was seen in many studies (Mastropieri, et al., 2005; Murawski, 2006; Weiss & Lloyd, 2002). Mastropieri, et al. (2005), citing their observations of a high school World History class, indicated that both general educators and special educators were comfortable in their respective roles of lead and secondary teacher due to the amount of content knowledge each possessed. Whole group instruction based on the textbook was the usual format of the class, with few exceptions. Although there are no measures of outcomes in this study, it is expected that teacher role clarification better enables all students to maximize the support system inherent in the coteach model.

Targeted Interventions for Secondary Students with Learning Disabilities

De La Paz and MacArthur (2003) suggested that in secondary social studies classes that are textbook- and lecture-driven, students with learning disabilities struggle with the requisite reading and writing assignments that result from this style of teaching. Research-based strategies should be included in interventions for students with learning

disabilities if coteaching is to be successful. Anderson, Yilmaz, and Wasburn-Moses (2004) concluded in their literature review of interventions for middle and high school students with learning disabilities that the following interventions were most effective: mnemonic instruction, graphic organizers, guided notes, class wide peer tutoring, coached elaboration, and inquiry teaching. Additional studies suggest that explicit instruction which guides students in the use of such strategies is beneficial for all learners (Covington, 2004).

Steele's (2007) literature review of the research-based interventions for high school students with learning problems resulted in an organized summary of interventions by disability characteristic tailored for the social studies teacher. These include: textbook modifications, such as short web site readings, text guides that include summary information, and highlighted text; writing modifications, such as explicit instruction in essay writing, note taking guidance, and flash card utilization; the use of memory strategies, such as mnemonics; the use of organizational strategies, such as graphic and oral organizers, relating themes to personal experiences and prior knowledge, and breaking down assignments into small steps; and active involvement, such as role plays, group projects, and field trips. Steele adds that the use of these types of accommodations can not only help those with learning disabilities, but can make learning enjoyable for all students.

Interventions that have facilitated positive student academic outcomes in secondary history classes include the use of audio texts (Boyle, et al., 2003) and the use of daily video segments (no longer than twelve minutes) followed by interactive

instruction (Gersten, et al., 2006). Interventions that have shown promise in facilitating academic achievement in world history classes with students with learning disabilities include peer tutoring involving both drill-and-practice and strategy acquisition (Mastropieri & Scruggs, 2001), cognitive organizer instruction using guided outlines and specific computer software (Boon, Burke, Fore, & Hagan-Burke, 2006), and content enhancement routines developed at the University of Kansas Center for Research on Learning (Bulgren, Deshler, & Lenz, 2007). These routines emphasize "active student engagement, construction of knowledge, use of graphics, note taking, student interaction, and strategic cognitive and metacognitive approaches to learning" (p. 123).

In her dissertation study, Zgonc (2007) studied the impact of coteaching on the learning outcomes of 318 students. The study involved seventeen matched pairs of cotaught and non cotaught middle and high school general education social studies teachers in a school district in southeastern United States who were trained in content enhancement routines. Five cotaught teams filled out a rating scale that described their level of teaching, and 23 of the 34 participating teachers were observed to verify the fidelity of the content enhancement routine implementation. When she analyzed state assessment scores, she found no statistical difference between the cotaught and solo taught classrooms. Zgonc concluded that increased teacher preparation, professional development, and the use of specific content enhancement routines may have been mediating factors in student achievement. This study appears to reinforce the idea that student achievement is linked to teachers who are highly qualified in both content and strategy instruction, regardless of the classroom delivery model.

Summary

Studies on coteaching have not been consistent in linking coteaching to student outcomes. Nor have many studies focused on coteaching at the high school level. Although a growing body of research cites best practices for coteaching, no studies to date have explicitly incorporated all of these practices into their designs. Finally, there is little research to inform practice on the specific interplay of teacher behaviors within the context of coteaching that affects student engagement and achievement in the classroom. The purpose of this study is to explore the factors that contribute to the achievement of students with learning disabilities in a high school coteaching class in an optimal environment.

CHAPTER III

METHOD

Setting

To investigate the contextual factors that influenced the academic achievement of students in a cotaught classroom at the high school level, a suburban North Texas high school (referred to hereafter as *North Texas High School*, a pseudonym) was chosen as the setting for this study. North Texas High School had an enrollment of approximately 1400 students during the 2007-2008 school year. The ethnic composition of the students was 64% White, 23% Hispanic, 9% African American, and 4% Asian/Native American. Over one-third (36%) of the students was economically disadvantaged, and slightly over one-half (55%) was in an *at-risk* situation. Some of the criteria that the State of Texas utilized for determining at risk included: having been retained, being two or more years below grade level in reading or mathematics, and being pregnant or a parent.

In addition to these socio-economic factors, the Texas Assessment of Knowledge and Skills (TAKS), the high-stakes test given annually to measure student academic progress, was given to all students at North Texas High. Grade 10 students at North Texas High School achieved a 91% passing rate on the 2007 TAKS accountability test in social studies, and they had achieved a 92% passing rate on the 2006 test. Grade 11 students achieved a 98% passing rate on the social studies TAKS in 2007 and a 96% passing rate in 2006. These scores did not include those from students who took a modified test. Grade 10 students in special education who did not take a modified social

studies TAKS earned a 99% passing rate in 2006; while grade 11 students in special education achieved a 99% passing rate in 2007, which was up from 64% in 2006. There were not enough data on the special education students who took the state accountability social studies test at the tenth grade level in 2006 to record the results (TEA, 2007). The majority of students (78%) at North Texas High School who were labeled as special education students in 2007, however, were either exempt from taking the test or took a modified test. The decision on the type of assessment to use for students in special education was always made by the students' IEP committees, and was generally based on how well a student had performed on benchmark assessments and previous accountability testing, as well as grades, reading levels, and input from teachers and parents.

Due to new construction, the high school population was split for the 2006-2007 year, with the ninth grade students placed at a new campus and the rest of the students at the old campus. This campus split caused many one-time administrative issues to be resolved during the summer before the 2006-2007 year began, including split teaching assignments, the synchronization of bell schedules, and transportation schedules. The days of June and July that were normally more relaxed in the district were filled with meetings to discuss how to tackle each challenge that the split campus presented.

The high school principal resigned at mid-year during the 2006-2007 school year, and the superintendent appointed a principal that had been serving at another school in the district to fill this principal position in January 2007. On the heels of this administrative change, the superintendent accepted a position at a neighboring district in

May of 2007. These successive changes led to unrest in the district, particularly at the high school where this study took place.

Preliminary Study

As recommended by Bogdan and Biklan (2003), preliminary fieldwork took place during the 2006-2007 school year that enabled the researcher to identify emerging areas of interest as well as to explore the most appropriate methods for conducting the study. In the summer of 2006 at the request of the Central Office, the researcher facilitated the formation of a cotaught Algebra I class at the ninth grade campus. During the fall semester of 2006, another cotaught class was formed in World Geography at the request of the ninth grade content mastery teacher. From informal telephone conversations, meetings, and emails from the coteachers and the ninth grade principal, the researcher made the following preliminary observations about these two classes:

Algebra I

The Algebra I class was not termed a success, either by the teachers or the administration. Formed in an attempt to incorporate current research into the curriculum, the class was taught by two veteran teachers highly qualified in their respective fields of mathematics and special education. The teachers liked and respected each other and enjoyed working with each other. However, by November the general education teacher in the pair said that she did not feel comfortable with the cotaught approach, citing the scope of the curriculum, the gaps in skill levels of the students, and the pressure of state accountability testing in the spring as reasons that she wished to remain the sole teacher of record for the classroom.

Both teachers had received minimal training in the coteaching process, although they had been briefed of their responsibilities in a meeting with the high school principal and Central Office administrators prior to the beginning of the school year. Last-minute scheduling changes eliminated joint planning periods, which severely reduced the time available for coplanning. Indeed, the campus schedule required that both teachers travel during the course of the day because of the split campus. In addition, both teachers had extra-curricular activities for which they were responsible, making before- and after-school times unavailable for meetings. The only time that remained for coplanning was during the teachers' abbreviated lunch periods.

The researcher met with both teachers at the beginning of the 2006-2007 school year during one of their lunch periods to discuss the cotaught class for the preliminary study. During the discussion the researcher provided both teachers an overview of the coteaching process, along with examples of some of the delivery methods and typical situations in which to use them. The general education teacher described the manipulatives that she used in the classroom to facilitate learning for all students, but professed that there was little time for incorporating new techniques into her service delivery. The special education teacher described her role in the cotaught classroom as primarily one of an assistant; she circulated and assisted students while the general education teacher taught the class.

The researcher attempted to connect with the teachers via email several times following the meeting, but after viewing the time stamps on their replies (generally after 11:00 p.m.), she decided that while the teachers were dedicated to their students and

were willing to listen to new ideas, they did not have the time to spend on the coteaching training that should have taken place during district in-service training before the semester began. According to the special education teacher, the coteaching process in that classroom quickly devolved into a teacher/aide format. By the end of the first semester, many students with learning disabilities were failing, and the ninth grade principal expressed his frustration with the coteaching process.

World Geography

The World Geography class, in contrast to the Algebra I class, was not planned. Instead, it was created during the first semester of 2006 as a response to the struggles that many students in the class were experiencing. Because it occurred simultaneously with the planned cotaught Algebra I class in the fall of 2006, it was included in the preliminary study.

The special education content mastery teacher noted a pattern of attendance of students from a general education World Geography class in her room during the first period of the day. She met with the teacher of the World Geography class, who was open to new ideas and approaches. As 11 of the 25 students in the classroom had learning disabilities, the general education teacher had found teaching the class challenging. The special education teacher requested a meeting with the ninth grade principal, the general education teacher, and the researcher to discuss the formation of a cotaught class to meet the needs of the students. The class was approved, and after the principal made the requisite schedule changes, the new class was slated to begin at the beginning of the third six-week reporting period of school in the fall of 2006.

The special education teacher, who had reported that she had served in a coteaching capacity in another school district, and who was also highly qualified in World Geography, kept anecdotal notes. The following behaviors were among those that she cited in an email that had been beneficial during the 2006-2007 school year:

> Presenting a united front (what one teacher says goes with the other teacher); both teachers are familiar with the curriculum; teachers are able to share ideas, resources and lesson plans from the past; shared lunch time for planning purposes; teacher flexibility (not getting flustered if interrupted by other teacher for questions/comments); overall willingness to go with the flow; communication—asking, "Is this working?" of each other; personalities meshing—check ego at the door; modifications on the fly—altering assignments when needed based on student performance. (P. Cole, personal communication, January 2007).

The special education teacher also added that the need for a common planning time was an item that "needed work." Her specific duties, which she and the general education teacher negotiated without assistance from administrators, included assisting students during the class lessons in various ways, ensuring students were on the right page, assisting with organization issues, conducting private discussions regarding missing work and questions, pulling students out for re-teaching and small group work, and orally administering exams. She also assisted in the planning process by offering alternative ways to teach lessons (projects in lieu of book work, e.g.) and helping to modify tasks and tests for individual students. The observations made from these two coteaching

classroom experiences from the preliminary study of 2006-2007 are summarized in Table 2.

Table 2. Preliminary study coteaching observations at North Texas High School

Emerging Themes	**Algebra I Observations**	**World Geography Observations**
Teacher training	Minimal, but needed	None, but needed
Teacher placement and compatibility	Administrator-initiated and placed; compatible	Teacher-initiated; compatible
Accountability	General education teacher	General education teacher
Teacher Knowledge	General education teacher highly qualified in content area; special education teacher highly qualified	Both teachers highly qualified in content area; special education teacher highly qualified
Administrator Support	Minimal supports	Minimal supports
Teacher behaviors	One teach/one assist	Joint planning; varied teaching roles
Student achievement	No improvement	Varied results; no pattern discerned

Preliminary Study Summary

Most of the themes that emerged from the preliminary study of 2006-2007 paralleled those contained in the published research on coteaching (need for training, need for teacher compatibility, need for administrator support, e.g.). The lack of student achievement was predictable, considering the small number of best practice coteaching components that were actualized. When classroom grades and state assessment benchmark scores from December 2006 revealed that the efforts of two highly qualified teachers had made little difference in the academic outcomes of students with disabilities, ninth grade administrative support for coteaching waned. As only one section of Algebra and one section of World Geography were involved in coteaching, the numbers of students affected by discontinuing coteaching at the ninth grade center was small. It was determined by campus administration that supports for these students could be provided in the content mastery room, which provided assistance for students with and without disabilities. Central Office personnel were cognizant of the issues, beyond the control of the campus, that could have negatively impacted these results, however, and subsequently endorsed coteaching again at the high school for the 2007-2008 year. To ensure that best practices were followed to the greatest extent possible, the researcher was appointed to design and oversee the implementation of the coteaching model for that year.

Design of the Primary Study

Extant research studies on coteaching, as well as the preliminary study described above, informed the design of this study. To provide an in-depth study of the phenomenon of coteaching in a high school classroom, a case study strategy was

employed (Creswell, 2003). Published studies on coteaching at the secondary level cite the components critical to the success of coteaching. These components include administrative support in the form of scheduled training, common planning times, and ongoing weekly meetings (Cook & Friend, 1995; Murawski & Dieker, 2004); a supportive, positive climate that is observable through teacher actions and words (Dieker, 2001); teacher role clarification (Mastropieri, et al., 2005; Murawski, 2006; Weiss & Lloyd, 2002); certain teacher qualities (e.g., Brownell, et al., 2006); and targeted instructional interventions (e.g., Anderson, Yilmaz, and Wasburn-Moses, 2004).

The purposeful inclusion of these design components contributed to the creation of an optimal setting at a high school in which to study the phenomenon of coteaching. The high school administration coordinated the training to begin during the week of teacher in-service immediately before school. Teacher schedules had been arranged so that the coteachers shared a common planning period, and the researcher had scheduled weekly meetings with the teachers. The high school principal had selected the teachers for this study because of certain qualities that she perceived would facilitate the implementation of coteaching, such as their temperament, their demonstrated flexibility, and their regard for the welfare of their students. The diverse roles of coteachers were examined as the researcher presented training on the various collaborative service delivery options available to coteachers, such as station teaching and team teaching. And finally, targeted instructional interventions, such as the use of graphic organizers, hands-on activities, and the incorporation of technology into the classroom, were presented during the initial training, as well as throughout the study during weekly facilitation

meetings and formal training at the area education service center. All of these activities contributed to the creation of an optimal setting for the coteaching experience.

A variety of data collection methods was employed to address design flaws contained in previously published studies on coteaching (e.g., Brownell, et al., 2006; Cook & Friend, 1995; Dieker, 2001; Mastropieri, et al., 2005; Murawski, 2006). These elements included classroom observations, which incorporated a description of student behaviors, teacher behaviors and the instructional strategies utilized; a description of students, teachers, and the high school principal; and pre- and post-testing of students. These descriptive and quantitative elements were purposefully included to determine what, if any, achievement occurred, and under what kinds of conditions.

Training on coteaching was scheduled to take place during the summer of 2007 during the district's in-service training, and the cotaught classrooms were observed during the first semester (August to December) of the 2007-2008 academic year. Data collection covered fifteen weeks of instruction but excluded weeks in which holidays and semester tests fell.

Role of the Researcher

The question of objectivity arises when data is collected through a human instrument, and it is important to know the biases that the researcher brings to the study (Denzin & Lincoln, 2000). The researcher had been employed by the district for three years in the special education department prior to the semester in which the study took place and had been requested by the Central Office to conduct the study to determine the efficacy of coteaching at the high school. In addition, she was completing her terminal

degree in Educational Psychology at a major Texas university. Prior to these activities, she had served as a school counselor and as a classroom teacher in another school district. The researcher thus brought biases to the study as an employee of the North Texas school district, as an advocate for students with disabilities, as an educator with experience in the general education setting, and as a graduate student conducting research in the field of learning disabilities. These biases created a specific lens through which she observed students and teachers. In addition, the researcher had already established relationships with high school administrators and special education teachers, which also brought bias into the study. Central Office personnel, however, believed that the outcome of the study would be enhanced because of the nature of these relationships, which they believed were ones based on trust and mutual respect. The researcher had no decision-making authority at the campus level, as all administrative decisions regarding scheduling and assignment of personnel remained under the sole jurisdiction of the high school principal. As a result, the researcher had minimal conflicts of interest in serving both as researcher and employee of the school district.

Establishing Trustworthiness

Lincoln and Guba (1985) cite four major procedures to establish trustworthiness in qualitative research: credibility, transferability, dependability, and confirmability. The authors compare these concepts to those found in conventional research: internal validity, external validity, reliability, and objectivity, respectively.

Credibility

Credibility (internal validity) is established by utilizing techniques that increase the likelihood of credible results. The length of time spent in the field, the observation of a sufficient number of events to differentiate the relevant from the irrelevant, and the triangulation of data all contribute to the credibility of a qualitative study (Lincoln & Guba, 1985). Credibility was achieved through the use of prolonged engagement, persistent observation, triangulation, a reflexive journal, and peer debriefing. Although the formal study took place over a one-semester time interval, the researcher had been employed by North Texas ISD for the previous three years and had moved her office to the North Texas High School during the semester that the study took place in order to absorb the everyday feel of the school. She had known the special education teachers and the principal since her arrival at the district, and these relationships helped to establish the prolonged engagement element of the study.

The researcher made 40 observations of the cotaught classrooms during the course of the semester. In addition, she met with the coteachers on a weekly basis immediately after they had been engaged in coteaching, thus was able to establish a depth of understanding of the coteaching process, both through observation and through discussions with the teachers that at times served as debriefing exercises.

Triangulation took place by utilizing the observations, interviews, and assessment information to verify the results of the research. A second interviewer who was not associated with North Texas ISD provided an additional lens through which the views of the participants could be viewed.

The researcher kept a reflexive journal, in which she recorded the day-to-day thoughts and feelings regarding the research, current events that affected the lens through which she recorded her observations, and preliminary inferences regarding the data collection process. This journal allowed the researcher to provide the outside interviewer additional context, as well as to ensure the subjectivity checks that are essential in developing, evolving research. Member checking, or peer debriefing, was achieved by having the coteachers review the reports and interpretations of the researcher. After this review, they had the opportunity to clarify their viewpoints by providing written comments and submitting them to the researcher.

Transferability

Transferability (external validity) enables the reader to imagine the study occurring in another place or time. That is, the description of the participants and context is so thick that the reader could reasonably infer that a transfer to an imagined setting is possible (Lincoln & Guba, 1985). Transferability was achieved through the provision of both descriptive and demographic details of the students and teachers at North Texas High School, as well as a description of the practices and procedures of the school, which enabled the reader to imagine the participants in another setting. She accomplished this by including generous amounts of participant discourse, illustrating detailed academic strengths and weaknesses of the students, and conveying the customs and routines of the special education department at North Texas High School, as they pertained to students with learning disabilities.

Dependability

Lincoln and Guba (1985) maintain that an inquiry audit—an examination of both the research process and product—can be used to determine that the study was conducted in a reliable manner, with results that are supported by the data. The dependability (reliability) component of this study was established by sharing documentation of the data collection process with the committee chair. Through emails and phone conversations, she shared segments of interviews, observations and assessment data, as well as preliminary and intermediate analyses, diagrams, and drafts of this dissertation throughout the data collection and analysis process. Although the committee chair did not verify the authenticity of the data directly with participants and school officials, she was able to triangulate the sources of data that were presented to her to verify that it had been collected.

Confirmability

The final component that Lincoln and Guba (1985) cite as necessary for trustworthiness is that of confirmability (objectivity). Confirmability provides assurance that findings are grounded in the data and not in a personal analysis and may be established, as in dependability, with an audit of the process and materials used in the research. The resultant audit trail serves to establish confirmability. The researcher established an audit trail by keeping raw data, a reflexive journal, notes, and information regarding the preliminary development of the interpretations with overt and transparent methods.

All observation data recorded with the Stallings Observation System (SOS) was kept in a two inch binder. As the researcher was the sole observer, there was no need for determining inter-rater reliability, which strengthened the study. Interviews were recorded digitally and transcribed, with consent forms, transcripts, and participant signatures regarding transcript credibility placed into folders that were labeled by participant. Quotations from these interviews were written as spoken, with no corrections for grammar. Other data, such as assessment results, student IEPs, attendance information, and the reflexive journal were maintained in appropriately labeled files. In addition, the researcher kept a calendar that contained dates of interviews, observations, and meetings pertaining to the study. This information, along with the recorders used by the researcher and the outside interviewer, was kept in locked offices, and constituted an inquiry audit trail, and which served as one element of the confirmability component of the study.

Another component of the audit trail was the development of a notation system. Pseudonyms were used for those involved in the study. The two coteachers were referred to as Coteacher 1, for the general education teacher, and Coteacher 2, for the special education teacher. For interviews, the notation began with the first letter of the pseudonym, or C1 or C2 for the two coteachers, followed by the letter I for interview, followed by the page of the transcript where the quotation could be found. For example, the notation C1-I-7, referred to data from page seven of the transcript from the interview with Coteacher 1.

References to data from the reflexive journal were coded as RJ, followed by the week of the study, followed by the page on which the data was found. For instance, RJ-7-4 referred to data in the reflexive journal that was recorded on the fourth page of the entries in week seven of the journal. References to data from weekly facilitation meetings were coded as FM, followed by the date in month/day format, followed by the page of transcript where it was located. The notation FM-10-1-2 referred to data contained on the second page of the transcript from the October 1 facilitation meeting. Other notations included A for artifact, AR for attendance record, DR for discipline record, HB for student handbook, GS for grade sheet, IEP for Individual Education Program, MC for member check, O for observation sheet, P for principal, S for schedule, and Tr for transcript. This notation system is referenced in the appendix.

Participants

Descriptive data were collected from participants in a cotaught setting that was designed to reflect best practices described in the research literature. Key stakeholders—including students, teachers, and the high school principal—were sources of data collected. One tenth-grade and four eleventh-grade students with learning disabilities who were enrolled in two sections of a cotaught U.S. History class participated in this study. The students selected were a purposeful sample based on having a learning disability with a reading level that was two or more levels below enrolled grade level.

Two teachers were involved in the study: one general education teacher and one special education teacher. Both teachers were highly qualified in history, having passed state certification examinations in the subject, and the special education teacher was

highly qualified in special education, as well. Both teachers were hand picked by the high school principal for a coteaching assignment, based on her assessment of the teachers' strengths. The coteachers were referred to as Coteacher 1 (general educator) and Coteacher 2 (special educator) to protect the teachers' identities.

The high school principal made all administrative decisions pertaining to the study. The principal was assigned at mid-year to the high school principal position during the 2006-2007 school year after the former principal resigned. Prior to taking this position, she had served as an elementary school principal, but had also served as a high school principal prior to this elementary school position. All of her experience (over 30 years) as an educator had been in the North Texas School District, so she was familiar with families and students, as well as district policies and procedures, despite her recent assignment to the principal position.

Procedure

Approval was obtained from the selected students and parents, district and campus administrators, and the University's Institutional Review Board to conduct this study. The high school principal had already selected the class in which to begin the coteaching process for 2007-2008: U. S. History. The two coteachers of this class, along with the high school principal, received training on the nature of coteaching and types of collaborative delivery models. This training was scheduled to take place during the week of in-service which took place the week before classes began. Due to the illness and hospitalization of the special education teacher during this week, however, the training was postponed until she returned. Four condensed training sessions were conducted once

per week during the first month of school. The principal participated during the last session, which served as a review of the previous three sessions as well as an introduction to the roles and responsibilities of administrators.

Training

Bauwens and Hourcade (1991) developed a model to facilitate coteacher training which included five components: philosophy, theory, procedures, instruction, and evaluation. These components were also included as part of a training program provided by Education Service Center IV (ESC IV) in Houston, Texas. The researcher selected this program to use as the training component for four reasons: 1) it provided a succinct rationale for implementing coteaching, 2) it provided examples of when and how to use the many delivery models in coteaching, 3) it provided a flexible format that contained alternative presentation models, such as graphic organizers, and 4) it provided activities that encouraged active participation of audience members. The program contained four modules that addressed the topics of inclusion, collaborative delivery, collaborative teaming, and administrative supports.

The first module of the training, inclusion, contained an introduction to the philosophy of inclusion and the social and political context in which the philosophy evolved. Discussion revolved around the belief systems of the teachers and provided the context and rationale for coteaching. Cook and Friend (1995) and Dieker (2001) cited the importance of sharing philosophies, teacher roles, and expectations in coteacher training. To highlight these concepts, the module included situational activities that identified several typical classroom scenarios. It requested participants to synthesize the

information they had acquired about coteaching to identify the decisions coteachers could make to accommodate all students in the classroom. These exercises generated discussions regarding the strengths that each teacher could bring to the students, as well as the particular delivery systems that could be utilized to best meet students' needs in actual situations.

The second and third modules included information on collaborative delivery and collaborative teaming and described such delivery methods as: one teach, one observe; one teach, one drift; station teaching; parallel teaching; alternative teaching; and team teaching. In the one teach, one observe or one teach, one drift delivery methods, one teacher is responsible for delivering a lesson, while the other teacher either records the actions and behaviors of the students, or actively assists students. Although this method can play a valuable role in collecting data, because it does not require much planning, it can quickly turn the observing or drifting teacher to an aide if overused. During training, the researcher suggested that this model would be appropriate for the beginning of the year, or at any time when student behaviors needed to be analyzed, when one teacher could purposefully observe students for specific behaviors while the other taught. Armed with this data, the coteachers could then choose other delivery methods to better accommodate the individual needs of their students.

Parallel teaching requires both teachers to jointly plan and deliver the same content to half the class, while in station teaching, the teachers divide tasks and require students to rotate to each teacher. While parallel teaching is helpful in lowering the teacher-student ratio for targeted review and drill, station teaching is beneficial for

project-based lessons. Alternative teaching involves teaching in a large-group, small-group format. This delivery system can be useful in preteaching or remediation situations, but teachers must be careful to change the composition of the groups to avoid stigmatizing the students. Team teaching calls for both teachers to deliver the same content at the same time, but in different ways. One teacher may lecture while the other teacher writes, or one teacher may explain, while the other teacher models the steps or thinks aloud. This delivery method calls for extensive planning, but can serve as an excellent way to model different ways of learning and understanding. During training, the researcher did not encourage the teachers to use any one, specific delivery method at the expense of another. Rather, she emphasized the importance of assessing the goal of each lesson and how best to utilize the strengths of the teachers and the attributes of each delivery method to best meet the needs of the individual students in the classroom.

The collaborative teaming module used at North Texas High School addressed the concepts of team formation, barriers to successful coteaching, and the collaborative problem solving process. Discussion for these two modules revolved around the instructional and procedural belief systems of the teachers and the how these would evolve when teachers moved from a solo teaching to a coteaching role. In describing the factors that led to the successful academic outcomes of four inclusive high schools, Wallace, et al. (2002) emphasized the importance of training on "collaboration, teaming, communication, modifying curriculum, managing behavior, and instructional strategies" (p. 378). Villa , et al. (2005) described administrative support, ongoing professional development, collaboration and communication as part of the best practices cited by

teachers who had successfully incorporated inclusion into their classrooms. As collaboration was the foundation of coteaching, the researcher emphasized the importance of open and honest communication, as well as team planning that would outline the roles and responsibilities of each teacher for both teaching and administrative tasks.

The last module, administrative support, addressed the different ways in which support could be provided to coteachers, as well as suggestions for evaluation procedures. Numerous studies of coteaching at the secondary level (e.g., Cook & Friend, 1995; Murawski & Dieker, 2004) have cited the importance of administrative support to successful coteaching outcomes and the necessity of making the components of teacher evaluation explicit in a non-traditional classroom. The principal of North Texas High School joined the teachers during this training module to support the coteaching effort and to answer any questions that either the researcher or the coteachers had regarding administrative issues.

This training program incorporated a number of best practices previously cited in the literature as having been found to be effective. The training was interactive, with informational sessions interspersed with opportunities for discussion and questions by the teachers in keeping with the optimal learning environment for adults as described by Knowles (1984). The researcher modeled the use of research-based strategies for students with learning disabilities, such as advanced organizers, mnemonics, and structured lessons (Steele, 2007). In addition, teachers completed a rating scale before the training began. These rating scales were included in the training program provided

by ESC IV in Houston and served as a springboard from which to begin teacher training. Rather than using a diagnostic scale to score the teachers, the researcher used the rating scales to address the perceptions and concerns of the teachers during training, in keeping with the best practices of coteacher training (Cook & Friend, 2005; Dieker, 2001).

Teacher Selection

The high school principal selected the teachers that participated in the coteaching study. This selection was based on the needs of the high school, combined with the personal characteristics of the teachers as perceived by the high school principal. She asked each teacher if they would like to participate in a coteaching project, and proceeded with the master schedule only when she received an affirmative response from both. The teachers were assured that they were not obligated to participate in this study, and this assurance was repeated by the researcher as part of the consent process.

Student Selection

The researcher, as it was part of her professional role, provided information to high school administrators as to the optimum student composition for a cotaught class (no more than one-fourth or one-third of the class should be classified as having a learning disability, e.g.), but she did not have control over the scheduling process. Students were assigned to classes by the school's computerized scheduling system, with adjustments made by high school personnel to meet both student and administrative needs. Selection for placement in the cotaught classes was based on students' assessed levels of reading, the content of their IEPs, and school schedule constraints, including

class size limitations. While the researcher provided input, the final determination regarding classroom composition remained with the high school administrators.

The administration developed two sections of the cotaught U.S. History class. Once students were scheduled into these sections, the researcher reviewed their demographic data with the district's computerized data retrieval system. Students with disabilities were identified, and the files containing their disability information were retrieved from the district's special programs office. From the information in these files, students with learning disabilities were identified. There were five students identified with a learning disability in one section (Period Three); there were four students identified with a learning disability in another (Period Two), including one student with a dual emotional disability/learning disability label. The researcher selected the section with five students with learning disabilities as the one with which to conduct her study.

The researcher then reviewed the IEPs and previous testing information for each student with learning disabilities in Period Three. Criteria for participation in this study included a tested reading level at two or more grade levels below the enrolled grade level. All five students with learning disabilities met these criteria, and letters were sent to parents explaining the research and requesting permission to interview their students regarding the cotaught classroom. Once permission from parents was obtained, assent from students was obtained. Of the five students with learning disabilities who began the semester in Period Three, one transferred to a different section as a result of a schedule change, and two transferred out of the district. Of the two students who were left, one chose not to participate in the interview process.

The researcher then expanded the study to include Period Two, and reviewed the IEPs and previous testing information for each student with learning disabilities in that section. All four students met the criteria of having a tested reading level two or more grade levels below their enrolled grade level. The student who had a dual *emotional disability/learning disability* diagnosis was included in the study due to her reading level, although her dual diagnosis suggested additional barriers to her learning which the other students did not possess. Permission to interview these students was obtained from parents and students, in the same manner as in Period Three.

Ongoing Support

Hall and Hord (2001) outlined what they term *stages of concern* that teachers exhibit when school change is implemented. These stages begin with an awareness of the change, progress through the management of it, and, in successful innovations, result in teachers' contributing ideas to the innovation to enhance its use. Murawski and Dieker (2004) describe the concerns of teachers in secondary schools when they are faced with changes at the beginning of school year. In response to last-minute scheduling issues, teachers are sometimes presented with classes that are too full and with additional coteaching responsibilities that they were unaware of when school let out for the summer. Without time for reflection and processing, this type of change can result in resistance and failed implementation. The researchers also advised that ongoing evaluation of the coteaching process is essential, and to address the inevitable areas of concern—such as classroom management, grading policies, and instructional practices—as they emerge. To address these concerns, the researcher held weekly meetings with the

teachers throughout the study. These meetings took place in the general education teacher's classroom during the coteachers' conference periods, which occurred immediately before their lunch period. They agreed to meet during this extended period once per week, and the researcher arranged a catered luncheon each week to enhance the feeling of camaraderie and comfort. The meetings were generally an hour, but on a few occasions, they ran longer.

Concerns were documented through field notes that the researcher made after each meeting. In addition to addressing teachers' individual concerns, the meetings provided a venue to address specific topics, such as determining student needs, behavior management, and classroom parity, that have been cited as areas of potential concern in the literature (Dieker, 2001; Mastropieri, et al., 2005).

Data Collection

The researcher collected a variety of data to obtain information from many perspectives on the instructional components of the classroom and how effective they were in contributing to the academic achievement of students with learning disabilities. Previously published studies on coteaching did not always address academic achievement (e.g., Brownell, et al., 2006; Cook & Friend, 1995; Dieker, 2001; Mastropieri, et al., 2005; Murawski, 2006), and the adoption of this collection method addressed this design weakness. Pre- and post-tests were administered to the students in the cotaught classroom. The coteachers selected and administered a 50-question multiple choice test from the U.S. History textbook publisher's test bank during the first week of class after schedule changes had been completed. They administered a 65-question multiple choice

test from the same source as the post-test and the semester exam. Between the two tests, the researcher identified twenty-five questions that were exactly matched, and these were used to measure the academic growth of the students in the classroom. The limitation posed by test familiarity was reduced by the 15-week interval between test administrations.

The researcher conducted semi-structured interviews with five students with learning disabilities from the two sections of the cotaught U.S. History classroom at North Texas High School to determine their perceptions regarding their abilities and disabilities, their perceptions of the supports that they needed to facilitate their learning, and whether or not they were receiving these supports. These questions were:

1. Learning disabilities appear on a continuum from mild to severe. On a scale of 1–10, with 1 being very mild, and 10 being the most severe, how would you rate your learning disability?

2. Describe the accommodations and/or supports that you use in the classroom. What are the ones that you believe help you the most?

3. If you could choose between a cotaught class like the one you're in, and a solo taught class like your other ones for any class, which would you choose?

4. How would you describe your strengths?

5. What things can a teacher do to best support you/help you learn?

Published research has suggested that administrative support is essential to the success of coteaching (Cook & Friend, 1995; Murawski & Dieker, 2004). The principal, as the campus instructional leader, was interviewed to explore her perceptions of

coteaching and how they compared to the perceptions described in the literature. In addition, she was asked about the nature of the support she provided to the coteaching endeavor, and her awareness of any academic improvements that may have resulted from coteaching. These questions were:

1. The research tells us that in order to have a successful coteaching classroom, the teachers need administrative support. In what ways will you/have you provided that support?

2. What changes have you seen in the coteaching classroom to date? How have these changes affected student achievement?

3. What do you see as the greatest benefit of coteaching? The biggest drawback? Do the benefits outweigh the drawbacks? Why or why not?

4. Coteaching has been described in the research as beneficial to all students, but especially to those with learning disabilities. How would you elaborate on that assessment?

5. Would you recommend the continuation of coteaching for next year?

The University's Institutional Review Board requested that an outside researcher conduct interviews with campus teachers to eliminate any perception of administrative influence, as the researcher had been requested by the Central Office to conduct the research effort. Although she had not included an outside interviewer as part of the original design, the researcher turned to Yin's (2003) description of desirable traits and skills of case study researchers to view the situation through a transparent lens. "An investigator should be adaptive and flexible, so that newly encountered situations can be

seen as opportunities, not threats" (p. 59). Hiring an outside researcher to conduct the interviews with the teachers provided an additional perspective that contributed to the credibility of the study by providing a triangulation of investigators (Lincoln & Guba, 1985).

The outside researcher conducted interviews with the two coteachers and with three of the students' current and former teachers that were employed at North Texas High School during the study. She also provided her field notes, which included her personal perceptions, as well as descriptions of the participants.

Questions of the coteachers to determine their attitudes regarding coteaching were:

1. Tell me how you reacted when you found out that you would be coteaching this year. Did any of those feelings change after you had coteaching training? In what ways?

2. In what ways will you/have you incorporated ideas from your coteaching training into your teaching this year?

3. Are there any aspects of coteaching that you could use as a solo teacher in a classroom? Describe them.

4. In what ways has coteaching helped students achieve?

5. In what ways has coteaching been a hindrance to student achievement?

6. If you could change anything about the coteaching arrangement that you have, what would it be, and what would the change accomplish?

These questions were designed to determine the effect that the coteaching training had on the coteachers, the aspects of coteaching they perceived as beneficial, and the aspects they perceived as needing change. Research has suggested that training that includes time for new coteachers to share philosophies, roles, and expectations helps to facilitate the coteaching process (Cook and Friend, 1995; Dieker, 2001).

Questions of the current and former teachers of the students with learning disabilities were:

1. What are the strengths that you saw in (name of student)?

2. Learning disabilities appear on a continuum form mild to severe. On a scale of 1–10, with 1 being very mild, and 10 being the most severe, how would you rate (name of student)'s learning disability?

3. Did (name of student) use accommodations and/or supports in the classroom? Describe them. What supports most assisted this student?

4. How would you describe your teaching style?

5. If you were to list five of your greatest teaching qualities, what would they be?

These questions were chosen to compare and contrast solo teachers' perceptions of students' strengths and needs with those of coteachers and the students, themselves. They also were designed to gain insight into the solo teachers' perceptions of their own styles and strengths to match them with student-reported needs.

Interviews were recorded both digitally and by hand, depending upon the preferences of those interviewed. Recordings were transcribed and all notes were typed by the researcher using a word processor.

Other data gathered for triangulation included observations of the cotaught classroom and reviews of educational records from the current and previous years. The researcher used the SOS to record teacher behaviors, interactions between teachers and students, and the groupings of teachers and students. Developed in 1969, the SOS observation system has been used in all grade levels for both research and evaluation purposes. The Snapshot and the Five Minute Interaction instruments are used together during an observation, and the physical aspects of the classroom, as well as the adult and student participants in it, are described in the Identification and Classroom Information section. The researcher chose this system to provide a quantification of behavioral changes that occurred during the semester. This quantification, combined with researcher notes and teacher interviews, provided a triangulation of the data.

The Snapshot, as its name implies, provides a view of the classroom for a brief period of time. It records the whereabouts and interactions of each person in the classroom, based on nine activities which could be occurring: silent reading, oral reading, making assignments (where an adult is providing procedural information to a student or group of students regarding an activity), instruction, discussion, drill and practice, written assignments, kinesthetic activities, and projects (hands-on activities resulting in a product). Added to this grid is the recording of the kinds of materials or groupings in use by each person in the room: books, paper and pen, computer/calculator, manipulatives, multimedia equipment, visual aids, and cooperative learning (when there is a final project involved). It is coded at equal intervals in one classroom period.

In the Five Minute Interaction section of the observation, statements of teachers and students are recorded and coded, with the purpose being to record the types of interactions, the levels of questions and types of feedback that take place in the classroom. Interaction codes are categorized by the givers and receivers of the interactions (teacher, student, visitor, small group, large group, e.g.); the type of interactions (command, direct question, open-ended question, response, instruction, correction, acknowledgement, e.g.); and the kinds of content or effects that the interaction has (academic, behavior, brainstorming, positive, negative, e.g.). In addition to these four main categories, the observer is able to record the sex and race of the givers and receivers of the interactions.

The observer begins each observation by recording the characteristics of the classroom in the Identification and Classroom Information section of the SOS. From there, the observer codes the Classroom Snapshot, followed by the Five Minute Interaction frames. Each set of observations is spaced equally throughout the classroom period. Inter-rater reliability with the SOS has been established as 70% or higher with each of the codes (Knight, 2001). The researcher obtained training on the SOS during the summer of 2007 through Texas A&M University.

Observations of the cotaught classes were made solely by the researcher a minimum of once per week in which classes were in session and after student schedules were finalized during the fall semester of 2007, from September 4 through December 19. Because the SOS was designed to provide detailed reports on one teacher, the observations from that system focused on the general education teacher behaviors for the

first week of observations, with hand-written notes supplementing the special education teacher behaviors. The researcher then included the observations of Coteacher 2 during the second week of data collection, and stored this information as a second teaching adult in the SOS.

Grade reports, standardized testing, absenteeism information, and discipline records were also reviewed and recorded in order to obtain multiple measures of academic achievement and supplementary background information for the targeted students.

Analysis

Evaluation of Data

One measurement issue discussed in the research literature is the use of teacher-assigned grades as achievement measures. Grades are subjective in nature, and interpretations of outcomes should be made with caution when grades are the sole criterion used in a study. Walsh and Snyder (2003) included several measures, including results of a minimum competency test. Although an objective measure, a standardized test is not an accurate measure of the learning that takes place in a specific content area in a semester-long study. To address the issue of academic growth, this study employed a pre-test, post-test design to ensure the validity of the outcome measure.

As a composite score of academic growth for each student, the post-test score was subtracted from the pre-test score. Descriptive statistics were used to describe the data produced from the pre- and post-test results. Because of the small sample size (n = 5), there was not enough statistical power to conduct inferential statistical tests. In

addition, the post-test was given in a different environment with additional supports from the classroom teacher that were not given for the pre-test, making a comparison of these two scores invalid. However, the results of the pre- and post-test scores of each student with learning disabilities were provided relative to the mean of the cotaught class to supplement the data from interviews and observations.

Similarly, scores for daily grades, classroom tests, and six-week tests were totaled and simple means computed for each student by category (daily grades, classroom tests, e.g.). The scores of each student with learning disabilities were provided relative to the mean of the cotaught classes to supplement the data from interviews and observations. Grade point averages, absences, and discipline referrals for the student participants were retrieved from the student data system for the years they were in high school. They were coded numerically, recorded on a data sheet by name and used by the researcher to supplement data from interviews and observations.

To measure the change in student and teacher involvement in tasks and activities, the percentage of time of involvement in each activity reported in the SOS was recorded at each observation in each classroom, inserted into a Microsoft Excel spreadsheet, and graphed over the course of the semester. After each observation, the percentage of time of student involvement with such on-task activities as reading silently, written assignments, reading aloud, receiving instruction, discussion, and receiving assignments was computed for the classroom aggregate. The percentage of time of student involvement with such off-task behaviors as social interaction, noninvolvement, and

disciplinary actions was also computed after each observation. These points were then graphed using Microsoft Excel.

The same type of analysis and graphing was conducted for the coteachers' involvement with tasks. During each classroom observation, the percentage of time that each of the coteachers spent on such behaviors as instruction, discussion, classroom management, or making assignments was recorded and graphed to identify changes in teacher behavior over the semester. An example is provided in Table 3.

Table 3. Student involvement in tasks

Students involved in:	**% of time spent in activity**
Reading silently	0.00%
Written assignments	22.86%
Reading aloud	2.38%
Receiving instruction/Explanations	50.0%
Discussion	10.25%
Social interacting	0.00%
Student uninvolved	2.38%
Discipline	0.00%
Receiving assignments	12.13.00%

The researcher originally planned to use the data that SOS provided to analyze the behaviors of both teachers over the semester. Instead, the data from the SOS system was graphed, as only one set of data can be extracted from SOS. That is, SOS has the capacity to record the actions of more than one adult in a classroom, but it will produce the output of behaviors for only one adult.

The researcher also planned to conduct an Allison mean plus trend analysis of the teacher behaviors, but was unable to do so as a) a stable baseline could not be established, and b) the severe bounce in the data obtained from the intervention data points precluded the calculation of an accurate trend line. A mean plus trend analysis would have provided an effect size for the difference of performance between the baseline and the intervention period. As there was not sufficient data to establish an adequate baseline, and as the intervention data were so widely dispersed, such an analysis would have been meaningless. The researcher decided to include the graphed data only as a supplement to the analysis of the qualitative data.

The preliminary analysis of the interviews was conducted by highlighting the sections of meeting and interview transcripts that related to the research questions and noting their potential categories in the margins. These sections were then placed onto 4 x 6 index cards and coded by source. The cards were then categorized according to the significant data found in them, in keeping with grounded theory construction. Categories were analyzed using the constant comparison method to clarify their meaning. Emergent themes were then discussed as they pertained to the construct of coteaching within the larger construct of learning disabilities.

CHAPTER IV

RESULTS

The purpose of this study was to explore the instructional factors that contributed to the achievement of students with learning disabilities in a cotaught class in a high school setting. In this case study, several types of data were collected in order to investigate the following questions:

1) What is the nature of coteaching behaviors in a high school setting?

2) What are the perceptions of key stakeholders (teachers, students with learning disabilities, principals) in a cotaught setting?

3) Over a semester of coteaching, do teachers' instructional behaviors change?

4) Over a semester in a cotaught class, do behaviors of students with learning disabilities change?

5) Over a semester in a cotaught class, do measures of achievement from students with learning disabilities change?

Teacher Background

For this study, semi-structured interviews with five teachers and one principal were recorded and transcribed, yielding 66 pages of single-spaced, typed transcripts. Two coteachers in the group were the primary focus for this study. Coteacher 1 taught history classes at the high school level in the general education setting. Coteacher 2 had been a high school special education resource teacher of English and history in the years before the study. During the school year in which the study took place, however, she

taught general education geography classes and served as the special education teacher in the cotaught classrooms.

Three additional teachers were included in the study: a special education mathematics teacher, John; a general education English teacher, Donna; and a technology systems teacher, Robert. Each of these teachers had taught at least one of the five students identified with learning disabilities targeted in this study. Although requests for participation in the study had been sent to all of the teachers of the identified students with learning disabilities, only these three had responded. The perspectives and observations of these three teachers provided an enriched understanding of the abilities and challenges of the students with learning disabilities.

All five of the teachers were white, with ages ranging from the mid-20s to the early 60s. Both Coteacher 2 and Robert, the technology systems teacher, had begun their teaching careers later in life. Coteacher 2 raised her children before attending school to obtain her teaching certificates. Robert retired as a state police trooper before beginning teaching as his second career. Table 4 contains the demographic information of the teachers in this study.

Table 4. Teacher demographics

Teacher	Gender	Years of Teaching	Years of Teaching in North Texas ISD	Teacher Certification
Coteacher 1	Female	3	3	Secondary History
Coteacher 2	Female	12	12	Secondary English Secondary History Secondary Generic Special Education
Donna	Female	21	10	Secondary English Secondary Health & P.E. Secondary English as a Second Language
Robert	Male	9	2	Secondary Industrial Arts
John	Male	12	12	All Level P.E. Secondary Health Generic Special Education: All level Elementary self-contained

Student Background

Four of the students in the study were in the 11th grade, and one was in the 10th grade. Each was diagnosed with a learning disability. One of the students, Natalie, was diagnosed as having both a learning disability and emotional disturbance, but she was included in the study as her reading level met the criteria of the study. The dual diagnosis suggested additional barriers to her learning which the other students did not possess, however. Only two of the five students interviewed assented to be audio recorded. A total of approximately two hours of recordings yielded 13 pages of single-spaced, typed transcripts. For the three interviews that were not recorded, the interviewer took brief notes as the students responded to her questions. She transcribed the notes immediately following the interviews. These interviews yielded four pages of single-spaced transcripts.

To be included in the study, students needed to have a reading level that was at least two grade levels below their enrolled grade level. A review of student folders by the researcher revealed that only one of the students had had formal achievement testing conducted within the past three years, thus their IEPs recorded their current reading level from a number of other sources, the most common being the most recent state assessment. The most recent assessment for three of the five students was the State-Developed Alternative Assessment (SDAA), which was used to measure the annual progress of some students who received special education services. When students' IEP teams considered the Texas Assessment of Knowledge and Skills (TAKS) too difficult or otherwise inappropriate, they considered the SDAA for use as an accountability

measure. Although there were other alternatives for providing for accountability, the SDAA was generally the assessment used for students with learning disabilities. It was the responsibility of the student's IEP team to determine the appropriate levels of assessment on the SDAA for the student. Grade level was determined by the student's instructional level, while the tested achievement level was determined by the skill level that the student had mastered. Level I indicated minimal skills, Level II indicated moderate skills, and Level III indicated sufficient skills for mastery. For example, if the IEP team set the level of achievement at 9-II, the student would be expected to pass the SDAA at the 9th grade instructional level, with a moderate skill level. If students met the IEP team's expectations, district records then reflected that they had passed the state assessment. If a student did not meet the IEP team's expectations, the records then reflected a failure. The IEP team took into consideration other pieces of data to set the appropriate assessment levels, including recent class work, past testing results, and anecdotal information from parents, teachers, and administrators.

Using solely the SDAA, it was difficult to determine the exact reading level of a student. If a student failed the state assessment, the results suggested that the reading level set by the IEP team was too high. However, if the student passed, the results only reported that the student was able to perform at one of the mastery levels within the

tested instructional level. A score of 5-III, for example, indicated that the student had mastered reading at the fifth grade level; it did not indicate the actual performance level of the student. Despite the ambiguity that resulted from using the SDAA as a measure of reading ability, special education personnel used the results of these state assessments to determine present levels of performance. As there were no other recent formal reading assessments in four of the five students' files, the researcher used the results of the state assessments to determine approximate reading levels for students in this study.

The most recent assessment for two of the five students was the grade level TAKS. As neither student had passed the English Language Arts (ELA) section, the researcher reviewed previous assessments in order to determine an estimated reading level. Information regarding the students, the dates and types of their assessments, as well as other notations from the students' special education folders, is summarized in Tables 5, 6 and 7.

Table 5. Student demographics

	Thomas	**Natalie**	**Charlie**	**BJ**	**Marvin**
Age as of 9/1/07	16	16	16	17	15
Gender	M	F	M	M	M
Ethnicity	W	W	W	W	B
Current Teachers included in the study	Coteachers 1 & 2 John	Coteachers 1 & 2	Coteachers 1 & 2	Coteachers 1 & 2	Coteachers 1 & 2 John
Former Teachers included in the study	Coteachers I & II John	Coteacher II	Coteacher II John	Coteacher II Robert Donna John	N/A

Table 6. LD determination and present reading levels

	Thomas	**Natalie**	**Charlie**	**BJ**	**Marvin**
Date of LD determination	11/00 4th grade	Unknown (Identification made in another state; records are not complete.)	8/01 5th grade (Speech eligibility in 3rd grade)	4/00 3rd grade (Identified in another district) 3/03 – DNQ 5/04 – qualified for 2nd time in 7th grade	4/07 9th grade (Previous diagnosis of ED removed)
Most recent formal reading assessment scores	Basic Reading = 84 (15 degree discrepancy) Rd Comp = 79 (20 degree discrepancy) (Test results not in file; scores recorded to IEP document)	Basic Reading = 2.8 GE Rd Comp = 2.7 GE	Basic Reading = 2.4 GE Rd Comp = 2.8 GE	Basic Reading = 3.4 GE Rd Comp= 4.1 GE	Basic Reading = not provided Rd Comp = 4.0 GE
Source Date—grade	WJ-R 10/03-7th grade	WJ-III 3/05–8th grade	WIAT 8/01–5th grade	WIAT 6/04–7th grade	WIAT 4/07-9th grade

Note: WJ-R = Woodcock-Johnson Revised; WJ-III = Woodcock-Johnson III;

WIAT = Wechsler Individual Achievement Test; LD = learning disability; GE = grade equivalent

Table 7. Results of state-mandated tests

	Thomas	**Natalie**	**Charlie**	**BJ**	**Marvin**
2007 Reading scores (10^{th} grade)	1966/2100 TAKS ELA (failed)	4-II achieved; 4-II expected SDAA (passed)	7-II achieved; 7-II expected SDAA (passed)	1942/2100 TAKS ELA (failed)	4-I achieved; 4-I expected SDAA (passed)
2006 Reading scores (9^{th} grade)	9-III achieved 9-I expected SDAA (passed)	Absent	6-II achieved; 6-II expected SDAA (passed)	1810/2100 TAKS Reading (failed)	1-II achieved; 1-I expected SDAA (passed)
2005 Reading scores (8^{th} grade)	8-II achieved 8-II expected SDAA (passed)	4-I achieved 4-II expected SDAA (failed)	5-II achieved 5-II expected SDAA (passed)	1887/2100 TAKS Reading (failed)	Transferred from out-of-state – N/A
2004 Reading scores (7^{th} grade)	6-III achieved 6-II expected SDAA (passed)	3-II achieved 3-II expected SDAA (passed)	4-II achieved; 4-II expected SDAA (passed)	Absent	N/A
2003 Reading scores (6^{th} grade)	5-III achieved 5-II expected SDAA (passed)	3-I achieved 3-II expected SDAA (failed)	3-III achieved 3-III expected SDAA (passed)	6-III SDAA Reading (passed)	N/A

Gender disproportionality in high incidence disabilities such as learning disabilities has been tracked for years, as indicated by a male-to-female ratio of between 1:5 to 3:5 in nationally representative samples (Coutinho & Oswald, 2005), thus the ratio of four males to one female in the present study was not unexpected. It appeared from the standardized tests that the reading progress among the five students had varied since their initial diagnosis. Thomas had progressed one level per year, but Natalie remained at the fourth grade level for three years. Although Charlie progressed one level each year, he remained three grade levels behind his enrolled grade level. BJ had either failed or been absent for testing since sixth grade, so his reading level was difficult to determine. Marvin had been in special education since the second grade and had been served as a student with an emotional disturbance while he attended school in another state. He transferred to North Texas ISD in the eighth grade, and at that time, he read at the first grade level. When he was in the ninth grade, he was placed in a transition room where the teacher provided direct instruction in reading and mathematics. Marvin then progressed from a first grade to a fourth grade reading level. He was re-evaluated during his ninth grade year, when his diagnosis of emotionally disturbed was removed and replaced with that of learning disability.

Sources and Types of Data

The researcher conducted forty classroom observations of the two sections of the cotaught classes throughout the fall semester. Notes regarding these observations and reflections regarding the research were entered in a reflexive journal kept by the researcher and yielded 53 pages of handwritten notes. The researcher conducted 11

weekly facilitation meetings with Coteacher 1 and Coteacher 2 and made typewritten notes after each, which yielded an additional 22 pages of single-spaced, typed notes.

Development of Themes

As the researcher obtained data through meetings, observations and interviews, she analyzed the data and coded her observation notes and her transcripts with conceptual labels. For example, the weekly facilitation meetings began at the beginning of the semester in September and continued up until the week of the final examinations in December. One of the sentences from the October 1 meeting was, "They (coteachers) both thought that knowing more about the kids was critical to helping them, but finding the time to address all the issues was difficult" (FM, 10-1, 2). This sentence was then assigned both the labels of *teacher needs* and *time issues*.

After writing up the notes from each new facilitation meeting, more labels were added and reviewed for emerging themes. When interviews were held with the principal, teachers, and students toward the end of the semester, additional themes were generated and included such conceptual labels as *grading*, *scheduling*, and *student motivation*. Approximately 45 labels emerged from the coding process. These were then synthesized into superordinate categories. For example, *TAKS* and *grading*, were merged into the superordinate category of *assessment,* given the evaluative nature of both themes. New data were continually compared with these superordinate categories, using the constant comparative method (Strauss & Corbin, 1990). Six themes consistently emerged from this process. The researcher then conducted axial coding, using the basic framework suggested by Strauss and Corbin. In axial coding, the researcher identifies the

relationships among categories and verifies those relationships with events from the study. For example, one of the themes that emerged was *accountability*. Some of the categories under this theme were *grading, parent-school communications,* and *teacher evaluation*, which all were mediating variables. Accountability was also seen as a causal condition to coteaching in the form of high-stakes testing. Axial coding thus revealed these relationships among categories as they were arranged along Strauss and Corbin's framework. The components of the framework consisted of the basic phenomenon of the study, causal conditions, mediating variables, context of the study, actions and strategies, and consequences.

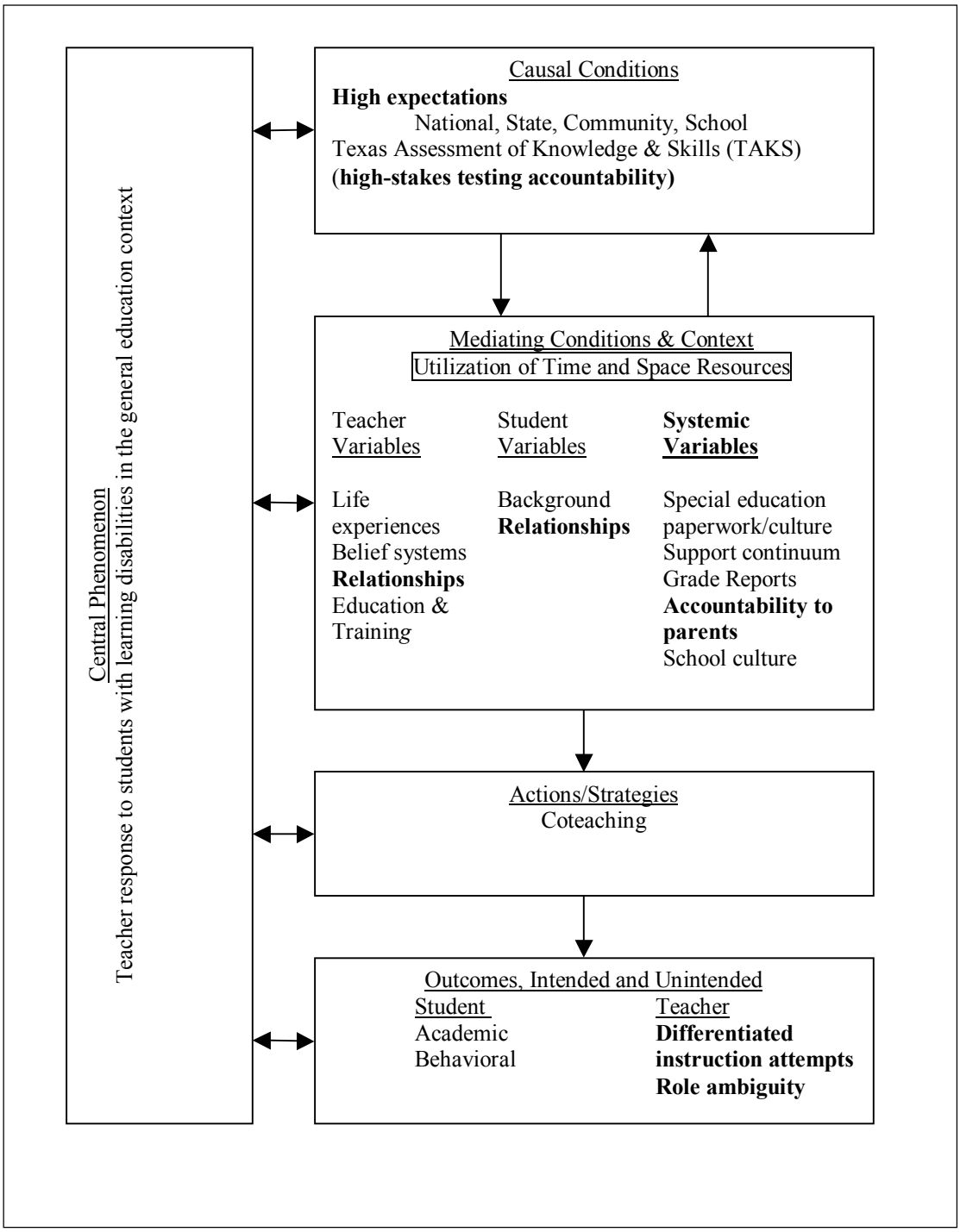
According to Strauss and Corbin (1990), the phenomenon is the major idea or event of the study. The causal conditions lead up to the phenomenon, and the actions and interactions result from it. The context of the study provides specific attributes of the phenomenon, while the mediating variables, or intervening conditions, provide the broad scope that surrounds the phenomenon. Both the context and the mediating variables affect the actions, either in specific ways or in general ways. Finally, the outcomes or consequences of the actions describe the results or responses that were generated by the actions and interactions. These can be both intended and unintended.

This study centered on the teacher responses to student with learning disabilities in a general education context. The TAKS, the high-stakes testing that resulted from the No Child Left Behind Act of 2001 (NCLB), was a causal condition of this phenomenon. The implementation of coteaching was the action that was observed in this study as a

result of the placement of students with learning disabilities in the general education classroom. Context included the specific information about the setting and participants, while mediating variables included the attributes of time, space, and culture. Outcomes included changes in student and teacher behaviors, both expected and unexpected.

Strauss and Corbin (1990) recommended that qualitative researchers use selective coding to confirm the core theme of the study and to organize their themes around the framework, using both inductive and deductive processes. Through these processes, the storyline emerges and the researcher confirms that the proposed theory is grounded in the data. As categories and subcategories are developed, they are placed into the framework to illustrate the emerging storyline. This framework is presented in Figure 1 as an advanced organizer for the reader. The categories in bold print are the themes that emerged from this study. These themes are discussed immediately following Figure 1.

Figure 1. Framework of relationships



Theme 1: Accountability

Accountability issues were complex, as they were both causal and systemic (see Figure 1). First, there was the high-stakes accountability at the state and federal levels, and in Texas, this accountability was measured by the TAKS. Although not always explicitly stated, the TAKS appeared to drive most of the decisions made at North Texas High School. Of the coteachers, Coteacher 1, the general education teacher, was the more focused on the TAKS, which was frequently demonstrated by her concern about pacing (FM-10-1,1; FM-10-15, 1; FM-11-26-1; C1-I-1). She explained that she had to "get through a certain amount of content to get kids ready for the TAKS" (FM-10-15-1). Although she believed that coteaching offered "the best practices for all teachers" (C1-I-2), she also believed that utilizing anything but "straight lecture" would slow down the pace and prevent the students from being successful on the TAKS (FM-11-26-1). For example, she thought that hands-on activities were good classroom practices, but "for a few of the special education kids, [they were] too distracting [or took] too long" (MC). In one facilitation meeting early in the semester, she expressed her concern. "We've only done two chapters, and at this time last year we had done three. Pacing-wise, I'm behind . . ." (FM-10-1-1).

In contrast, Coteacher 2, as a special education resource teacher, had never been accountable for grade level high-stakes examinations. Coteacher 2 reflected on her feelings regarding the TAKS preparation process: "She's [Coteacher 1] behind . . . I don't care, but I'm not used to having to deal with TAKS, you know" (C2-I-7). Coteacher 2 agreed that picking up the pace was the right thing to do to prepare for the

TAKS, but observed that as the pace increased, the amount of time for students to understand the information decreased. "There's still the processing problem, and I wish someone had an answer for that" (C2-I-7).

TAKS scores were the predominant concern of the principal.

> I think the biggest benefit [of coteaching] that I see is that they [students] are all going to have to take that TAKS test. It's going to be part of their graduation requirement, so if [coteaching] helps them pass the social studies component, that's the biggest benefit, right there (P-I-7).

As Texas had recently mandated that most students served in special education had to be assessed with a grade-level form of the TAKS to meet accountability requirements, rather than use the SDAA from previous years (TEA Correspondence, 2007), the principal believed that combining grade level content with the special education strategies in the cotaught classroom was especially important for these students: "I think right now . . . having the special ed perspective and the regular ed perspective in the same classroom with the same material, on grade level . . . I think that is the way to level the field with those kids" (P-I-3).

The second way that the accountability theme emerged was as a systemic issue. Accountability to parents, which was reflected both on the report card and in feedback from the community, was a subject that arose frequently. The report card served as the record of mastery in a subject. At North Texas High School, 70 was the lowest grade a student could earn and still receive credit for the course (HB-10). Grades, then, were a primary focus for many students, teachers, and parents. When asked which classroom

supports helped him the most, Thomas, a student with a learning disability, responded that modified tests were helpful. When prompted for an example, he responded, "Like in multiple choice, they will take away one or two answers . . . it helps me get better grades, I guess" (T-I-1).

Although the North Texas High School student handbook called for 80% of a student's grade to be calculated from the class average and 20% from a semester test (HB-10), the ways by which the class average was determined varied among the teachers that were interviewed for this study. Robert, the technology teacher, reported that lab activities or projects counted for 80% of the grade for his class (R-I-6). Both of the students with learning disabilities in his class had earned grades in the 90s, which were most likely a result of Robert's use of hands-on assignments, flexibility in pacing, and teacher-designed examination criteria. As a result, good grades were the norm, even for one of the students who had had attendance problems due to illness. "He missed a lot of classes last year, and I don't know how many credits he lost, [but] he made a good grade [in my class]" (R-I-8).

Good grades were not always the case, however. In contrast to the high grades achieved in the technology class by BJ, a student with a learning disability, his general education English grades were ones of failure. Donna, a general education teacher, explained, "He did not write his research paper, and so therefore he failed the last six weeks and the whole semester [of junior English]" (D-I-2). The research paper was a requirement of all English students at North Texas High, from English I to English IV, and by policy, students who did not complete it automatically failed the semester in

which it was due (HB-64, 65). When asked if BJ had any history of failure, Donna responded, "Yeah, because I'm pretty sure he's in sophomore English, also," indicating that he, as a junior, was repeating the sophomore class for credit (D-I-6). BJ's transcript indicated that he had failed both semesters of English 2 (BJ-Tr). His parents expressed that their only concern during the most recent IEP meeting was BJ's ability to "pass classes" (BJ-IEP-1).

BJ had described his own learning disabilities as being moderate to severe when the researcher talked to him early in the second semester of the year. When asked to select a number on a scale of 1 to 10 that would best describe his learning disabilities, he chose 7. He attributed his difficulties to the fact that he couldn't "spell or read that good" (BJ-I-1). But BJ quickly added that he was passing all of his courses for the semester, in contradiction to his stated concerns about his inability to read well. When asked if he would be interested in getting extra reading help, he emphasized that he "was doing OK" and emphatically shook his head "no" in response to the suggestion (BJ-I-1). He added that he played soccer, and the no pass, no play rule was an incentive for him to keep his grades up. The no pass, no play rule was originally passed by the Texas legislature in 1984 as a part of a school reform package. The rule, with some exceptions, bars students from extracurricular competition for at least three weeks anytime their grades drop below 70 (No Pass, No Play, 1995*)*.

In the cotaught U.S. History classroom, class grades were a result of tests and daily assignments, nearly all of which were written. Daily grades were based on warm-up activities that students completed at the beginning of every class and on in-class

worksheets, and counted as 32% of the total grade. Chapter tests and six-week tests counted as 48% of the grade. During the fall semester that was observed, classroom grades were made up of 33 daily grades and nine tests. Although most students earned passing grades on daily work, test scores fluctuated, particularly for the students with learning disabilities. This was especially evident during the third week of school, when every student with learning disabilities failed the first test of the semester (GS). The teachers had given the test with no modifications, to evaluate how well students could perform without them (MC).

Coteacher 1 and Coteacher 2 discussed the test results of the students with learning disabilities. They agreed that the best way to modify tests for those students was to provide oral tests in a room separated from the main classroom. They decided to discreetly move them to Coteacher 2's room across the hall on test-taking days, so as not to call attention to their differences. Once there, Coteacher 2 would read the test aloud and practice test-taking strategies with the students (RJ-3-6).

Despite the teachers' efforts to be discreet, some students did note that certain students were moved on test day, and one student inquired, "What are y'all doing over there?" (C2-I-6). Coteacher 2 explained that she was teaching test-taking strategies, and the student inquired if she could join the group. Coteacher 2 seemed pleased about the interest from the general education students, and she reported that, "We have several now that come" (C2-I-6). Scores increased for all students with learning disabilities on the second test, although this rise did not hold steady throughout the semester. The teachers attributed the inconsistent results to some students' reluctance to change rooms

on test-taking days, as well as the tendency of some students not to study for exams (MC).

Accountability to parents was reflected in more than the explicit and quantitative grading system. Parent-school communications were another form of accountability. Robert, the technology teacher, referenced the district's database system, where parents, with a password, could access not only student grades, but their attendance and schedules, as well as administrative and faculty telephone numbers and e-mail addresses. Robert thought that the transparency of records was a benefit, especially for parents who "just need some feedback" on items like student attendance (R-I-10). He added that this access had potential drawbacks, however.

> The grading may not be right or something. They will call you. They will call you if they feel like it's, you know, 'I don't know if you're really doing this thing right or not,' you know, if my son or daughter is receiving the best instruction . . . and so, ah, yeah, it's [the parental access to the database system] a watchdog for us (R-I-10).

In addition to the school's database system was the district's website, which posted newsworthy items on a regular basis. Each campus sent home printed information, especially at the beginning of the year, regarding school programs and policies, upcoming events, TAKS information, and honors and awards. This communication kept parents informed of the latest news and helped the campus to stay accountable to them.

As a part of this accountability process, in September, the principal at North Texas High School sent a letter to the parents of each student in the cotaught classrooms explaining the implementation of the coteaching program, and the benefits of having two teachers in the classroom (A-1). How this new, unproven program was perceived by parents was a concern to the principal, but she had been pleased to report at the end of the fall semester that "there are no problems from a single . . . parent" (P-I-2).

In addition to maintaining positive parental perceptions, the principal was also accountable for maintaining positive faculty perceptions. She noted that she wondered if "some of the other teachers [would be] upset that there's a second teacher . . . in that classroom" when the other faculty learned about the coteaching implementation. The principal observed that she had no complaints from other faculty members regarding the cotaught classroom, however (P-I-4).

The accountability issue was present in other ways, as well, as teachers were accountable to their principal for their successes and failures in the classroom. The coteachers in this study were concerned about how their coteaching would be evaluated as part of their annual teaching evaluation. During one of the coteacher facilitation meetings, the researcher invited the principal to discuss these issues with the coteachers. After a long discussion regarding evaluation rules and procedures, the principal determined that, because evaluations did not have to be conducted every year, and both teachers had been evaluated the previous year, the coteachers would be exempt. After the meeting, both teachers shared with the researcher that even though they thought they

would perform well in an evaluation, they were happy about not having to undergo the potentially stressful event under their new coteaching arrangement (FM-9-25-2).

Accountability was evident in many forms, but the most prevalent were the TAKS and the report card, as seen in Figure 1. These assessments were used to define how well or how poorly teachers taught the curriculum to their diverse classrooms, how well or how poorly the principals managed the financial and human resources available to their schools, and how well or how poorly the district responded to the high expectations of state and national mandates. Thus, an extremely high focus was placed on these assessments.

Theme 2: High Expectations

The cotaught classroom, with its special education support and grade level curriculum, was a reflection of the high expectations at North Texas High School (see Figure 1). Both coteachers stated that holding students to the higher standards of a general education setting was extremely important (FM-10-1, 2). Yet, there was still a hesitancy regarding the ability of students with learning disabilities to achieve. Coteacher 2, the special education teacher in the cotaught classroom, expressed her concern for some of the students that she had taught in the resource setting in previous years. She thought that some of them had inherent traits that would keep them from succeeding in the general education setting. “I was . . . concerned about some of my students that were lower functioning” (C2-I-1). Coteacher 1, her general education partner, countered with the idea that students sometimes have to apply extra effort before

they exhibit signs of success. “They can do this, you know. I’ve seen other kids do it. We don’t need to baby them so much” (C2-I-2).

John, a special education teacher who taught two of the students in the study, believed that if students were sufficiently motivated, they would succeed. He collaborated with a general education teacher, serving as a source of one-on-one assistance to those who struggled. He described the effectiveness of the classroom collaboration. “It’s as effective as students will allow. Some of our students are simply biding time until they turn of age, and they can drop out” (J-I-11). When referring to the impact of his collaboration with the general education teacher, he said, “I see students learning. I see them retaining. And that works with the ones who are willing to [work]. It all comes back to the young man or the young lady wanting to” (J-I-13).

Donna, a general education English teacher, agreed that student motivation was the key factor in student success. “By the time they reach this stage, it’s more of their own motivation . . . because I’ve had those special education kids that just worked and worked and . . . learned and succeeded. But those who give up . . . it’s kind of ‘It’s easier to fail and say I never tried, than it is to try and fail’” (D-I-11).

Robert, the technology teacher, described his expectations bluntly. “If they’re failing, it’s my fault” (R-I-8). He expressed surprise at learning that some students were labeled as learning disabled. “I wonder why some of them are even in with special or learning disabilities, because I don’t really see it here” (R-I-4). Yet, in describing a group of middle school students who had not been successful at a previous school, he added, “There, most of my special education kids were discipline problems, but I guess

that's the age group and maybe the parent non-involvement, because we can't do it all . . . we need their support" (R-I-10).

Both Coteacher 2, a special education teacher, and Roger, the technology teacher, saw factors beyond a student's own efforts as mediating a teacher's high expectations. Coteacher 1, the general education teacher, John, a special education teacher, and Donna, a general education teacher, believed that once students were motivated enough to exert the effort needed to pass, there was little that would stop them from succeeding.

When discussing this phenomenon with the researcher, Coteacher 1 declared that she thought students with disabilities could succeed if they were willing to devote great effort to their studies, because she had been a struggler while in school, and she had achieved by spending more time on her academic tasks. Coteacher 2, on the other hand, was the mother of a child with disabilities and an admitted "softie" (MC). She believed that varying levels of support were necessary for student success, and that strategies had to be constantly monitored for effectiveness. She explained why playing a game of *Jeopardy*, usually considered a motivating method of classroom review, might not be in the best interest of all students with learning disabilities.

> They're not going to expose themselves to not knowing or maybe being made fun of, because that probably happened in third grade, so (they) learned a long time ago just to sit back and be quiet and not let anybody notice (C2-I-6).

It appeared that the meaning that each teacher had assigned to the term high expectations had been developed from personal experience, rather than from educational

theory or philosophy. And because each had diverse experiences, each held a different view of the essence of high expectations.

Expectations were also revealed in the students' Individual Education Programs (IEPs). These were detailed goals and objectives approved by a student's IEP committee. Generally, they were drafted by the teacher in each subject area, discussed in the IEP meeting, then approved from the draft or after modifications to the draft were made. Meetings were organized by the school's diagnostician, and as her caseload was demanding, they were scheduled for a total of 50 minutes, or one class period. These meetings were attended by the diagnostician, parents, general education and special education teachers, the student, and sometimes other personnel who had information to share on the student. The meetings were chaired by the principal or her designee, usually an assistant principal. In order to attend these meetings, teachers needed either a teacher aide or a substitute teacher to monitor their classrooms, unless meetings were scheduled during a teacher's conference period. It was to the school's advantage to keep meetings within the 50 minute class period, so teachers could maintain as much classroom contact time as possible. If an IEP member wanted to spend more time in the meeting than the 50-minute allotment would allow, the principal advised the diagnostician to re-schedule a continuance for another day. Although the researcher had not attended any IEP meetings during the time the study took place, informal conversations with a number of teachers in the district suggested that it was the rare exception that any IEP member challenged an IEP during a meeting or requested a meeting extension. Normally, IEPs

were accepted as written. This acceptance was part of the culture of special education at North Texas High School, and it had far-reaching effects on students.

Thomas, who had achieved success at the 8th grade level on his 10th grade SDAA, had been scheduled for a resource math class entitled Mathematical Models with Applications. The overview of this class was described in the Texas Essential Knowledge and Skills (TEKS).

> 1) In Mathematical Models with Applications, students continue to build on the K-8 and Algebra I foundations as they expand their understanding through other mathematical experiences. Students use algebraic, graphical, and geometric reasoning to recognize patterns and structure, to model information, and to solve problems from various disciplines. Students use mathematical methods to model and solve real-life applied problems involving money, data, chance, patterns, music, design, and science. Students use mathematical models from algebra, geometry, probability, and statistics and connections among these to solve problems from a wide variety of advanced applications in both mathematical and nonmathematical situations. Students use a variety of representations (concrete, pictorial, numerical, symbolic, graphical, and verbal), tools, and technology (including, but not limited to, calculators with graphing capabilities, data collection devices, and computers) to link modeling techniques and purely mathematical concepts and to solve applied problems.

> (2) As students do mathematics, they continually use problem-solving, language and communication, connections within and outside mathematics, and reasoning (justification and proof). Students also use multiple representations, technology, applications and modeling, and numerical fluency in problem-solving contexts (Texas Essential Knowledge and Skills, 2007).

The goal in Thomas' IEP in math was to master secondary math skills at the 8th grade level. The specific objectives were:

1. perform rounding of numbers, in all place values;
2. add multiple-digit, whole numbers, like signs; renaming and regrouping;
3. subtract whole numbers, like signs, requiring regrouping and/or renaming;
4. multiply multi-digits by two or more digits with regrouping;
5. divide by three or more digits, with remainders (T-IEP-11).

The objectives in Thomas' IEP were loosely based on the skills requirements for Grades 3-5 in the TEKS, rather than those for Grade 8. Demonstration of computational skills as demonstrated through problem-solving techniques was an explicit requirement; however, the development of cumbersome computations without the use of technology, as described in Thomas' IEPs, was specifically discouraged at the Grade 5 level (Texas Essential Knowledge and Skills, 2007).

Thomas' last formal assessments to determine eligibility for a learning disability were in 2003, when he was in the 7th grade. At that time, eligibility was determined by the discrepancy model—the difference between IQ and achievement. Thomas' only

severe discrepancy (20 points) was in reading. There were no discrepancies in math or any other tested areas. While he was in 10th grade, he mastered an 8-II on the SDAA in math, suggesting that he was working adequately at the eighth grade level. Nevertheless, Thomas' IEP committee accepted his grade 3-5 mathematics objectives on the Grade 11 IEP as drafted by his teacher, suggesting that their expectations for his achievement were lower than his assessed achievement levels would indicate.

Although mathematics instruction was not directly related to Thomas' instruction in the cotaught U.S. History class, it contributed to his feelings about his learning disabilities. When asked to rate his learning disability from 1-10, he responded that he would rate it "…about a 4. I can comprehend some stuff, but I stink in math" (T-I-1).

These lowered expectations of self were seen with Charlie, as well. He rated his disability as a 5 or 6 on the 10-point scale, adding, "I'm not good at math, history, or reading," even though he originally qualified as learning disabled only in writing (C-I-1).

John, the special education teacher who taught mathematics, shared his thoughts regarding student motivation in mathematics.

> If they're not wanting to do it [study mathematics], you know, because of their experiences in the past… they've developed a mental block to it, which is very, very possible. I had to go through some hypnotherapy to unblock some math problems for me, believe it or not, so it's still going to come back to them. Once we get past whatever it is that's shut 'em out – and they may not know – they may be kind of like,

> ‘You know, I’d like to do my math, I’d like to learn it, but every time I think of it, I can’t… I just can’t do it…’ (J-I-13, 14).
>
> He summarized his experiences in the classroom this way:
>
> We’re successful where the students are even marginally allowing us to work with them, and of course, unsuccessful where they can fight ya…. As far as our students go, Charlie is most willing to better himself in math. The other two young men are resistant (referring to Thomas and BJ) (J-I-14).

It appeared that the expectations that John had for his students were mediated by his belief that lack of success was caused by student resistance, which in turn, was due to a mental block that was nearly impossible to clear without outside intervention and continued persistence. Much like the other teachers, John used his own experiences to develop his belief system regarding high expectations. These beliefs, along with the culture of special education that discouraged challenges to IEPs, allowed a range of expectations to be condoned at North Texas High School.

Theme 3: Systemic Challenges

There were many administrative and systemic challenges associated with coteaching implementation, including time and space issues, scheduling quandaries, support systems, teacher training, and the flow of information from special education paperwork (refer to Figure 1). Each of these challenges was originally coded as a separate category. As the researcher collected more data, however, these issues appeared to be inextricably linked to one another. Scheduling, for example, was dependent upon

available space and support systems; support systems were created from needs noted in the special education paperwork and specific teacher training; access to information in the special education paperwork was dependent upon time and scheduling; and teacher training was dependent upon time and needs noted in the special education paperwork, as well as in teacher personnel files. As the categories were ones that school administrators handled on a regular basis, they were grouped under the superordinate category of *campus administrative challenges*, which then was included in the theme of systemic challenges.

Time

Lack of time was cited as a major challenge to the implementation of coteaching at North Texas High School. Because of the number of times and ways in which *time* was cited as a constraint by both teachers and the principal in the scheduling process, the coteaching implementation process, and the classroom preparation process, it originally was considered by the researcher to be a major theme. However, as the nature of time in the data was as a fixed resource provided uniformly to all, the researcher reconceptualized time as a mediating variable that mediated all aspects of the study. At the administrative and classroom levels, the concept of time was a management issue. Time was not the cause of challenges that educators faced in implementing coteaching; rather, the challenges stemmed from the many ways in which time was consumed. The researcher affirmed this conceptualization when conducting a member check with the coteachers. The coteachers agreed that the concept of time was not so much of a theme as it was a resource that affected all aspects of their work. Their personal management of

time affected its scarcity or abundance, which, in turn, had repercussions in every area of their instruction. If, for example, the teachers spent a great deal of classroom time on TAKS simulations, they had less time to invest in differentiating instruction. If they spent a great deal of time reacting to student behaviors, they had less time to invest in building relationships with students. If they spent a great deal of time in extracurricular activities with students, they had less time to invest in their personal pursuits. Although they sought balance in their day, it was seldom achieved with respect to time (MC).

This balancing act with time was evident from the very beginning of the study. Due to the hospitalization of the special education coteacher during the summer, training was moved to the first weeks of the school year. The teachers had their common planning period immediately before lunch and agreed to set aside one day a week for a combined lunch and training. After the training took place, the researcher used this time to meet with the two teachers in facilitation meetings once each week to discuss the coteaching process. Both teachers confessed, even with joint planning periods, that there was little additional time beyond these weekly meetings for coplanning (RJ-1-4), and that much of it was impromptu, as described by Coteacher 1, the general education teacher.

> Honestly, most of it's [planning] in the hallway between classes. 'Hey what happened today, what should we do about that differently?' You know, during passing periods we'll say, 'That didn't work very well; what should we do next period?' or 'OK, So-and-so's having trouble; how are we going to better help him?' And then we try to once a week sit down and

> actually go through the content about what we're doing, but it's usually only about once a week, and it's hard (C1-I-2).

In contrast, she described what she believed would be the ideal planning format.

> We thought of a planning period just for us [for solo taught classes], and then a planning period for coteaching . . . because it really is a whole . . . other class . . . it's not just planning the content and what the day is going to be like, but it's also planning the modifications, and how you are going to reach each student. It takes a while to learn what their needs are going to be, whether they're written down on an IEP, or whether they're just a kid sitting at a desk. You don't know yet. Each day is a different day in learning how you're going to make it work. It's a lot of planning, which is hard to get the time to do (C1-I-8).

Both teachers also thought that block scheduling would lend itself to coteaching more than the traditional seven-period day, to enable more time for activities. Coteacher 2, the special education teacher, explained, "I think it would work better in a block schedule, but we don't have that option" (C2-I-2). Coteacher 1 agreed.

> It would be nice to have more time; we could have more hands-on. We either need more time or less students . . . to really implement it well. It's hard to make those transitions . . . you know,

> switching gears. If we're going to really do one thing and then . . . switch . . . it takes time (C1-I-7).

One way to resolve the time issue was to reduce the number different classes that each teacher taught in a day, as each class required separate preparation time. Both Coteacher 1 and Coteacher 2 thought that coteaching the whole day together would be more efficient than having different preparations and suggested that they coteach World History and U.S. History in alternate years. The principal responded that any scheduling format was possible, given enough lead time for planning it (FM-9-25-1).

Later, however, after thinking through the requirements of the TAKS and the impact that the state testing schedule had on the district master schedule, the principal concluded,

> It's a scheduling nightmare, and I just realized we probably couldn't do the coteaching [with all] World History [classes in one year, and] U.S. History the next, because . . . if they're a 10th grader . . . in a junior level U.S. History . . . then they'll be taking a 10th grade [TAKS] test, not U.S. History. I've got to look very closely at the TEKS at the 10th grade level. You don't want to put the kids at a disadvantage [for the TAKS test] (P-I-10).

Space

Another systemic challenge that the teachers discussed was *space*. One section of the coteaching class began the year with over 30 students, and the overcrowding affected the kinds of teaching that could be done, as well as the logistics involved with two

teachers sharing a space. Coteacher 2, the special education teacher, described the conditions. “It is just so crowded, and when I do my wandering, I have to step over feet and book bags and everything . . . and it would be a lot easier to do the stations [with a larger room]. I need a desk in there, too” (C2-I-8).

Coteacher 1, the general education teacher, shared how the lack of a second desk and computer affected student perception.

> You know, they come in and it’s [my] classroom, it’s [my] stuff, and it’s my desk, and it’s my computer and my grade book . . . there isn’t a desk for her, so it automatically looks like, instead of teacher and teacher, it’s teacher and helper (C1-I-3).

When the principal heard these comments, she asked the teachers to request a larger room and any other additional needs they had in the spring for the following year. Her support of coteaching was evident as she smiled and concluded, “Scheduling is a snap, if all is known in advance” (FM-9-25-1).

Continuum of supports

Time and space directly affected the continuum of supports, another systemic challenge presented by the teachers. Both coteachers thought that some students in the class needed more support than they could provide in the history classroom. Coteacher 2 responded to a question about how the reading levels affected students.

> [The low reading level] is a hindrance, always, like when we do a review, even if we give them a copy of the review, like I did yesterday, a copy of the review with the correct answers, because we move so quickly

> that they miss about every third one, and the fact that they can't read, well, makes it difficult to study for a test. We're asking for some reading classes (C2-I-3).

Coteacher 1 explained how the needs of a few made it difficult to use models other than one teach/one drift. With intense one-on-one time needed for some behavioral issues, which were generally handled by the special education teacher, it was difficult to plan for the service delivery options that fully utilized both teachers.

> It seems at the high school it's easiest to [use one teach/one drift], just to keep the kids on track, especially with some of the ED (emotionally disturbed) kids we have. They require a lot more attention, a lot more one-on-one time. [We use one teach/one drift] in order to try to keep the whole class involved and moving forward instead of having to stop the class for one or two students (C1-I-1).

Coteacher 2 explained that there were alternative settings, such as the behavioral transition room or the content mastery room, which could be used in addition to history classroom for some services, but one of the coteachers would still need to make the decision to use them and then facilitate the move from one room to another.

> We have a student that this is the first time he's ever been away from self-contained, and ah, has some real issues. He barks like a dog, and he won't stay in his seat. He talks across the room, tries to get attention. So, I handle him, and sometimes it means taking him into the hall or taking him down to self-contained again. She [Coteacher 1] can

> continue. That way, the other students can still get their teaching. It's perfect as far as no matter what happens in the classroom, teaching continues, teaching goes on, regardless. That's the best thing about coteaching, I think (C2-I-7).

Special education flow of paperwork

Another systemic issue that was initially presented by Coteacher 1 was that of special education flow of information, specifically through paperwork. She explained that teachers get *mods* (modification sheets) but seldom receive any background information on students, so they "don't know how to engage kids" (RJ-2-5). According to the Individuals with Disabilities Education Improvement Act of 2004 (IDEA 2004), students with disabilities are entitled to "specially designed instruction" to meet their unique needs (IDEA 2004a, 2004). The details of this instruction are found in students' IEPs, which specify the grade level a student should be taught on as well as the accommodations that are necessary for the student's success in the general education setting. The social studies accommodations for all five students are shown in Table 8. This accommodation information was the part of a student's IEP that was routinely distributed to teachers and that Coteacher 1 believed inadequate to appropriately serve students.

Table 8. Accommodations of students with learning disabilities

Accommodation	**BJ**	**Charlie**	**Charlie**	**Natalie**	**Thomas**	**Marvin**
	5/07	10/06	10/07	2/07	2/07	5/07
Oppty. to leave class for assistance		X	X	X	X	
Short instructions (1 or 2 steps)	X				X	
Frequent feedback/immed. feedback	X	X	X		X	X
Simplified directions / Use wait time				X		X
Provide study sheet				X		
Extra time for assignments		X	X	X	X	
Emphasis on major points		X	X	X	X	
Copy of class notes			X	X		
Color transparencies		X				
Oral exams			X			
Product based assignments. and evaluations					X	
Small group/coop. group/individual instruction						X
Modified curriculum (TEKS)						X
Set clearly defined limits						X
Use frequent eye contact/proximity control						X
Use private/quiet re-directions						X
Follow Behavior Intervention Plan						X

Note: Charlie started the semester with one set of accommodations, but completed it with a different set, because his annual IEP meeting was held in October.

To address Coteacher 1's concern about the lack of background information on students, the researcher asked the teachers what specific information they needed in order to improve their services to the students. Coteacher 1 responded, "Anything that would help me understand my kids–test scores, reading levels, whether or not they have memory or organization problems" (RJ-2-5). She added that an especially critical piece of information was "whether or not the students were taking TAKS" (RJ-2-5).

To research the questions that Coteacher 1 had about student paperwork, the researcher spent three hours reviewing folders at the district's special education office during the following week. In making notes for Charlie, one of the students with learning disabilities, she found that he was enrolled in resource classes for math and English, and in general education classes for the remainder of the day. A review of his file indicated that Charlie had first been referred and admitted to special education services as a speech student while he was in the third grade in another school district. In August 2001 when Charlie was beginning fifth grade, he was referred for testing for a learning disability. Although he had grade equivalent scores in the high school range for oral expression and had strong listening skills, his written expression was equivalent to that of a beginning kindergarten student. His IEP committee determined that he was learning disabled in the area of written expression. There had been no other formal testing on Charlie since fifth grade. When Charlie transferred to North Texas ISD in 2003 in the 6th grade, he was three grade levels behind his peers in reading and math.

It was very apparent that despite the extensive paperwork that was kept on students receiving special education services, this information was not readily available

to the coteachers. To assist the flow of information through paperwork, the researcher devised a one-page sheet which noted when Charlie was referred as learning disabled, his general IQ area (average, low average, high average), his area of qualification, his recent state assessment scores, his strengths and weaknesses as noted in the IEP meetings, and his accommodations. In addition, she included notes from the IEP meetings that she thought could inform the teachers of factors to assist with engagement, such as his areas of interest. Finally, any contradictory pieces of information were noted in a special aside. In Charlie's case, the researcher noted that he had been in resource math classes since arriving at North Texas ISD, but had never qualified as learning disabled in math.

When the researcher next met with the coteachers, she provided a copy of the one-page summary to each teacher and asked for their feedback regarding its use in assisting with the flow of information from special education paperwork to teachers. Coteacher 1 studied the sheet and said that the information would be "good to know" (RJ-3-6). She had been concerned about the need for change regarding paperwork and hoped that the researcher would write about her concern in the study (RJ-2-5).

Coteacher 2 glanced at the sheet, and then handed it back to the researcher as she began a more in-depth discussion about some of the students' strengths and weaknesses from her personal experience with them (RJ-3-6). The information sheet did not appear to have the same impact on her as it did on Coteacher 1, most likely due to the time that she had spent with Charlie and the other students in previous years in resource classes.

In response to Coteacher 1, the researcher completed the summaries on the other students to assist with the flow of information to her.

For most teachers in the general education setting, the mod sheets that listed classroom accommodations were the sole source of information they received on students who were to receive specialized instruction. The mod sheets were part of the overall Individual Education Program (IEP) of the student. The IEP was a multi-page document that was developed in an IEP meeting. It contained much information on a student, including a student's diagnosed disability, strengths, challenges, interests, goals, and preferences, as well as achievement levels, functioning levels, and information on the type of high-stakes testing a student would take. Many documents were required to be reviewed to develop a comprehensive IEP, including past testing and grades, discipline, attendance patterns, comments from parents, teachers, and other interested professionals, and any other pertinent information that informed the members about the students' strengths, needs, and patterns of performance. Following are examples of the paperwork that IEP committees accessed to develop an appropriate plan of instruction for students with disabilities.

Discipline reports. The IEP team reviewed paperwork regarding student discipline in developing student IEPs. Many discipline reports involving the students in this study revolved around attendance issues: being tardy for class, or not reporting to class or to detention. During the fall 2007 semester, Natalie had been disciplined twice for such offenses. Thomas and Charlie had suffered no offenses during the same period.

Marvin and BJ, however, had multiple lines in their discipline records for the same period of time.

Marvin, the student who had been diagnosed as emotionally disturbed for most of his school years and who had spent his elementary and middle school years in an adaptive behavior unit, had 11 offenses. While two of these were related to attendance, the other nine were behavior-related.

It may be that neither Marvin's academic nor his social skills were developed enough for him to handle the inevitable frustrations that he experienced from the general education setting. Marvin had described his learning disabilities as severe when the researcher talked to him early in the second semester of the year. When asked to select a number on a scale of 1 to 10 that would best describe his learning disabilities, he chose 8. "If I get stuck, I get stressed out and . . . just drop everything and stop working." When asked about the kinds of things that got him stuck, he responded, "The tests and the quizzes." He explained that Coteacher 2 helped him with his tests and quizzes, first by reading the questions, and then by giving "a hint of where [the correct answer] was or where [an historical event] took place" concluding that it was "nice to have a teacher's aide there" (M-I-1, 2), in reference to Coteacher 2.

Attendance. In addition to discipline records, paperwork from attendance records was reviewed by IEP teams to develop student IEPs, as well. Attendance for students at North Texas High was maintained electronically, as were the student discipline records. Teachers entered tardies and absences into the computer system at the beginning of every class period. If a student were later excused, the school's attendance clerk entered

the appropriate notation into the system. Attendance sheets were printed and reviewed at each IEP meeting. After the meeting, this paperwork became part of the IEP documentation and placed in the student's file.

None of the five students had perfect attendance, but three had absences that appeared excessive. BJ had 43, Marvin had 37, and Natalie had 32. Charlie had 22 and Thomas had 8. An absence consisted of any absence during one day, any number of tardies in one day, as well as in- and out-of-school suspensions.

BJ had three days of in-school suspension during the year, five days when he was absent the entire day, and the remainder of his 43 absences consisted of days when he had tardies and skipped classes. Eight of these occurred during the cotaught class (BJ-AR). In contrast to BJ, Thomas, whose favorite subject was history, was tardy to the cotaught class only once, and Charlie, who kept Coteacher 2's cell phone number in his own cell phone as a support, never skipped the cotaught class (T-AR; C-AR). While these students had instances of skipping other classes, their patterns of attendance suggested that either their academic interests or established relationships facilitated their excellent attendance record in the cotaught classes.

Grade reports. IEP teams also reviewed paperwork from grade reports. As with the discipline and attendance records, grade reports were stored electronically on the district's database system and both progress reports and report cards were printed for parents and for IEP meetings. Although teachers had access to their own students' grades using this system, they did not have access to grades from other teachers, so they

did not always know how a student was performing in other classes, unless it was through informal conversations or an IEP meeting.

Both BJ and Natalie were failing in multiple classes. At the end of the first semester of 2007, Natalie's grades in Spanish I, Geometry, Biology, and English 3 were in the 70s. She earned a 90 in Art, but later dropped that class because she "didn't get along with the teacher" (N-I-2). She failed both the cotaught U.S. History class and an elective in Family and Consumer Sciences during the semester of the study. The cotaught model did not appear to make a difference for Natalie, who had the dual diagnosis of emotionally disturbed and learning disabled. BJ, who had previously failed English 2, had earned a 70 in that class for the fall semester, but had failed the first semester of English 3, because he had not completed his research paper, which was required by all students at North Texas High (HB). He had earned 100 in Athletics for the semester, a 95 in Tech Systems, a 77 in Geometry, and a 70 in the cotaught U.S. History class (BJ-Tr).

Much of the information that was available on paper and through the district's electronic recordkeeping system did not appear to have influenced the development of students' IEPs at North Texas High School. Although the students' reading levels, strengths, and interests were diverse, all the students with learning disabilities in the present study received the same instruction with very similar accommodations. Availability of information from special education paperwork had little effect at the classroom level, either. Although the improvement of paperwork flow was cited by Coteacher 1 as critical to the success of students with disabilities placed in the general

education setting, it did not appear to be used to effect change in instruction by either teacher.

Theme 4: Relationships

The importance of developing and maintaining meaningful relationships was repeated throughout the study. Coteacher 2 was aware of the backgrounds of all of the students in special education. For example, she knew that the reason that one student slept some days is that his family lived in a motel, and every night his responsibilities included cleaning rooms in the complex. The reason that another student was in jeopardy of failing is that he saw no future in passing and graduating. He had become a father in middle school and would be forced to pay child support upon graduation. Every student had a story, and Coteacher 2 knew each one and provided empathy (FM-10-1, 2).

These relationships developed over time and were not bound by school hours. Charlie, one of the students with learning disabilities, said that Coteacher 2 was available whenever he needed her. "I keep [her] phone number plugged into my cell." She had taught him in resource classes as a freshman and sophomore and now, in his junior year, he cited her as one of his strongest supports (C-I-1).

In some ways, however, Coteacher 2 also served as a protector. Coteacher 2 recounted Charlie's reaction to the increased pace and workload of the cotaught class. "He came to me all the time and said, 'I want out of that class, I want out of that class. I just hate [Coteacher 1]; she's too hard, and I want out of that class.' He said, 'I like you.' Coteacher 2 laughed at this last utterance, explaining how "careful" Charlie could be in expressing his emotions to protect the relationship which he valued (C2-I-2).

Coteacher 1 agreed with Coteacher 2 that knowing more about the students was a critical link in providing them help. She had had several students in previous years in different social studies classes, thus had varying levels of knowledge of her students. She readily admitted that with 31 students in one of the cotaught classes, however, "there was no way" she was going to be able to build relationships with kids (FM-10-1-2). Yet, she matter-of-factly declared, "Even gang members like me. Why? I'm nonjudgmental, fair. Everyone gets the same treatment" (FM-12-17-1).

This nonjudgmental attitude was evident in her daily behaviors. She did not appear to have favorites, but talked to everyone throughout the day, even those who had reputations for being difficult. If one day she called down students for misbehaving, the next day she could be seen chatting and laughing with them in the hallway between passing periods (RJ-9-2).

Both teachers agreed that having a positive professional relationship with each other was critical to the success of the class. Coteacher 1 explained, "You're going to spend a lot of time with each other, and you need to have a good relationship" (C1-I-6). To her, that relationship reflected the qualities of helping, sharing, and a respect for each other's professional contributions.

> I think that's one of the things that we are really lucky with is that we both want to learn from each other. We're both willing to help each other. I don't care if she butts in. I tell her, "You're welcome anytime, if you've got something interesting to say, or a story." And she doesn't care

if I butt in, so it's been a very easy working relationship between the two of us" (C1-I-6).

Coteacher 2 agreed, adding, "We just naturally, we were a fit. We just were. And I think that's so important in coteaching" (C2-I-5).

There was a distinct difference in the dynamics of the two observed classrooms as a result of the student-student relationships that had formed. The classroom with fewer students had more student-induced behavioral issues that appeared to intensify over the course of the semester. There were constant put-downs among students, and the leaders that emerged—all students without disabilities—embraced negative behaviors (RJ-5-4). Although it was unclear to both teachers why the behaviors evolved in this way over time, Coteacher 1 feared that the negative attitudes of a few had spread to the entire group, and claimed that there were not enough corners to assign to the students who were acting out (FM-10-22).

In contrast, the classroom with the larger number of students behaved more like a family, with animated discussions taking place on a regular basis, and demonstrations of affection observed often. On one occasion, one of the students reminded Coteacher 1 that it was the birthday of another student, and before Coteacher 1 could react, the entire class burst into an impromptu rendition of the Happy Birthday song (RJ-5-4).

These classroom dynamics were totally unpredictable and unexpected, but they had an impact on student grouping. While at the beginning of the year it was common to see Coteacher 1 direct both classrooms to form groups after the lecture to complete in-class assignments, this practice ceased at mid-semester in the smaller classroom. Students

in this classroom were directed to work on their assignments individually, as cooperative grouping resulted in off-task behaviors (RJ-9-1).

Relationships, whether teacher-teacher, teacher-student, or student-student, were at the heart of instruction (refer to Figure 1). Although the dynamics of each classroom were different, both of the coteachers consistently displayed a genuine affection and concern for students, as well as respect and consideration for each other (RJ-9-2; C1-I-6; C2-I-5).

Theme 5: Differentiated Instruction

Theoretically, the primary reason for cotaught classrooms is for all students to take advantage of the differentiated grade-level instruction that results from having both a highly qualified content teacher and a highly qualified special education teacher coplan and codeliver instruction. In addition, under this arrangement, students with IEPs are able to receive the specialized instruction that is required by the Individuals with Disabilities Education Improvement Act of 2004 (IDEA 2004) by teachers trained to meet their individualized needs. Yet, observations of the cotaught classroom during the first semester of its implementation revealed little differentiation or individualization (FM-10-22-1; RJ-10-2; RJ-12-2). (Refer to Figure 1.)

Coteacher 1 discussed the fact that time prevented her from practicing the teaching behaviors that she thought were effective for all teachers:

> Really, a lot of the coteaching methods are best practices for all teachers; it's just a matter of having the time to do them. Making sure you're teaching in a variety of ways–different methods–not just lecture,

> not just hands-on, but doing both, working in visuals, explaining things in different ways, using a variety of vocabulary. I've been really self-conscious about that this year, making sure that any time I use a word, that I use like two other words to identify the meaning of it. I've been writing a lot more things on the board, trying to give them more processing time. And I think all of that is what you should be doing as a solo teacher. It's not just the special ed kids who need the extra time, who need that wait time; there's a lot more out there, and they're like, "Wait, what?" (C1-I-2, 3).

The researcher observed Coteacher 1 distributing copies of *cloze notes*—notes that had partially filled in—to the students before her lecture on a few occasions. The researcher had modeled this strategy during training, and asked about its success during one facilitation meeting. Coteacher 1 explained that she had used cloze notes in her solo taught classes, and that all students liked using them. She added that the strategy created management problems, however, as students who were quick studies hastily filled in the blanks and then put their heads down on their desks during the lecture. She would then have to approach them during her lecture and ask them to sit up (FM-10-15-2).

On one occasion an impromptu game of Pictionary began after students had completed their seatwork. The students divided themselves into two teams, and Coteacher 1 whispered a word to each student as he or she attempted to draw the concept on the board and encouraged team members to guess the word (O-10-17). One student, who had recalled similar games in previous classes with Coteacher 1, asked to play the

game again later in the semester. He commented, “People learn more with Pictionary. We’re just writing it down; we’re not thinking about it,” in reference to the vocabulary sheets that the class was working on. Coteacher 1 responded, “The more you see it, the better you’ll know it” (O-11, 12).

On other occasions, the researcher observed Coteacher 1 using explicit instruction during her lectures. She paused her lecture to tell students what to underline, what to highlight, and what specific vocabulary to remember (FM-10-15-2). The researcher did not observe this strategy used on a consistent basis, and she observed only Coteacher 1 using it. On these occasions, Coteacher 2 usually listened to the lecture along with the students.

The primary form of instruction, however, was whole class lecture, assisted by power point (RJ-10-2). Although the school had been equipped with up-to-date technology and internet access, for the most part, the power points consisted of outlines of the main ideas contained in the textbooks. Frequently, students worked cooperatively to complete an assignment after the lecture and one or both teachers would then circulate throughout the room, providing direction and answering questions (RJ-9-1).

The researcher met weekly with the coteachers to offer support, answer questions, and discuss the coteaching process. On many occasions, she brought articles, books, and worksheets that contained ideas on how to support students with learning disabilities in the general education classroom (A-2). One handout that both teachers appeared to appreciate was an adaptation of a chart contained in Murawski and Dieker’s (2004) article on coteaching tips. It contained a description of about fifteen teacher

actions during coteaching. For example, it suggested that while one teacher was lecturing, the other teacher could be modeling how to take notes or helping students to process lecture information.

On another occasion, the researcher brought the book entitled *The Learning Disability Intervention Manual* by McCarney and Wendling to give to the teachers. This easy-to-navigate book offers lists of interventions by specific behaviors. Most interventions are simple to implement, such as *extended time* or *frequent feedback*, but it is helpful to keep a chart of the students, the interventions tried, and the results of the interventions in order to monitor their success. The researcher suggested that Coteacher 2 develop such a chart to monitor specific interventions as she observed students, both during and after the lectures and provided her with a model (FM-10-8-1). While both teachers agreed that the ideas and suggestions were good ones, the researcher did not observe that either teacher documented the results of any specific interventions.

During one of the facilitation meetings in late October, she asked the teachers if class work was being differentiated, as she had seen little evidence of differentiation in her observations. They admitted that there had been little time for planning due to other demands, so planning was done, if at all, on the spur of the moment (C1-I-2). Because Coteacher 1, the general education teacher, taught U.S. History by herself during the first period of each day, she generally used the same lesson plans for the next two periods, which were cotaught (C1-I-6). For the most part, Coteacher 1 delivered the lesson in a whole class lecture format, while Coteacher 2 took attendance and listened to the lecture along with the rest of the class. Coteacher 2 always was available to assist students while

they completed in-class assignments and circulated the classroom frequently after Coteacher 1 had delivered the lesson. While this type of support complied with such accommodations as *simplified directions* and *immediate feedback* that were contained in the files of students with learning disabilities, there was little actual differentiation of instruction. Despite their training and weekly facilitation meetings with the researcher, the coteachers did not enact coteaching as planned in training sessions at the beginning of the semester.

Believing that the lack of instructional differentiation might in part be due to a lack of specific skill sets, the researcher suggested that she and Coteacher 2 attend some training sessions at the education service center, which was about a 20-minute drive from North Texas High School. After obtaining permission from the principal to attend three training sessions, the researcher shared the schedule of training sessions with Coteacher 2 (RJ-4-3). Together, they selected three training sessions that they believed would enhance the instruction in the classroom. Two of the all-day sessions involved technology, and one involved differentiating instruction for the high school social studies classroom (A-3). As the administration would have had to hire a substitute teacher for the days of training if both teachers had attended, Coteacher 1 agreed to stay in the classroom while Coteacher 2 attended the training. The researcher, by attending the training with Coteacher 2, could support her in her efforts at providing differentiated instruction after the training, as well as share information with Coteacher 1 upon their return from the service center.

The first session was entitled *iPodding without an iPod***.** It involved learning how to create and publish podcasts with the use of selected computer software. The researcher thought that using such podcasts would appeal to all students because of the new technology, and would be especially helpful to students who needed oral reinforcement of concepts. As many students were technologically competent, the researcher suggested that students, themselves, could eventually create podcasts and post them for their peers. These idealistic notions were quickly extinguished, however, soon after training began. Both Coteacher 2 and the researcher thought the "process was a little overwhelming," as nothing about the course was intuitive for two people with no background in creating podcasts. The researcher commented to Coteacher 2 at the end of the session to "remember these feelings of frustration" as most students with learning disabilities probably experience the same feelings on a regular basis (RJ-9-4). Coteacher 2 summarized the training by remarking that, "It would take a lot of time to get anything organized for the classroom" using the methods that were presented (RJ-9-4).

The next workshop that the researcher and Coteacher 2 attended was entitled *Instructional Strategies for Students with IEPs in the Secondary Social Studies Classroom*. Although Coteacher 2 was excited about the number of ideas that were presented for secondary social studies classroom teachers and had discussed with Coteacher 1 the idea of creating a word wall to enhance student vocabulary development (FM-11-5), the researcher saw little subsequent evidence of a change in delivery or differentiation in the cotaught classroom.

The reasons for this lack of change appeared to be related to time and to some extent, technology skills and access. During the facilitation meeting following the workshop, Coteacher 2 shared a test review that Coteacher 1 prepared for the classroom. It was several pages long and in 10-point font. There were many formats, including true/false, multiple choice, short answer, and fill in the blank. Each of these was in a section followed by an answer bank consisting of 12-20 answers displayed in a two-column array. The researcher asked Coteacher 2 if she could re-format the test review to provide more white space, a larger font, and shorter, individual sections, as it appeared overwhelming to complete. Coteacher 2 explained that she did not have access to the test generator that Coteacher 1 had used to develop the review, so would not be able to adapt the paperwork to meet the needs of students with learning disabilities. She chose, instead, to write the key code on the board as Coteacher 1 read the review questions and answers. Although the researcher commended Coteacher 2 for taking the initiative to write on the board while Coteacher 1 spoke, Coteacher 2 commented that she thought students "were not listening to [Coteacher 1] as much as copying down the answers as she wrote them" (FM-11-5). The researcher noted that both teachers seemed to be "flying by the seat of their pants, and there was little time for extra adjustment" (FM-11-5).

The last workshop, which was held one week later, was entitled *Digital Storytelling*. This workshop involved using software already installed with Microsoft Office to create a visual and auditory story using either movies or still pictures. The researcher thought that this type of technology would be especially useful for students

with learning disabilities to demonstrate mastery of a subject. Both the researcher and Coteacher 2 found the process easy to implement, and after the struggles of the first session, felt more competent with the technology. Still, the process was new, and although Coteacher 2 remained positive throughout the session, she disengaged from the hands-on part of the workshop, claiming that she was too slow to keep up. Instead, she elected to "point and make suggestions" while the researcher did the hands-on work [RJ-11-1].

While there was little to share after the first training session involving technology, Coteacher 2 and the researcher shared their new knowledge and skills with Coteacher 1 after the second training session, and they brainstormed ways in which to incorporate digital storytelling into the next lessons. Coteacher 1 and Coteacher 2 both agreed that vocabulary was one of the biggest hurdles for students, and Coteacher 2 and the researcher agreed to work on a lesson that incorporated vocabulary from the upcoming chapters of study. Coteacher 2 then discovered that she could not access the software program from her computer. She put in a work order to the technology department, but there was no way of knowing how long it would take to fix the problem [RJ-11-4]. Coteacher 2 did not follow up with the researcher regarding the outcome of the work order.

The researcher decided to work on the digital story from her own computer, and worked from the close of school until after 9:00 p.m. to create a story that incorporated seven vocabulary words (RJ-11-4). Although the process was not complex or difficult, it was time-consuming to locate and download pictures that would appropriately depict the

vocabulary. The end result was a five-minute story, which Coteacher 1 incorporated into her lessons the following week while the researcher observed the classes (RJ-12-1).

After the students watched the digital story, Coteacher 1 distributed a quiz to the students. It consisted of a matching exercise, with the vocabulary words on one side of the paper, and the definitions on the other. She played the digital story again while the students completed the quiz. Following the vocabulary quiz, the students were given a written assignment from the book to complete, without the use of technological aids (RJ-12-1). Neither teacher used the ideas from the digital storytelling workshop again during the remainder of the semester. For the remaining six weeks of the semester, Coteacher 1 presented the lesson from a power point, lectured to the whole class, and provided opportunities for cooperative grouping during some of the post-lecture exercises, while Coteacher 2 assisted students with their in-class assignments (RJ-14-1). Although the researcher added formal skills training to the support system of the cotaught classroom to provide the most optimal setting possible, the coteachers still did not appear to embrace the coteaching model as it had been described in the literature.

It appeared that the coteachers had settled into a routine with which they were both comfortable. Coteacher 1, as the general education teacher responsible for the TAKS, was reluctant to implement too many changes, as students at North Texas High School had historically performed well on the TAKS in social studies. Coteacher 2, as the special education teacher new to the general education classroom, was reluctant to implement changes, as she was unfamiliar with the pacing and structure that was required in this setting. She was, however, familiar with four of the five students with

learning disabilities, as she had taught them in previous years in her resource classroom. Thus, she made regular attempts to provide the one-on-one assistance that she had previously provided to these students in the resource setting. Both teachers agreed that to implement real change, coteaching training would need to be implemented a year in advance so that teachers would have the opportunity to edit and modify their lessons as they taught them in preparation for the next year's coteaching lessons (MC). In addition, Coteacher 2 believed that to incorporate technology into the lessons, she would need more support than a one-time training session. She would need to have a knowledgeable technology resource person available to her until she felt comfortable using the new techniques (RJ-11-4).

Theme 6: Ambiguity over Coteacher Roles

The two coteachers in this study volunteered for the coteaching positions after being approached by the principal. It was evident that there was confusion over their roles from the outset. Coteacher 1, the general education teacher explained, "I'm not a special ed teacher, but they said that I wouldn't need to do anything differently, that that's why there was going to be another teacher" (C1-I-1). It was not until she had formal training on coteaching that she learned that much more would be expected from her. "I realized that it wasn't just teacher and helper, that we needed to work more closely together, that we were going to be there for all [students]" (C1-I-1).

Yet, the formal training also added another layer of uncertainty to the clarification of roles. This was demonstrated in an exercise designed to differentiate the general education teacher roles, special education teacher roles, and the shared roles of a

cotaught classroom. The researcher printed the various traditional responsibilities of each teacher on tag board, and asked the teachers to sort them into the three categories. For example, the card marked *Have expertise in adapting instruction, curriculum, and materials* would be placed under the *Special Educator* heading, and the card marked *Have specific expertise in the content area* would be placed in the *General Educator* heading, while the card marked *Report student progress to the parents* would be placed under the *Both Educators* heading. After the teachers were through sorting, they found that they had placed most of the cards under the Both Educators heading. They rationalized that all that all responsibilities should truly be shared in a cotaught classroom, with Coteacher 1, the general education teacher, explaining why she placed most of the cards pertaining to special education in the shared pile, "Well, I have to know about that, too, because it's the law" (RJ-2-1). Even after a discussion regarding who would have the most control over the tasks, the teachers still placed many of the cards in the Both Educators pile, indicating that their initial belief in shared responsibilities had not changed.

Although coteaching was presented in training as a partnership of equals, one problem that presented itself on the first day of training, and continued throughout the semester, was that of the perception of parity. When the researcher began the training with the coteachers at the beginning of the semester, Coteacher 2, the special education teacher, remarked to Coteacher 1, the general education teacher, "I'm glad you are the teacher of record" (RJ-1-5).

An exchange between two students at the end of the semester illustrated that the role ambiguity transferred to the students in the cotaught classroom, as well. Marvin, a student with learning disabilities, declared in an outburst that he hated all teachers, even Coteacher 1. When Coteacher 2, the special education teacher, responded, "You don't hate me," Marvin responded, "You're not a teacher; you're a helper." Another student in the classroom chimed in, "She's a teacher, dude" (FM-12-17-1).

The behaviors of both teachers suggested that they were most comfortable within their traditional roles. From the beginning, Coteacher 1 took responsibility for the lesson planning and delivery, and Coteacher 2 providing input regarding the needs of the special education students. Coteacher 2, the special education teacher explained, "She [Coteacher 1] will lead out in the planning as far as the material . . . and then usually I'll say, 'OK, but my kids . . . that wouldn't work for them'" (C2-I-5-6).

In a meeting with the researcher the week after Thanksgiving, both teachers confirmed that their roles had developed into *decision maker* and *contributor*, for the classrooms, but with Coteacher 2 being the decision maker for the students in special education (FM-11-26-20). Interviews with the teachers a month later yielded more ambiguity, however. When asked which model of coteaching they had used in the classroom over the course of the semester, each responded differently. Coteacher 2, the special education teacher, said that although they had used all of the delivery options, *team teaching* was the one used most often and the one that worked best in their situation. "I take role, she [referring to Coteacher 1] does the question of the day, and we take it from there" (C2-I-4).

In response to the same question about the use of coteaching models, Coteacher 1 replied that the most prevalent delivery model had been "one float and one teach" which was her version of the one teach, one assist model, as Coteacher 2, the special education teacher, frequently floated around the room during and after the lectures given by Coteacher 1 (C1-I-1).

Coteacher 1 provided a possible explanation for the ambiguity as she expressed her belief that their roles were part of an evolutionary process: "We both have different roles and responsibilities, but we're trying to still figure out what they're going to be and how we're going to implement them" (C1-I-4).

Another reason for the role ambiguity may have been rooted in the principal's use of the term coteaching. At the beginning of the school year, the principal paired several special education teachers with general education teachers. The traditional resource classes were dwindling; in their place were sections of general education classes staffed by two teachers, one whose job was to deliver instruction, and one whose job was to provide support to any student who needed it. The broad term that was used in the school to describe these pairings was coteaching.

John, another special education teacher who used this model with two of the students in the study in another classroom, described it this way: "When she's (the general education content teacher) delivering a lesson, I will go around . . . I'll come to them . . . they raise their hand or look over and motion to me to come see 'em and square 'em away with whatever their needs are." When asked if what he did was inclusion

teaching, he responded, "I believe the school calls it coteaching. I just go in there and work with [the kids]" (J-I-10-11).

Team teaching is a coteaching model that requires both teachers to teach the class in tandem. It requires a great deal of planning to ensure that both teachers are familiar with the lesson content, while incorporating the strategies and/or accommodations that will enhance the lesson for students with IEPs. During a facilitation meeting in late October, Coteacher 2 offered an insight into her definition of team teaching, which she believed was the most prevalent form of coteaching that they had used in the classroom. During one class the researcher observed the coteachers "talking from one set of [power point] slides" and taking turns explaining the material (RJ-10-2). At the facilitation meeting, the researcher commented on the team teaching approach of their coteaching, observing that the teachers had begun presenting the lecture in tandem. Coteacher 2 said that they had done that kind of teaming before when the researcher had not been there to observe. The researcher then explained that although she had seen Coteacher 2 interject comments before, it had not been in the context of a coplanned lesson. Coteacher 2 then responded that the lesson the researcher had observed was not planned and that her comments during the lesson were spontaneous (RJ-10-3). Coteacher 2 apparently assumed that any time she commented during Coteacher 1's lecture, team teaching was taking place.

Coteacher 1 thought that a solution to the role ambiguity problem would be to provide "more defined roles" for the teachers. With more explicit examples of how "teacher one would do this, and teacher two would do that" within a given lesson, she

thought that teachers would have clearer expectations (FM-11-26-1). Both teachers thought that roles could be better defined by training and planning a year in advance. With an in-depth understanding of coteaching, each teacher could then reflect on how to teach the concept or unit with two people, making notes on how to change the delivery from a solo taught to a cotaught system. Then they could "have the summer to think" and to get together regarding lesson planning (MC). Although year-in-advance-planning had not been cited in the literature as a prerequisite to successful coteaching, it appeared that the ability to reflect and plan had been a missing component for the coteachers in this study. Despite the training and administrative support, the personal compatibility, and their joint planning periods, the coteachers in this study believed that they could not replicate the cotaught classroom as it was presented in the literature.

The Storyline

The above six themes came together in a storyline, which is illustrated in Figure 1. The central phenomenon that emerged from the study was the teacher response to students with learning disabilities in the general education context. This placement resulted from NCLB. As schools became accountable for the academic performance of all students, including those in special education, they placed more students with learning disabilities in the general education setting. Students who had never been accountable to high-stakes testing now were expected to participate and pass, despite their disabilities. The high expectations that arose from this placement resulted in varied reactions from the teachers of students with learning disabilities in this setting.

One of the strategies that had been introduced in the literature to enable students with learning disabilities to meet the challenges expected of them was coteaching. Coteaching provided grade level content and individualized instruction to students with learning disabilities and was adopted by North Texas High School to meet the needs of these students. Coteaching, thus, was the strategy that resulted from the high expectations that had arisen as a result of NCLB.

The differentiated instruction that was expected from coteaching as a result of two specialists coplanning classroom lessons was mediated by the context of the study and a complex set of variables that involved the teachers, students, and the educational systems at play. For example, the coteachers' experiences, philosophies, relationships with each other, and knowledge of content and strategies were affected by—as well as had a direct affect upon—their relationships with students, students' backgrounds, and classroom dynamics. Affecting all instructional decisions was the availability of time and space, which was embedded within the school culture and the special education culture. Many of these mediating conditions were not fixed, but changed almost daily with the inevitable alterations of moods, behaviors, and energy levels of students and teachers. In addition, each teacher and student brought a unique set of beliefs and philosophies into the classroom. Thus, these intervening conditions affected individual classrooms, and at the same time, they mediated the high expectations that co-existed with the mandates of NCLB.

The unique dynamics that coteaching produced yielded unique outcomes, some of which were intended and some of which were unintended. For example, differentiated

instruction was seldom observed. As change in the delivery system is one of the fundamental differences that distinguishes coteaching from solo teaching, this was a surprising outcome. Yet, the academic achievement of students with learning disabilities appeared to increase substantially, as was expected.

Pre- and Post-testing

Pre- and post-tests were conducted to supplement the qualitative analysis just discussed. The pre-test for the 11th grade U.S. History cotaught classes was given during the second week of the fall semester of school, when nearly all schedule changes had been completed. Coteacher 1, the general education teacher, had devised a test from a textbook test generator, which was based on the material she planned to cover for the semester. It consisted of a 50-question multiple choice test, and students filled in their answers using a Scantron sheet. No students received accommodations during the pre-test, as documentation of accommodations for the special education students had not yet been distributed by the special education office.

The post-test was administered in December and served as the semester final examination. It consisted of a 65-question, multiple choice test which Coteacher 1 had devised from the same test generator as she had used for the pre-test, and it was delivered in the same format as the pre-test. As only some of the pre-test questions were included, and additional questions were added to the post-test, the researcher reviewed both versions of the test and then selected the 25 questions that were common to both. Some of the special education students received accommodations on this test which were outlined in their IEPs, such as reading the test aloud and allowing extra time to answer

questions. Coteacher 2 also made accommodations in addition to those required on the IEP, such as talking aloud through the test. As these accommodations were provided on the post-test but not the pre-test, the results of these two tests can not be directly compared, but they are presented in Table 9 as supplemental information.

Coteacher 1 agreed to do a subsequent post-test in the spring, after the TAKS, and before the final examination, in which the conditions were matched to those of the pre-test. She stated that an unaccommodated test session could be used as a review before the final exam (personal communication, May 27, 2008). During the final exam period, however, Coteacher 1 decided that as the students had been difficult to manage during the last two weeks of the year, she needed to abandon the idea of an additional post-test (MC). As the data in the pre- and post-test comparisons contained in Table 9 were not able to be compared due to the different environmental conditions under which they were conducted, no further statistical analysis was performed.

Table 9. Pre-test and post-test scores of students with learning disabilities

	Pre-test mean	**Pre-test Range**	**Post-test mean**	**Post-test Range**	**Mean test score gain**
Students with LDs n = 5	24.0	64	82.4	44	58.4
Students without LDs n = 35	47.8	52	78.1	48	30.3

Note: LDs = Learning disabilities

The scores of one of the students in the learning disability group were outliers. Thomas, the student whose favorite subject was history, scored a 72 on the pre-test, the second highest score of all students in the cotaught classes. Other scores of the students with learning disabilities were 8, 8, 16, and 16. Thomas' score of 96 on the post-test tied with four other students in the cotaught classes, who were not students receiving special education services, as the highest score. The students with learning disabilities gained far more than those without (a 28.1 point difference between the means), but as accommodations were provided on the post-test that were not provided on the pre-test, these results are not an accurate measure of growth. The accommodations of reading the test aloud, discussing strategies for selecting the correct answer, and providing extra time to those who needed it, all constituted threats to the validity of the pre-post test results.

Classroom Grades

Table 10 contains the classroom grades of the students with learning disabilities and the students without learning disabilities in the cotaught classrooms. A statistical analysis was not conducted to compare these two groups as the post-test was given in a different environment with additional supports from the classroom teacher that were not given for the pre-test, making a comparison of these two scores invalid. Although Thomas had one of the highest 6-week test averages of the students in both sections of U.S. History, his daily grades were among the worst. Daily grades were comprised of a combination of approximately 30 in-class assignments, such as answers to daily warm-up exercises, vocabulary sheets, crossword puzzles, and chapter quizzes. There were

several assignments that Thomas never turned in, and the zeroes that he earned as a result affected his daily grade average. The researcher observed when daily work was requested for grading and noticed that students usually had the opportunity to ask for assistance from peers before turning in their work. Warm-ups, for example, were discussed in class before Coteacher 1 asked that students turn them in for a grade. Students nearly always had the opportunity to correct their answers before turning in their papers; however, the students with learning disabilities, with the exception of Charlie, did not appear to take advantage of this opportunity.

Chapter test averages were based on ten grades. These consisted of chapter tests given at the conclusion of each chapter, as well as an end-of-semester project. The six-week tests were a requirement of the school, and students took exams in each of their classes every six weeks. Only two six-week tests were given in the observed classes, however, and these were averaged to provide the six-week test average. The researcher did not inquire as to the reason for the elimination of the third six-week test.

Table 10. Classroom grades

	Daily Grade Averages	**Chapter Test Averages***	**6-week Test Averages***	**Semester Averages**
Students without Disabilities (n=41)	92	82	86	84
BJ	65	77	63	69.49
Charlie	84	84	85	84.61
Natalie	77	41	71	62.49
Thomas	54	77	94	75.26
Marvin	74	71	67	73.60

* Coteacher 2 assisted students who tested in her room. Both students with and without disabilities were included in this group.

Although the teachers did not keep records regarding which students received the testing accommodations provided by Coteacher 2, it is reasonable to assume that most of the students with learning disabilities received these accommodations at least part of the time. Even with this extra assistance, however, the students with learning disabilities, with the exception of Charlie, who earned Bs in all areas of assessment, and Thomas, who earned As on his six-week tests, scored consistently lower than the students without disabilities in each of the two testing categories.

Semester averages consisted of the weighted averages of all grades. Two students, Natalie and BJ, also received an "adjustment" by Coteacher 1 in the final averaging. However, even with this extra assistance, these two students with learning disabilities failed the class for the semester. Neither teacher provided an explanation for their failure, but the reading levels and attendance rates of these two students were among the lowest in the group. In addition, Natalie had a dual diagnosis of emotionally disturbed/learning disabled which may have contributed to her failure. In contrast to Natalie and BJ, Marvin, with the lowest reading level in the class but with average attendance, earned a passing grade for the semester.

Classroom Observations

Teacher Observations

Classroom observations were conducted using the Stallings Observation System to supplement the qualitative analysis in this study. A description of the classroom routine follows to provide the context in which the observations took place.

Classroom routine

The class typically began with a warm-up question related to the lesson, then proceeded to the question of the day, which was usually related to current events. Coteacher 1 wrote these questions on the board at the beginning of the day, and students were expected to work on the answers during the first five to ten minutes of the class. Sometimes Coteacher 1 asked students to turn in their responses for a daily grade. Students were usually able to discuss answers with each other before the papers were taken up and most earned a grade of 100 on these exercises.

While these questions were discussed, Coteacher 2 usually took attendance. She helped collect papers when Coteacher 1 asked students to turn in their warm-up activities. Coteacher 1 generally began the lesson with a lecture accompanied by a power point presentation. The power point contained the main ideas of the lecture organized in outline format. While Coteacher 1 lectured, Coteacher 2 generally either stood at one side of the room or sat in one of the desks and listened along with the students.

After the lecture, students were usually given written exercises to complete. These were frequently crossword puzzles made from vocabulary words, fill-in-the-blank questions based on the lecture material, or outlines of the chapter to complete. The

transition from lecture to seat work usually involved a considerable amount of time in both passing out papers and in explaining the assignments.

In addition to lectures, there were also frequent review sessions. Typically, Coteacher 1 handed out review sheets, with questions similar to those on the test, and read each aloud, asking students for answers. Although many students were eager to provide answers, students with learning disabilities rarely participated in these oral reviews. Thomas was the only exception. He not only participated, but sometimes contributed information that he had acquired from his outside reading (O-12-3). The review sessions were fast-paced, and students without learning disabilities frequently asked Coteacher 1 to repeat herself. At times, some of the students with learning disabilities failed to remain engaged, and put their heads down on their desks (O-11-26).

Data collection

The Stallings Observation System (SOS) was used to record teacher and student actions over the course of the semester. As this system can analyze the actions of only one teacher per observation, the researcher labeled Coteacher 1 as the principal teacher and Coteacher 2 as a second teaching adult for purposes of inputting into the database. To conduct an analysis of the activities of both teachers, the researcher printed the snapshot observations of the classroom, then entered the information of both Coteacher 1 and Coteacher 2 into a Microsoft Excel program. Generally, four to five snapshots were taken during the course of a class period. Activities in the snapshots were entered as a percentage of the total class time. For example, if five snapshots were taken in one class period, and Coteacher 1 lectured during four of the five snapshots, the researcher entered

80% under Instruction for that day. If Coteacher 1 explained an assignment for the remaining snapshot, the researcher then entered 20% under Making Assignments for that day. She repeated the same data entry procedures for Coteacher 2. Their activities were then charted, to illustrate the amount of time they spent in various activities during the course of the semester. To support this data entry, classroom activities were recorded in follow-up notes after each observation. On rare occasions, Coteacher 2 left the room to make copies or to attend meetings. In these instances there was no input regarding Coteacher 2's activities.

The researcher conducted an analysis of coteacher activities from the data collected from the SOS. The three categories in which the teachers spent most of their time were instruction, classroom management, and making assignments, as can be seen in Figures 2 and 3. These teacher behaviors were not statistically compared as there was considerable bounce in the data across observations, making a comparison of their behaviors within these three areas invalid.

Figure 2. Coteacher activities, period 2

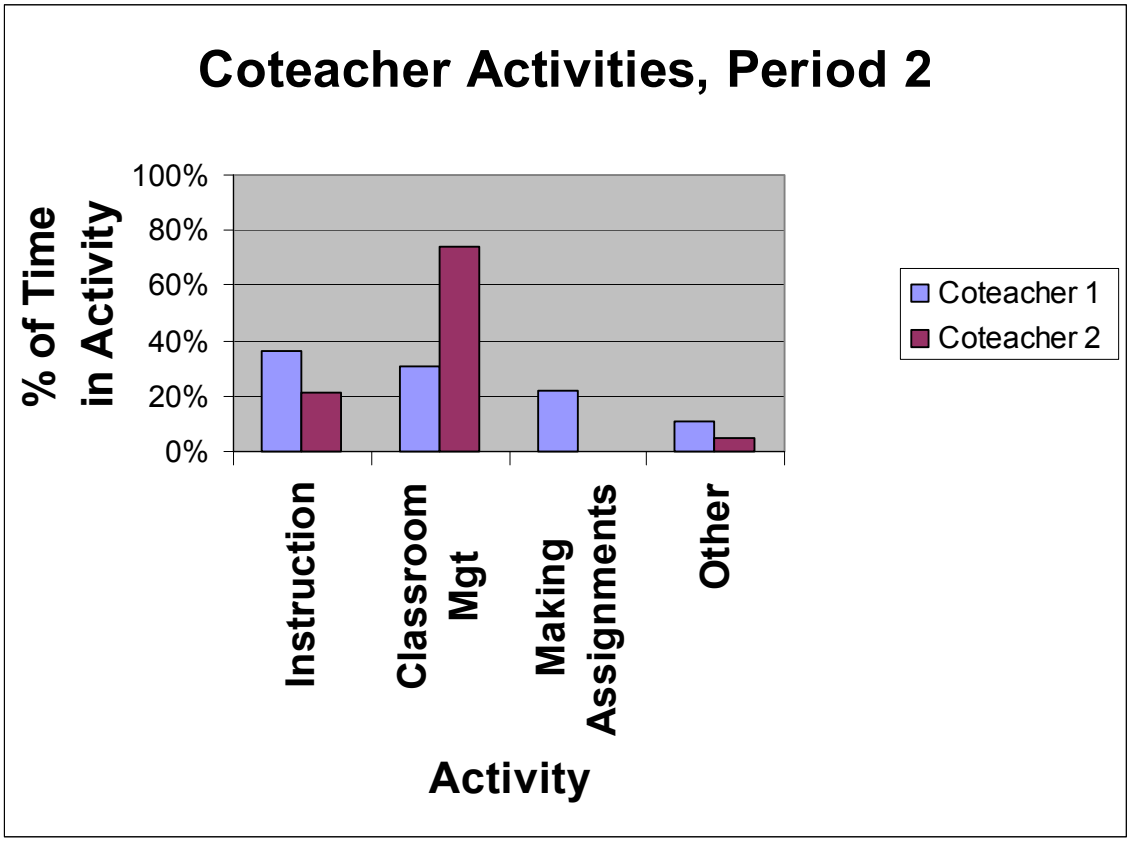
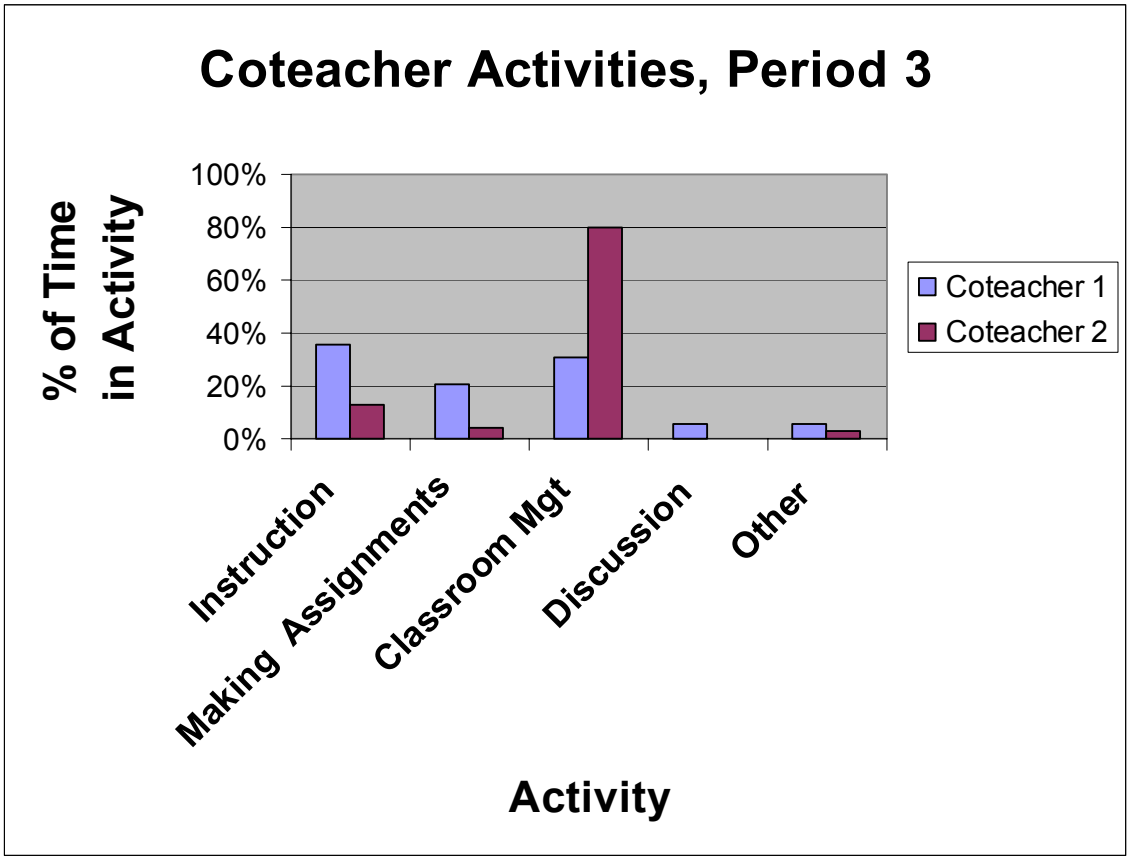


Figure 3. Coteacher activities, period 3



Instruction included whole class lectures, one-on-one and small group teaching sessions, and feedback to students. Classroom management included such activities as passing out papers, changing activities, putting away materials, and preparing to leave the classroom. This category also included classroom organizational activities such as taking attendance, paper correcting, and preparing for classroom instruction. As there was not a code in the Stalling Observation System to use for recording when a second teacher observed or listened to another teacher's lectures, the researcher input the time that Coteacher 2 spent on these activities under classroom management, as well. The last category, *Making Assignments*, included those activities that involved one of the teachers explaining an assignment or an activity, the grading process used in the assignments, and any information that students needed to carry out the assignment. Clarification of behavior expectations was also part of this category. While Coteacher 1 spent the majority of her time with instructional activities, Coteacher 2 spent the majority of her time in classroom management activities. They each spent approximately 20% of their time in explaining assignments or grades. The teachers spent a smaller percentage of their time in discussion, in social interactions with students, and with discipline. Figures 2 and 3 illustrate the amount of time that each teacher spent in these categories in each of the cotaught classrooms during the semester. Again, change could not be assessed using trend lines. The considerable amount of bounce, or variability, in the data throughout the semester provided inconclusive results, making a trend analysis inappropriate.

The baseline, or Phase A, represented the time when both teachers were receiving coteaching training, but contained too few data points to establish a stable

baseline, as coteaching began soon after the commencement of the school year. Given the constraints of the natural school environment, however, there was no time available to observe the teachers together before the training intervention was implemented. The Period 2 classroom had a shorter baseline and fewer observations. This classroom was not observed as frequently as the Period 3 classroom due to changes in student enrollment. In addition, the researcher initially used the Period 2 classroom as her training classroom, and as she became familiar with the SOS system, some of the initial observations from this classroom were removed from the analysis.

Instructional activities

The amount of time each teacher spent in instruction is depicted in Figures 4, 5, 6, and 7. As there was a significant amount of bounce in the data, as well as unstable baseline data, only a visual interpretation of the data was appropriate. The wide dispersion of data caused the results to be inconclusive and a trend analysis could not be performed. Although some days contained more assignments and other days contained more lecture, there was not a significant change in classroom routine over the semester.

A visual analysis of Figure 6 shows a spike in the data toward the end of the semester. Coteacher 1 conducted more reviews in preparation for the semester exam during that time. In addition, she conducted a bell-to-bell review on the last day of observation. This intense review caused an increase in these teacher behaviors in the Period 3 data.

Although Coteacher 2 contributed to the lecture from time to time (O-10-17; O-10-31), her contributions to the lessons were few and only occurred if Coteacher 1 had another task to which to attend. The majority of time that Coteacher 2 spent in instruction was after Coteacher 1's lectures, when Coteacher 2 circulated the room to assist students with their seatwork. This routine did not change significantly over the course of the semester. Again, due to the unstable baseline data and the wide dispersion in the data across observations, a trend analysis was inappropriate. However, a visual inspection of the graphed data illustrates that Coteacher 2 spent no time in instructional activity of any kind during the last four observations of Period 2. This was most likely caused by the intense exam reviews conducted by Coteacher 1 during that time period.

Figure 4. Instructional time, coteacher 1, period 2

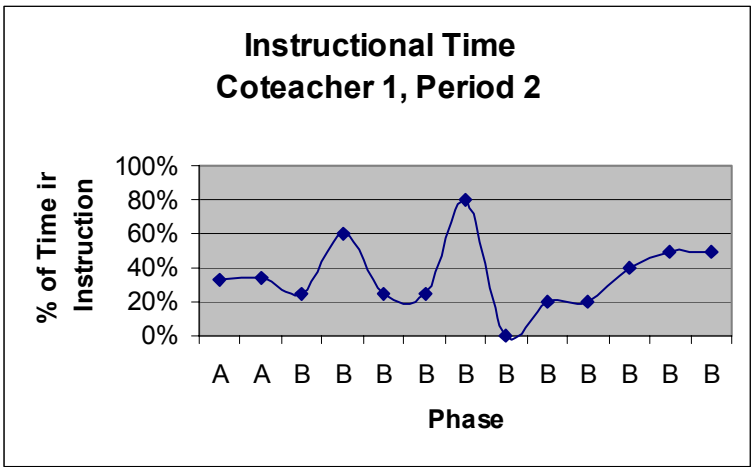


Figure 5. Instructional time, coteacher 2, period 2

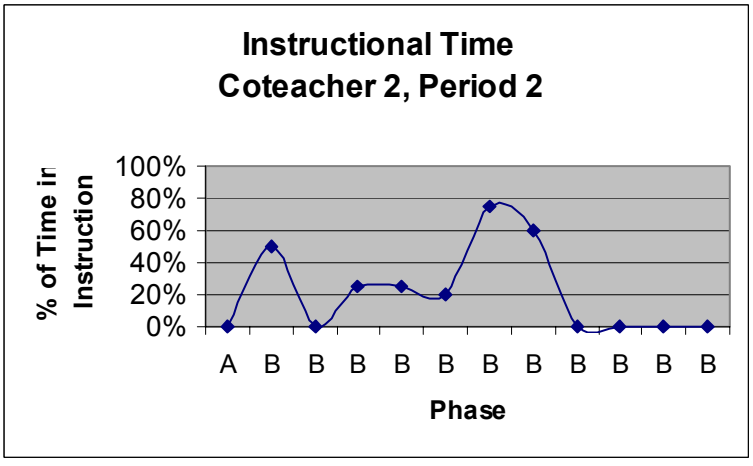


Figure 6. Instructional time, coteacher 1, period 3

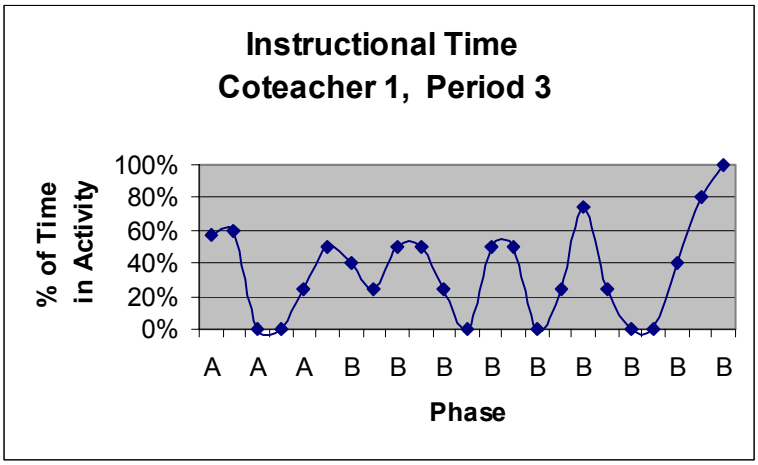
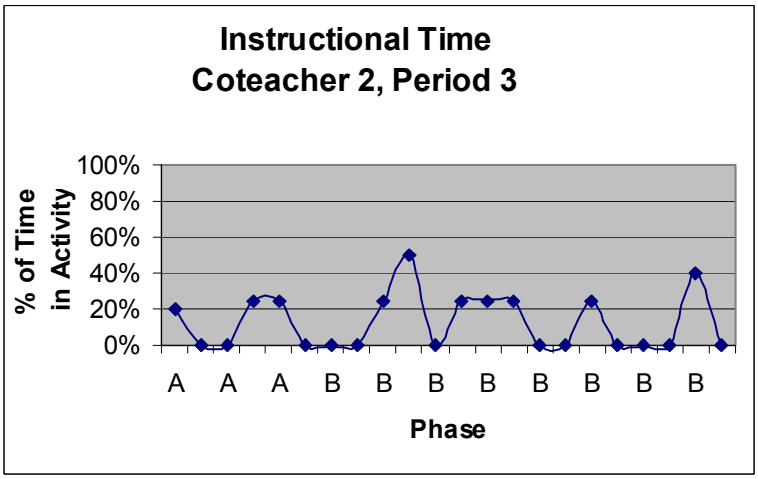


Figure 7. Instructional time, coteacher 2, period 3



Classroom management activities

The amount of time that each teacher spent in classroom management activities is shown in Figures 8, 9, 10, and 11. Again, as there was a significant amount of bounce in the graphed data, and a stable baseline had not been established, only a visual interpretation of the graphs was conducted. The wide dispersion of data meant that a trend line could not be drawn. A visual inspection revealed that Coteacher 2 spent nearly all of her time in classroom management activities toward the end of the semester. This phenomenon was most likely caused by the intense teaching and reviewing that Coteacher 1 was performing to prepare for the semester exam. During this activity, Coteacher 2 generally listened and observed, but did not actively instruct or assist.

Coteacher 2's classroom management time was erratic, as well, but as the semester progressed, she tended to spend less time contributing to Coteacher 1's lectures, and more time listening to them. This trend is evident from a visual inspection of the graphs in Figures 9 and 11. In addition, as Coteacher 2 became more proficient with the computerized attendance system, taking attendance became her sole responsibility.

Figure 8. Classroom management activities, coteacher 1, period 2

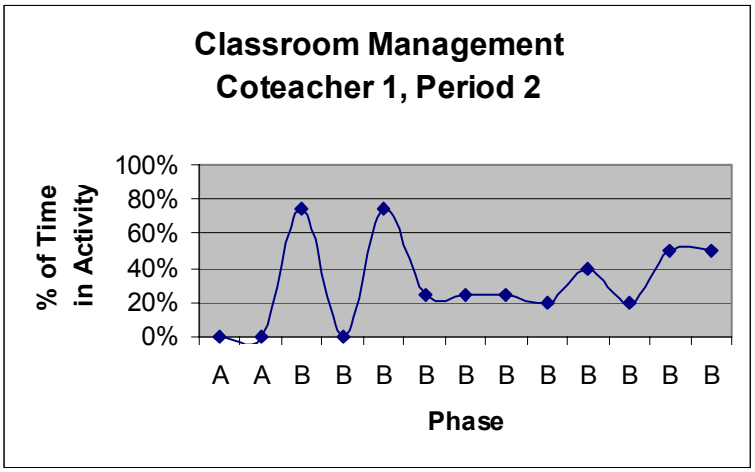


Figure 9. Classroom management activities, coteacher 2, period 2

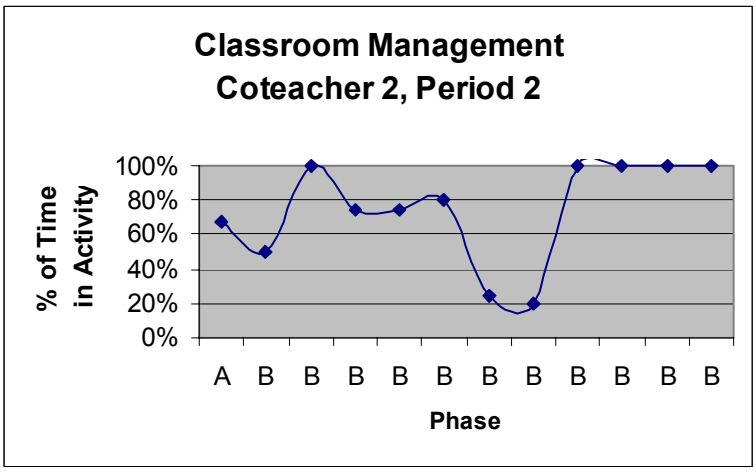


Figure 10. Classroom management activities, coteacher 1, period 3

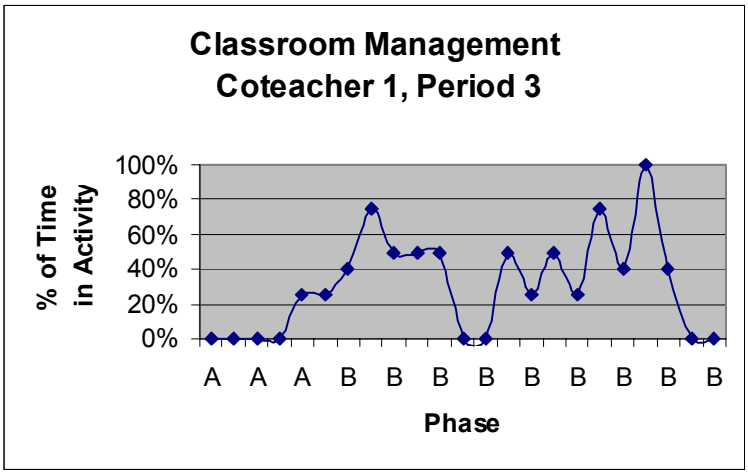
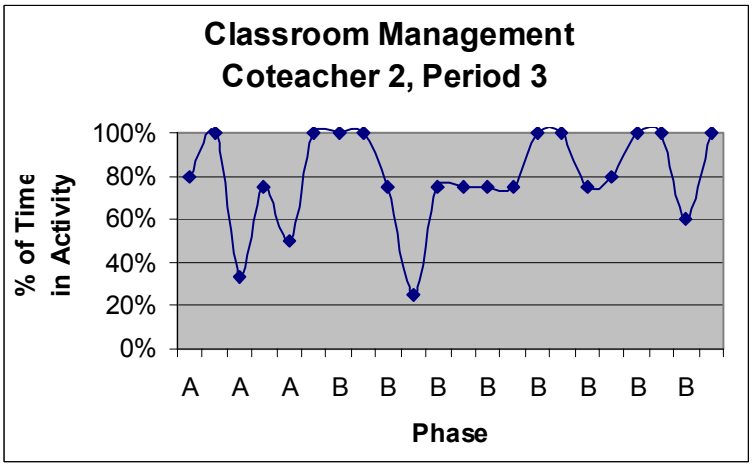


Figure 11. Classroom management activities, coteacher 2, period 3



The third category that reflected the most teacher activity was making assignments. There was no data for Coteacher 2 in this category for Period 2 and only two data points for Period 3. Coteacher 1 maintained the responsibility for explanation of assignments and grades. Once again, as there was a significant amount of bounce in the data across observations, only a visual interpretation of the graphs in Figures 12 and 13 was conducted.

A visual inspection revealed spikes in the data toward the beginning and middle of the semester. As this category included explanations of grades as well as assignments, there were instances when Coteacher 1 used this period to explain grades to individual students while the rest of the classroom was busy with seat work. She spent more time with this activity in Period 3, which was most likely due to the larger number of students in the class as well as the tendency for both teacher and students in this classroom to engage in conversation about grades.

The SOS provided other categories in which to record teacher activities, such as Discussion, Reading Aloud, and Social Interaction. Individual charts were not completed for all of these categories due to the small number of data points that were collected for them. Table 11 details the remaining categories and the number of data points in each category that was recorded for each teacher.

Figure 12. Making assignments, coteacher 1, period 2

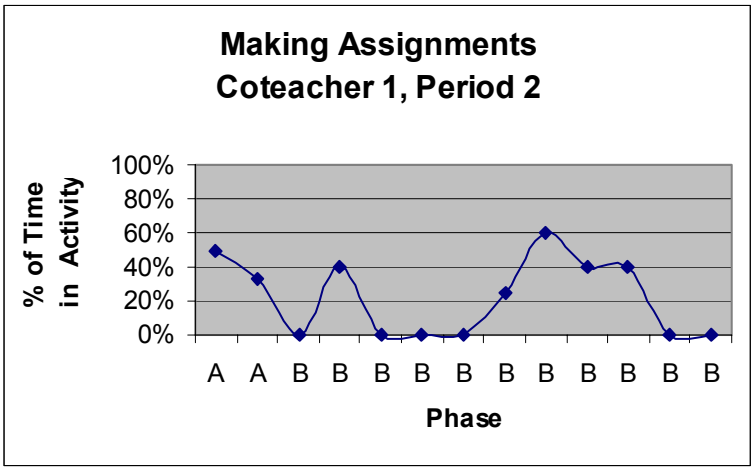


Figure 13. Making assignments, coteacher 1, period 3

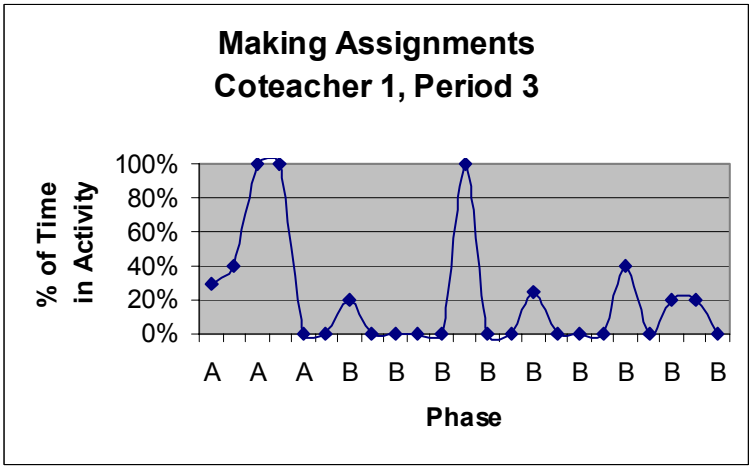


Table 11. Coteacher data points by category

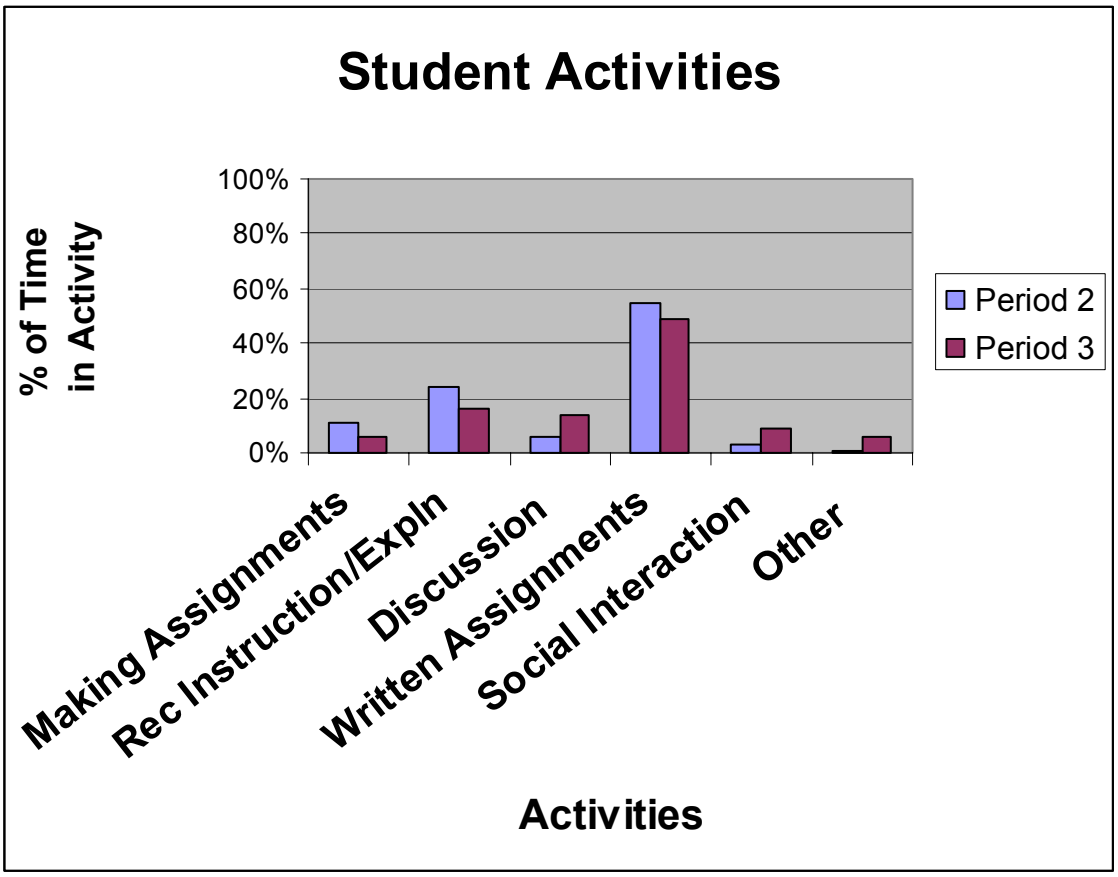
	Coteacher 1 # of Data Points		**Coteacher 2 # of Data Points**	
Activity	Period 2	Period 3	Period 2	Period 3
Discussion	3	6	0	1
Reading Aloud	0	1	1	1
Reading Silently	1	0	0	0
Social Interaction	1	2	0	1
Discipline	1	0	1	0

By the end of the semester, there appeared to have been few substantive changes in the instructional delivery system as a result of the implementation of coteaching Despite the inclusion of joint planning periods, administrative support, facilitation meetings, and specific teacher qualities as cited in the literature as advantageous to the cotaught classroom, coteaching did not transpire as intended. Coteacher 1 planned and delivered most of the lessons, while Coteacher 2 listened to the lectures, added comments from time to time, and assisted students with their seat work after the lectures. Both teachers corrected papers using the keys that Coteacher 1 had developed. Coteacher 1 generally handled discipline issues, while Coteacher 2 handled behavior management for the students with disabilities (e.g., O-12-18).

Student Observations

Student observations in the SOS were categorized as whole group (everyone involved), small group (2-5 students), or individual student involvement. On-task behavior was generally observed in whole group situations, while off-task behavior was generally observed in small group or single student situations. The researcher, therefore, categorized the observations of students into two groups: on-task behaviors and off-task behaviors. On-task behaviors consisted of involvement in academic or teacher-directed organizational tasks, such as written assignments, receiving instruction, and making assignments. These activities were recorded according to the percentage of time spent in each activity during a classroom period. Then they were graphed over the course of the semester. As small groups and individual students displayed off-task behaviors while the rest of the class displayed on-task behaviors, the number of incidences, rather than the percentage of time, was recorded for the off-task behaviors. Figure 14 illustrates the activities in which students spent their time during the semester in each classroom.

Figure 14. Student activities, periods 2 & 3



On-task behaviors

Students spent about half of their time involved with written assignments, generally note-taking during the lecture or seatwork that was assigned after the lecture. There was much more time spent in discussion in Period 3 (14%) than in Period 2 (6%), as seen in Figure 14, which was most likely due to the dynamics of the individual classrooms.

Activities associated with how assignments needed to be completed or the grades that resulted from them were coded under making assignments. More time was spent in this activity in Period 2 than Period 3, as seen in Figure 14, which was most likely due to the need to repeat instructions and follow up with assignments with this group.

Graphs that illustrate the four categories that occupied approximately 75% of the students' time during the coteaching classes are illustrated in Figures 15 through 18. As in the graphs that depicted the teachers' behaviors, there was considerable variability in the student behavior data, and trend analysis was not conducted.

Figure 15. Student written assignments, period 2

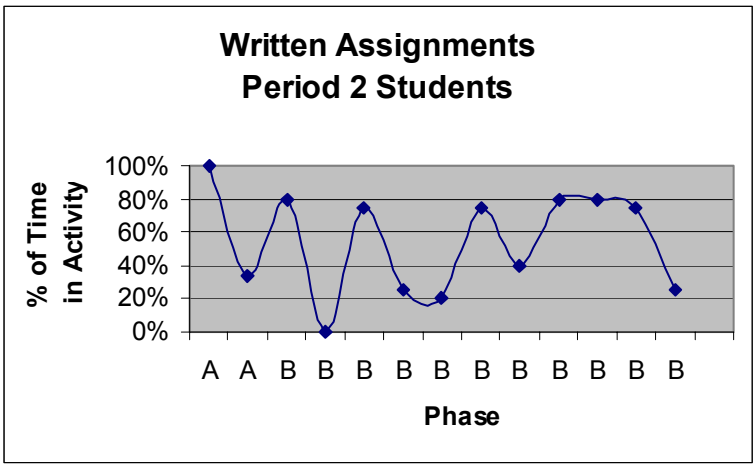
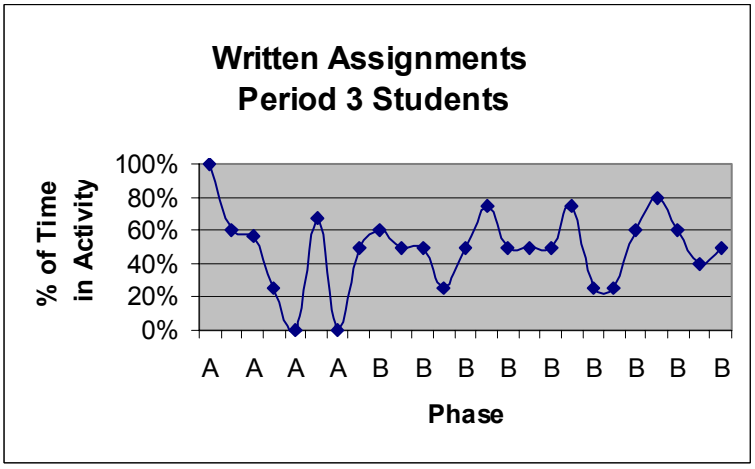


Figure 16. Student written assignments, period 3



Although approximately 50% of classroom time was spent in some kind of written assignment throughout the semester in both classrooms, a visual inspection of the data shows that there were days when no written assignments were conducted, and there were other days when 80% or more of class time was devoted to this activity. The most common written assignment was note-taking, which students were expected to do during classroom lectures. Other forms of writing activities took place after the lecture in various kinds of seat work activities that were designed to reinforce the ideas presented in the lecture.

Figures 17 and 18 illustrate the amount of time students received instruction in the cotaught classrooms. When students received instruction or explanation, they were either listening to the lecture as a group, or they were obtaining clarification and assistance in small groups or one-on-one. The clarification and assistance usually took place when either one or both teachers circulated the classroom after the lecture to ensure that everyone understood the assignment and was on task. On days when students did not receive instruction, they were engaged in written assignments, such as note-taking, in active discussion, or receiving explanation on how to complete a task or project. In addition, it should be noted that the data points were only snapshots. Therefore, instruction could have taken place at other times during the class period when a snapshot was not taken. As in the other graphs, there was a significant amount of bounce in the data, and the trend line was not calculated.

Figure 17. Students receiving instruction/explanation, period 2

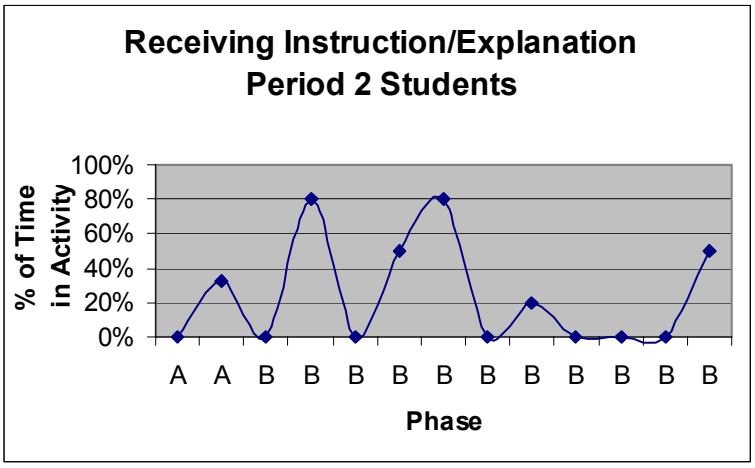


Figure 18. Students receiving instruction/explanation, period 3

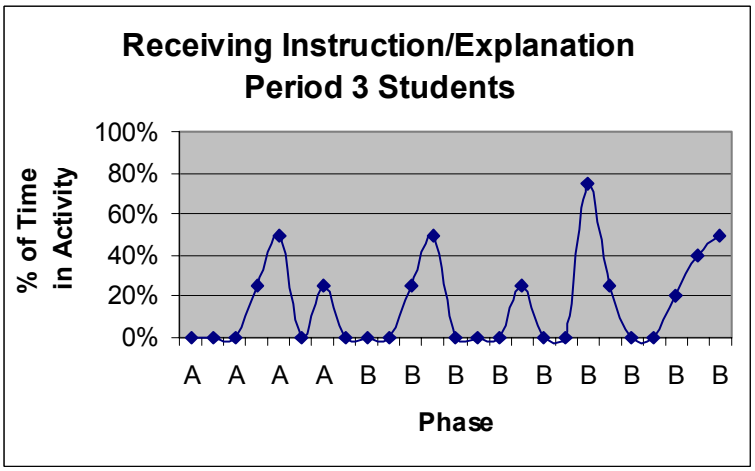


Figure 19. Student discussion, period 3

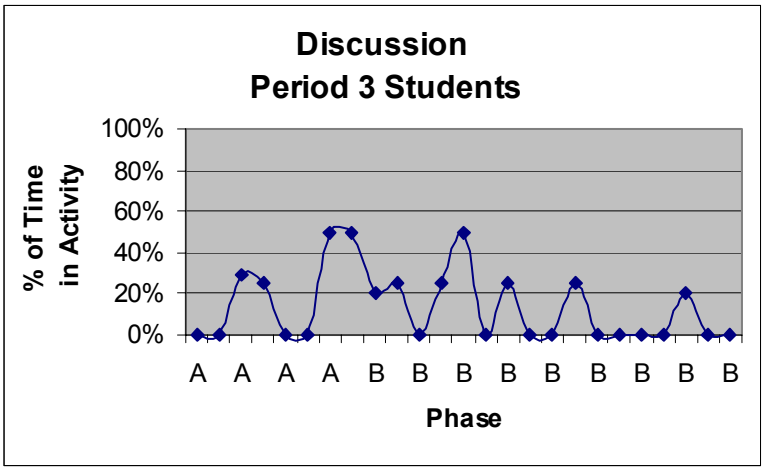


Figure 19 highlights the discussions that took place in the Period 3 classroom. As there were only three data points for discussion in the Period 2 class, this category was charted for only one class. There was much more discussion in Period 3 than in Period 2 throughout the semester. This was most likely due to the fact that there were academic leaders in Period 3 who were engaged in the topic of the day, as well as in the lesson content. These students invariably asked questions or posed thoughtful comments regarding the material, and Coteacher 1 was amenable to these spontaneous discussions. As in the other graphs, there was a significant amount of bounce in the data and a wide dispersion of data across observations, and the trend line was not calculated.

Figure 20. Students making assignments, period 2

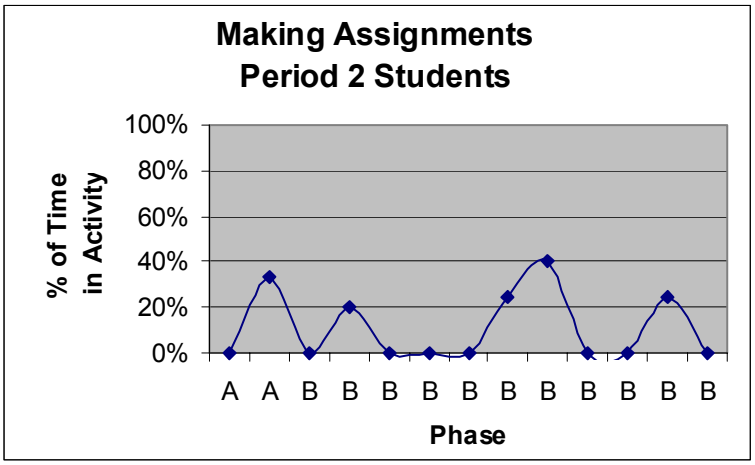
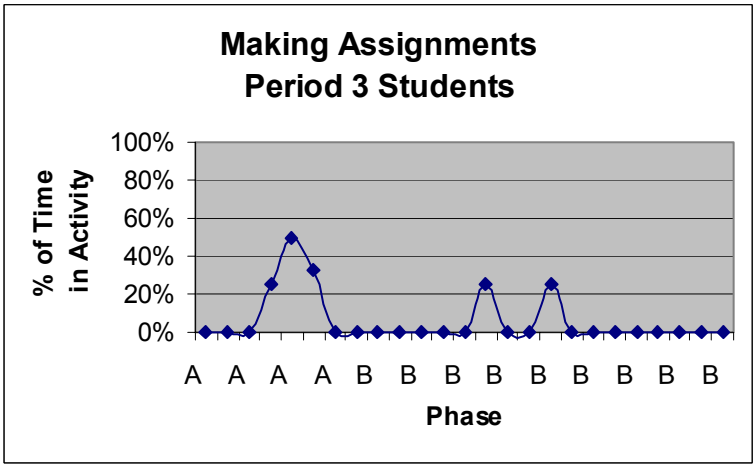


Figure 21. Students making assignments, period 3



The category of making assignments applied to students, as well as to teachers. Figure 20 and Figure 21 illustrate the amount of time that students in the whole class setting spent receiving information on assignments. Although students received this information in one-on-one settings, as well, charts depicting activities in small groups or one-on-one arrangements are detailed separately.

As in previous illustrations, there was a significant amount of bounce in the data which precluded trend analysis. However, it is clear from a visual inspection of Figure 21 that the Period 3 students spent nearly no time in assignment or grading activities at the end of the semester. This is most likely due to the social nature of these students. It was a common scenario to observe a student ask his or her neighbor for clarification of an assignment, rather than to engage the teacher in a whole class explanation.

The SOS provided other categories in which to record student activities, such as Projects and Reading Silently. Individual charts were not completed for these categories due to the small number of data points that were collected for them. Table 12 details the remaining categories and the number of data points that was recorded for students in whole class instructional settings.

Table 12. Student data points by category

Activity	Students in Whole Class Setting–Period 2 # of Data Points	Students in Whole Class Setting–Period 3 # of Data Points
Discussion	3	N/A (charted)
Projects	0	1
Reading Silently	1	1

Figure 22. Student social interactions, period 2

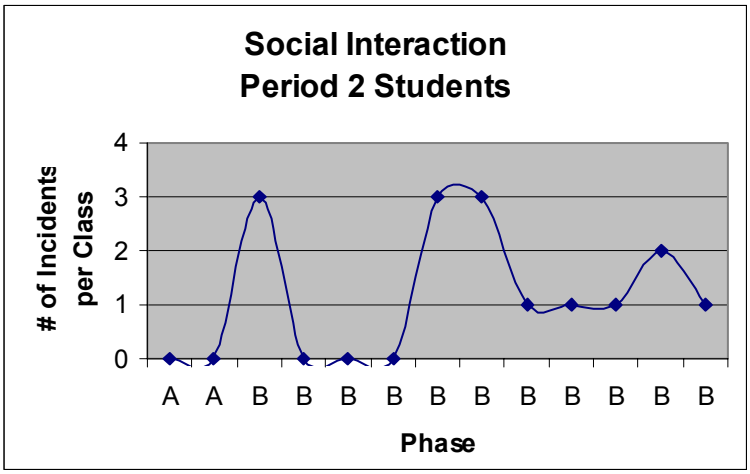
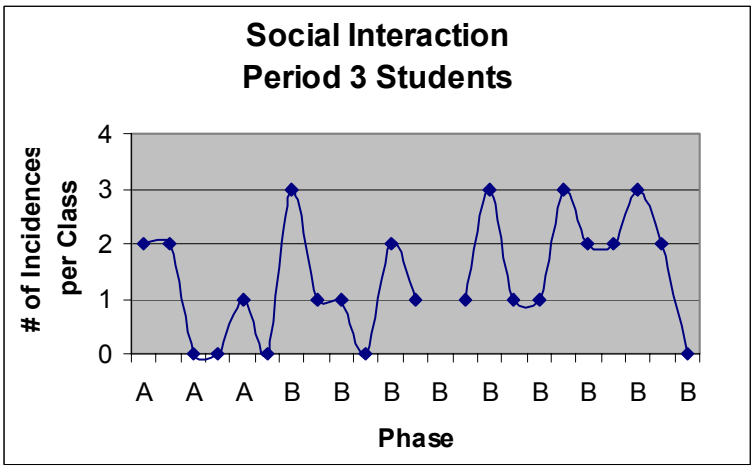


Figure 23. Student social interactions, period 3



Off-task behavior

Off-task behavior was categorized by social interactions, student uninvolvement, or discipline. As off-task behavior was generally observed among small-group and single student settings, it was charted according to the number of incidences observed during a class period. The two most prevalent forms of off-task behavior were social interactions and student uninvolvement. Discipline issues were not common. When they occurred, it was primarily in the second period class. Figures 22 through 25 illustrate the off-task behaviors of students by category and class period.

As in previous illustrations, there was a significant amount of bounce in the data describing social interactions, thus no trend analysis was conducted. A visual inspection reveals that there was no social interaction in the Period 3 classroom on the last day of observation due to the intense review in that classroom (Figure 23). One reason that there are more incidences of social interaction in the Period 3 class (Figure 23) than in the Period 2 class (Figure 22) is that there were more observations conducted in the Period 3 class than in the Period 2 class. In addition, the students in Period 3 were more likely to complete seat work faster than students in Period 2. The same lessons were used for each class; however, students in Period 3 usually had more free time in which to socially interact with one another.

Figure 24. Student uninvolvement, period 2

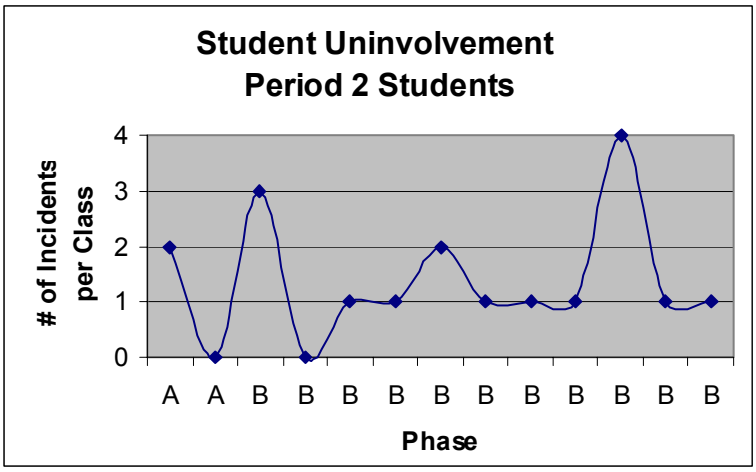
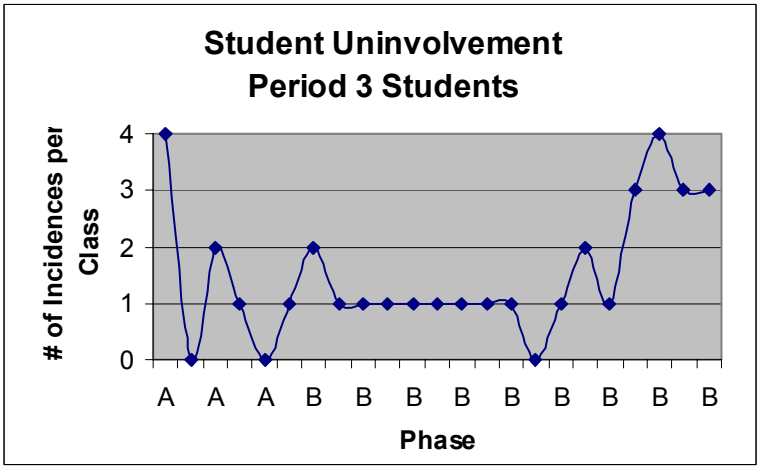


Figure 25. Student uninvolvement, period 3



Student uninvolvement was another form of off-task behavior and charts depicting these behaviors are illustrated in Figures 24 and 25. Students sometimes lay their heads on their desks, and occasionally, fell asleep. When this occurred, Coteacher 1 walked to their desk to awaken them during her lecture. There was little time spent in disciplining a student who was not engaged; rather, Coteacher 1 ignored the behavior or acted quickly to re-engage the student.

As in the other categories of behavior, there was a significant amount of bounce to the data in the category of student uninvolvement, and trend analyses were not conducted. A visual inspection of the data from Figures 24 and 25 reveals that there were a sizeable number of incidences regarding student uninvolvement, and these incidences occurred on a regular basis. In Period 3, especially, shown in Figure 25, there appear to be more incidences of student uninvolvement during the latter half of the semester. Although students with learning disabilities were uninvolved from time to time, the majority of incidences occurred with students with no disabilities. There was no explicit explanation from either teacher regarding student uninvolvement, but interviews with the other teachers in this study suggested that student uninvolvement was a common occurrence at North Texas High. Reasons offered included student work ethic and student motivation (D-I-2; J-I-6, 11; R-I-3). Teacher persistence was mentioned as a way to convey to students that they were cared for and believed in (J-I-7; R-I-7; D-I-7) but the researcher heard only one teacher discuss the fact that she continually tried “new things” to engage the students, although there was no elaboration on what those things were (D-I-7).

The extreme bounce, or variability, in the SOS data emphasized the difficulty in drawing any conclusive results from this data. The observations were designed to complement the conclusions drawn from the qualitative data; however, the shortened baseline combined with the wide dispersion of data precluded analysis of the data.

Summary

This qualitative study was supplemented by quantitative measures of teacher and student behaviors and their descriptions. The central phenomenon that emerged from this collection of data was the teacher response to students with learning disabilities who had been placed in the general education setting. This placement resulted from NCLB. As North Texas High School became accountable for the academic performance of all students, including those in special education, they placed more students with learning disabilities in the general education setting. Students who had never been accountable to high-stakes testing were now expected to participate and pass, despite their disabilities. The high expectations that arose from this placement resulted in varied reactions from the teachers of students with learning disabilities who had been placed in the general education setting, as well as from the administration.

One of the strategies that had been introduced in the literature to enable students with learning disabilities to meet the challenges expected of them was coteaching. Coteaching provided grade level content and individualized instruction to students with learning disabilities and was adopted by North Texas High School to meet the needs of these students. Coteaching, thus, was the strategy in this case study that resulted from the high expectations that had arisen as a result of NCLB.

The differentiated instruction that was expected as a result of a highly qualified general education teacher (Coteacher 1) and a highly qualified special education teacher (Coteacher 2) coplanning classroom lessons was mediated by a the coteachers' experiences, philosophies, and relationships with each other. For example, Coteacher 1 was a self-described struggler in school, and she expected her students to work as hard as she had worked to understand content and achieve success. Coteacher 2, on the other hand, was the mother of a child with disabilities and did not like to see students struggle as her child had. As Coteacher 2 had no previous experience in the general education setting, she appeared comfortable in allowing Coteacher 1 to assume the responsibility for planning lessons and maintaining an appropriate pace. Data from the classroom observations suggested that Coteacher 2 rarely spent over 25% in instruction. Most of the time that she was observed instructing was after the whole-class lecture delivered by Coteacher 1, when she could assist individuals or small groups.

Although both teachers were highly qualified in history, their knowledge of content and strategies were affected by—as well as had a direct affect upon—their relationships with students, students' backgrounds, and classroom dynamics. Affecting all instructional decisions was the availability of time and space, which was embedded within the school culture and the special education culture. For example, Coteacher 1 was a well-organized teacher, with teaching responsibilities for two pre-Advanced Placement classes, a solo taught U.S. History class, and the cotaught U.S. History classes described in this study. In addition, she was chair of the history department and head coach of the cheerleaders. Although she used whole class lecture as her primary method

of instructional delivery, the TAKS results from the previous year suggested that her methods yielded the results that were desired by the district and the state. She referenced extracurricular responsibilities and limited time as reasons for not changing her methods; given the previous successful TAKS results of her students, she had little motivation to do so. Coteacher 1 was accustomed to a fast-paced environment, and she appeared to maneuver through her tasks with relative ease.

Coteacher 2, on the other hand, was assigned to the general education setting for the first time in her teaching career. In addition to the cotaught classes, she was responsible for teaching a tenth grade general education Geography class of low performers. This class was formed during the first week of the semester, providing her little time to reflect on student needs or to prepare lessons. As a former resource room teacher, she was not accustomed to the discipline issues in the general education classroom, the pacing required to teach the required curriculum in preparation for the TAKS, or the academic expectations of general education. Classroom observations indicated that she spent the majority of her time listening to Coteacher 1's lectures. This time was coded under classroom management, as there was no category provided in the SOS for one teacher to listen to another teacher during instructional time. Coteacher 2 was accustomed to a slower-paced environment, and it was noted in observational notes that she appeared to be overwhelmed with the many demands of the general education setting (RJ-1-5). The teachers' roles were defined by their intertwined strands of temperament, previous classroom experiences, and pedagogical philosophies, rather than their knowledge of content.

Many of these mediating conditions were not fixed, but changed almost daily with the inevitable alterations of events, moods, behaviors, and energy levels of students and teachers. For example, on one Monday during the semester Coteacher 1 appeared with a diamond engagement ring on her finger. When one of the students asked if she were wearing an engagement ring, Coteacher 1 took time out to tell the students about the proposal she had received and her plans to move to another city for the next academic year. Students and teachers were engaged in animated discussion for a good portion of the class, and although off task, such discussion was willingly tolerated by both teachers. Most of the time, however, lengthy off-task discussions were not tolerated, and Coteacher 1 quickly re-engaged students engaged in social interactions into the day's lesson. These shorter incidences of off-task behavior among small groups are reflected in the data collected on social interactions, as whole class social interactions were rare. The highest number of social interactions that occurred was three, but these occurred with different groups of students over the course of one class period.

The intervening conditions of teacher personality, philosophy, and pedagogical beliefs affected the cotaught classrooms, and at the same time, they mediated the high expectations that co-existed with the mandates of NCLB. This phenomenon was especially evident in the outcomes of the study, some of which were intended and some of which were unintended. For example, differentiated instruction was seldom observed. The classroom routine of warm-up activities, whole class lecture, and written assignments seldom changed. Classroom observations indicated that written assignments comprised about 50% of the students' activities throughout the semester. As change in

the delivery system is one of the fundamental differences that distinguishes coteaching from solo teaching, this was a surprising outcome. Yet, the academic achievement of students with learning disabilities appeared to increase substantially, as was expected. This outcome was a result of test-taking accommodations, rather than instructional accommodations. Given the fast-paced environment and Coteacher 2's self-described "softie" status regarding the academic struggles of students with learning disabilities, such accommodations may have been the only ones that Coteacher 2 was comfortable in providing.

The differentiation of teachers' roles appeared to be related to the comfort level that each teacher developed over the course of the semester, given her temperament, experience, and belief systems, and the constraints of time and space in the secondary setting. Although the study was designed to provide an optimal setting in which to observe coteaching in the high school setting, it appeared that such requisites to effective coteaching as teacher compatibility, joint planning periods, administrative support, and training were mediated by such context-specific variables as teacher pedagogical beliefs, classroom size, and personal and professional demands on each teacher's time.

CHAPTER V

DISCUSSION AND CONCLUSIONS

The purpose of this study was to explore the instructional factors that contributed to the achievement of students with learning disabilities in a cotaught high school setting. This case study centered on the teacher responses to these students. Driving these teacher responses was the high-stakes testing system initiated as a result of the No Child Left Behind Act of 2001 (NCLB). Under this Act, all students, including special education students, are held accountable for their acquisition of grade-level knowledge and skills. In this study, this accountability context was found to affect how instruction was delivered to students. Students with learning disabilities were moved from the resource room to the general education setting to ensure their access to the general education curriculum, and coteaching was implemented to support students who had a need for specialized instruction. Mediating the implementation of this new delivery model was a wide range of student strengths and needs, the pedagogical philosophies and backgrounds of the teachers, the culture of the specific school and district, and the limitations presented by time and space within the school environment. It was the unique combination and blending of these factors, rather than the implementation of coteaching itself, that affected the outcome of the instruction delivered. This outcome, as a result, had both intended and unintended characteristics.

Extant empirical and mixed methods studies on coteaching at the secondary level have varied widely in their results. Coteaching components differ among these studies,

and academic achievement, when it is measured at all, is measured using different types of assessments, such as grade point averages, pre- and post-tests, and state minimum competency tests. As a result, comparisons among studies are difficult. Qualitative studies similarly suggest that there is a marked difference between coteaching models advocated in the literature and those observed in the secondary classroom.

Certain components have been cited as being critical to the success of coteaching, including specific teacher qualities, administrative support, a positive classroom environment, training, a common planning time, teacher role clarification, and the use of targeted interventions (Anderson, Yilmaz, & Wasburn-Moses (2004); Cook & Friend, 1995; Dieker, 2001; Mastropieri, et al. (2005); Murawski & Dieker, 2004). The present study was designed to include these components of successful coteaching in order to create an optimal example of coteaching at the secondary level. Perceptions of coteaching were obtained through stakeholder interviews to learn how they influenced the implementation of the coteaching delivery model. To supplement this qualitative description of coteaching, descriptive statistics on the academic achievement of students with learning disabilities in the cotaught setting were given.

Although research provides best practice indicators for coteaching at the secondary level, there have been no studies to date that have reported how a combined set of these indicators affects student achievement or behavior. This study contributes to the existing literature on coteaching by implementing these best practice indicators at the secondary level. As such, it represents a "best case example" for planning for coteaching

at the high school level. This study then offers a case of the instruction of one pair of teachers whose coteaching has been carefully planned and administratively supported.

Teacher and Student Behaviors

Data from this study illustrated the constancy of teacher behaviors over the course of the semester with respect to their mode of classroom delivery. These findings were disappointingly similar to those obtained by Murawski (2006), Rice and Zigmond (2000), and Scruggs, Mastropieri, and McDuffie (2007). In these qualitative studies of cotaught classrooms, whole class lecture was the typical delivery method, with the special education teacher assuming the role of assistant. Murawski, for example, observed this type of delivery method in her study of a ninth grade cotaught English class, while Rice and Zigmond similarly observed the status of the coteacher effectively reduced to that of assistant in their study of coteaching models in secondary schools. Finally, in their synthesis of qualitative studies on coteaching, Scruggs Mastropieri, and McDuffie concluded that the one teach, one assist delivery method was the predominant model used in high school settings. Unfortunately, the teaching patterns described in these studies were replicated in the present study, despite the implementation of best practice indicators.

Mastropieri, et al. (2005) concluded that coteaching had the most success in classrooms where both teachers demonstrated effective teaching behaviors, which were defined as including "structure, clarity, enthusiasm, maximizing student engagement, and motivational strategies" (p. 269). The authors did not provide an explicit description of each of these behaviors, but hypothesized that their presence led to a greater degree of

academic achievement, as well as a greater degree of collaboration in the cotaught classrooms that they observed. In the present study, Coteacher 1 provided structure and clarity through her lectures, and both teachers demonstrated a warm regard for their students. However, students exhibited off-task behaviors throughout observations over the semester of this study, and these behaviors may have been a reaction to the unvarying teaching style of the coteachers. Regrettably, regardless of the cause of such behaviors, their persistence throughout the semester suggests that the motivational teaching factors that Mastropieri, et al. described as maximizing student engagement were lacking in this study.

The research of Reeve, et al. (2004) suggests that teachers who support student autonomy also facilitate greater academic achievement in their students than do teachers who display more controlling behaviors in the classroom. In addition, these authors suggest that one reason that teachers adopt more controlling behaviors is that they feel pressured to do so from such external causes as high-stakes testing. These findings parallel those in the present study. For example, Coteacher 1, the general education teacher, remarked that it was difficult to incorporate coteaching methods as doing so would take time away from preparing for the TAKS.

Ding and Sherman (2006) point out that while teacher effectiveness is the most important variable in studies measuring academic gain in students, *teacher effectiveness* has not been defined. They suggest that effective teacher behaviors should be dynamic, changing with the characteristics and needs of students, and that attempts to define teacher effectiveness broadly as found in NCLB is of "questionable value" (p. 45). The

present study provided concrete examples of dynamic teacher behaviors. For example, when classroom student conduct did not support cooperative work, Coteacher 1 reduced the opportunities for such work in an effort to manage student behavior. When students with learning disabilities failed the first classroom test, Coteacher 2 implemented oral test taking accommodations. These dynamic teacher behaviors occurred within the aforementioned context of individual school culture, administrative expectations, teacher personalities and belief systems, and student strengths and needs, but were difficult to measure as discrete, independent actions. The description offered in this study provides a qualitative overview of the interaction of these elements within a cotaught environment.

Tomlinson (2003) suggests that in "grappling with the messiness of teaching" (p. 10), educators begin with the strengths and needs of students, rather than with labels or categories, in seeking information on how to best serve them. Tomlinson elaborates:

> One specialist can touch hundreds of lives through successful collaboration with a single teacher, whereas other specialists are wasting their time attempting collaboration. Students, even of a given "category," differ greatly. The contexts for which we might provide services for them defy generalization (p. 11).

Although the students with learning disabilities in this study carried identical labels, their abilities and needs, as Tomlinson described, varied tremendously. Charlie needed intensive reading support in the classroom, but outside of the classroom, he conducted himself as a typically-developed high school student. Marvin, on the other hand, had spent most of his school career in an adaptive behavioral unit and needed both intensive

reading and behavioral supports to persist in the general education setting. Providing a continuum of supports that is based on individual needs may be part of the "messiness" that Tomlinson alludes to, as such a continuum varies with the needs of the students and is especially difficult to implement at the secondary level where class schedules and the credit system impede administrative flexibility. Unfortunately, although North Texas High School provided a transition room for students who needed behavioral support and a reading class for ninth graders who needed extra reading support, these supports did not meet the needs of all students.

In the Mastropieri, et al. (2005) study, both general educators and special educators were comfortable in their respective roles of lead and secondary teacher, in part because of the different content knowledge that each possessed. In the present study there was a differentiation of roles similar to those found in the Mastropieri study, but this differentiation was not due to the level of content knowledge that each possessed. Each teacher was highly qualified in the field of social studies, given that each had passed a state certification examination on the subject and comments that they made throughout the study. Coteacher 2 was able to add relevant comments to Coteacher 1's lectures and reflected during her interview that, "I don't know the book, but I know the material" (C2-I-7). Although Coteacher 2's subordinate role was not due to her lack of content knowledge, it may have been influenced by her lack of experience in the general education setting. In addition, her limited level of concern about the TAKS was in direct contrast to Coteacher 1's desire for day-to-day control over content and pacing so that TAKS objectives could be addressed. This behavior was also noted by Mastropieri, et al.

(2005), who concluded that high-stakes testing—not individual needs—drove classroom pacing for all students in the general education setting that they observed. Reeve, et al. (2004) drew similar conclusions regarding teachers' need to maintain controlling behaviors connected to the pressures of external forces such as high-stakes testing. The present study contributes to the Mastropieri and Reeve studies by providing an example of coteachers who, despite teaching in a setting with all of the features of a "best case scenario," still exhibited the same teaching behaviors regarding pacing and controlling behaviors.

Coteacher Roles

The current literature reflects a lack of consensus of the meaning of coteaching among school personnel. Cook and Friend's (1995) definition of coteaching is precise, with its four components defined and delivery models clearly prescribed. Morocco and Aguilar's (2002) definition is more general, with less emphasis on the setting and methods, and more emphasis on the skills that the teachers bring to the classroom. Such lack of consensus was also the case with the key stakeholders at North Texas High School, which contributed to confusion in how each teacher understood her role in the cotaught classroom.

In both formal training and informal facilitation meetings, coteaching was presented in more precise terms—as a delivery model that entailed coplanning, codelivering, and coevaluating lessons. The high school principal, however, had paired other special educators with general educators to support day-to-day teaching activities and used the more general definition of "coteaching" to describe this kind of pairing. Her

concept of coteaching thus contrasted with the concept presented to the coteachers during the training period for the present study. Confusion of roles persisted, as evidenced when Coteacher 2 described her spontaneous contributions to Coteacher 1's lecture from time to time as coteaching. Coteacher 1, in contrast, believed that Coteacher 2 had assumed an assistant's role.

This confusion of roles may have affected the perception of parity in the cotaught classroom. Cook and Friend (1995) suggested that parity occurs when each teacher shares the responsibilities of planning, delivering, and evaluating lessons. In contrast, Morocco and Aguillar (2002) suggested that parity occurs in the cotaught classroom at any time that each teacher utilizes her strengths to serve students. The Morocco and Aguillar model appeared to be one that the North Texas High School principal embraced, as did Coteacher 2 and most of the other teachers in the study. Coteacher 1, however, embraced the Cook and Friend model—the one presented in the initial training as exemplifying a desirable model of coteaching. Students also appeared to have varying perceptions of the role of Coteacher 2, with some referring to the special education teacher as an aide and others referring to her as a teacher. The confusion regarding the roles of the coteachers in the present study—although a disappointing outcome considering the explicit training that was provided—supports the confusion found in the literature regarding the definition of coteaching and suggests that consensus regarding the definition of coteaching is lacking among professionals in the field.

Additionally, the physical constraints of the classroom contributed to the confusion of teacher roles. Although Muraswski and Dieker (2004) advised that the

perception of parity should be maintained by providing similar furnishings to each teacher, space limitations prevented the addition of extra furnishings in the cotaught classroom in the present study. As a result, Coteacher 2 assumed a visitor's role throughout the semester, either standing or sitting at Coteacher 1's desk while Coteacher 1 delivered the daily lesson. Both teachers acknowledged that it was difficult to maintain the perception of parity under such conditions. This study, therefore, supports the suggestions provided by Murawski and Dieker regarding the impact of classroom furnishings on student perceptions of parity among coteachers.

Academic Achievement

Although the present study was designed to measure the academic achievement of the students in the cotaught setting at the high school level, in a disappointing turn of events, the post-test results were invalidated due to a change in the testing accommodations by the special education teacher on the post-test. It is reasonable to hypothesize, however that even if the post-evaluation of the students had not been invalidated, a positive change in student achievement still would not have been found. These results can be compared to the three empirical studies of coteaching at the high school level cited in the literature (Lundeen & Lundeen, 1993; Rosman, 1994; Walsh & Snyder, 1993) which also contained design flaws of various types. Studies that focus on coteaching as a single variable and that provide an explicit pre-test, post-test measurement of the academic achievement of students in cotaught high school classrooms have yet to be reported in the literature and were also not obtained in this

study. Until such measurement is developed, the efficacy of coteaching at the high school level is difficult to determine.

Limitations

There were several limitations to this study. First, as the present study was designed to provide an illustration of a particular case involving two teachers at the high school level, it cannot be generalized to all coteaching situations. Another limitation to this study was the bias introduced by the researcher in the collection and analysis of data. The researcher worked in the district for three years prior to the start of the study and had developed relationships both in the Central Office and at North Texas High School. While an outside interviewer conducted some of the interviews at North Texas High School, biases clearly occurred during the interpretation phase of the study. Too, as a graduate student of special education, the researcher had developed certain biases regarding students with learning disabilities that were an inherent component to this study.

The Stallings Observation System provided output on only one teacher, which affected the way in which the data was utilized. The bounce from the data was a limitation to this study. In addition, as the researcher conducted more observations in one of the two cotaught classrooms during the semester, there were fewer opportunities to observe those students who joined the study later in the semester from the other classroom. This provided a narrowed lens through which to view these students and convey their stories. Finally, a limited number of teachers agreed to be interviewed, which affected the discovery of additional results. Reports from a greater number of pairs

of teachers would have provided additional perspectives regarding the strengths and weaknesses of the students in the study.

Implications

Although the results regarding the academic achievement of students in this case study were inconclusive, it is important—even alarming—to note that in these cotaught classrooms, most of the substantive accommodations were provided during testing, rather than during instruction. Although such accommodations resulted in higher grades for these students, these grades do not necessarily reflect an increase in learning. Future studies are needed to explore the fidelity between grades and achievement when observing students with learning disabilities.

Related to the fidelity of grading and achievement is the enforcement of the Individuals with Disabilities Education Improvement Act of 2004 (IDEA 2004), which mandates that students diagnosed with a learning disability must also demonstrate an educational need for special education services. The careful planning and individualized instruction with regard to students' strengths and needs—the foundation of special education—was a missing component in the cotaught classrooms. Volonino & Zigmond (2007) suggest that "special education may be neither feasible nor practical in general education classrooms, where teachers must address individual needs in large group settings" (p. 297). Although, as these authors point out, coteaching may have a positive impact on some students with learning disabilities, neither the current research nor the present study supports its adoption as a best practice. Future studies should address the

specific ways in which coteaching addresses the individual needs of students with learning disabilities.

The implementation of coteaching in the present study involved a change in the conventional way of thinking and doing in the classroom. Certainly, coteaching research needs to address the unique contextual factors that surround such systems changes. These changes were made explicit during training, but few changes were subsequently observed in the classroom. The researcher identified some possible reasons for the lack of change, such as teacher belief systems regarding student abilities, lack of time cited by teachers, the culture of special education at North Texas High School, and the success on the TAKS history test during the previous year. These discoveries were reminiscent of Bronfenbrenner's (1976) views on contextual validity in research:

> If the . . . roles and activities in which [participants] are asked to engage, do not occur frequently in their own subculture, then, regardless of how common such experiences may be in the society at large, they become ecologically invalid for the group in question (p.7).

Although NCLB and IDEA 2004 mandate increased accountability for all children, the present study illustrated widely divergent ways of thinking about accountability among stakeholders. Implementation of coteaching at the high school level may need to involve a much more rigorous and widespread training program that engages teachers and administrators for a prolonged period of time to find consensus on all aspects of inclusion and accountability.

Another factor that may influence accountability is the certification process of special education teachers. At present in Texas, a teacher who is certified in any content area may obtain an additional certification in special education at the K-12 levels by passing a multiple choice examination. This examination qualifies the teacher to teach any student in special education, from students with autism in kindergarten, to students with hearing loss at middle school, to students with learning disabilities in high school. As the skills that are demanded to provide specialized instruction for students in special education vary widely among the thirteen categories of disability, as well as among the developmental stages of the students, a certification process that ensures that teachers are proficient in providing age- and disability-appropriate teaching strategies may be necessary.

Additionally, students with learning disabilities in the present study had spent time in restrictive environments that appeared to delay their progress rather than to facilitate it. This was a disturbing finding, considering that students had been placed in resource rooms for no apparent diagnostic reason. There were no notes in student IEPs that linked suggested interventions contained in the evaluations to an outcome. Future studies should explore how the original diagnosis and recommendations of students with learning disabilities align with classroom instruction over the long term, with periodic assessment of specific interventions.

Finally, Kloo and Zigmond (2008) suggest that, in face of the research that suggests that coteaching may not be an effective teaching model, educators should redesign the model to actualize its potential. “Even when pairs of teachers have received

professional development in the variety of models of coteaching, most are unlikely to establish an educational environment in which students with learning and behavior disorders are likely to make achievement gains" (p. 14). The blueprint for change that they offer provides an adjustment in both the expectations and procedures of assuming a coteaching role. The teachers in the present study agreed that it would be helpful to make the coteaching roles more explicit, with Coteacher 1 stating "…we both have different roles and responsibilities, but we're trying to still figure out what they're going to be and how we're going to implement them" (C1-I-4). Implementing coteaching with more explicitly defined roles of each teacher may provide the structure that appeared to be lacking in the present study.

Summary

Coteaching, while meeting the demands of NCLB in theory, does not appear to do so in practice. Scruggs, et al. (2007) concluded from their metasynthesis of qualitative research that "the ideal of true collaboration between equal partners" is not the norm in most coteaching classrooms (p. 412). They report that whole class instruction is the predominant form of service delivery, and that the special education teacher serves primarily as an assistant in collaborative situations. The present study—purposely designed to include an optimal setting as described by current research—affirms their conclusions, which is troublesome on several fronts. First, if the appeal of coteaching is the utilization of two highly qualified teachers to provide differentiated instruction that will enhance learning for all students, it appears that this model has not helped in achieving that goal. Second, if the services provided by the special education teacher in a

cotaught classroom are similar to those that can be provided by a teacher aide, then the status of the special education teacher as being highly qualified serves little purpose. And third, if the purpose of special education is to provide "specially designed instruction" to meet the unique needs of students with disabilities, placement in a cotaught classroom without such specially designed instruction signals one of two dilemmas: either some students' needs are not being met, or some students do not have a genuine educational need for such instruction.

As intuitively appealing as coteaching seems in theory, it did not appear to serve students in need of specially designed instruction in the high school classrooms in this study. The use of an alternative framework with more explicit expectations and procedures of each coteacher, as suggested by Kloo and Zigmond (2008), may be required before academic achievement can be documented in the cotaught high school classroom. In addition, the alignment of belief systems among stakeholders regarding the capacity of all students to achieve is necessary to create a focused, school-wide philosophy of inclusion. Other contextual factors that are necessary to examine before adoption of a coteaching model at the high school level include a review and consensus of appropriate (and inappropriate) classroom supports, the familiarity of both teachers with the scope and sequence of the subject taught, as well as the pacing of the general education setting, realistic expectations regarding teacher classroom preparation, and the needs and supports required of each student to ensure appropriate educational experiences for all.

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APPENDIX

Tables A-1 and A-2 describe the codes and notations used to reference and identify the participants, interviews, and documents in this study. As all interviews were transcribed, references to them were cited by notation to the person interviewed, by notation to the interview, and to the page number of the transcript.

Table A-1. Coding and notation systems for interviews

Code	Reference	Description/Examples of Notations
I	Interview	I referred to the transcript of the interview. C1-I-4 referred to page 4 of the transcript from the interview with Coteacher 1.
C1	Coteacher 1	Coteacher 1 was the general education coteacher.
C2	Coteacher 2	Coteacher 2 was the special education coteacher.
D	Donna	Donna was a general education English teacher.
R	Robert	Robert was a general education industrial arts teacher.
J	John	John was a special education teacher.
P	Principal	The principal was the academic leader of North Texas High School.
T	Thomas	Thomas was a student with learning disabilities.
N	Natalie	Natalie was a student with the dual diagnosis of LD/ED (learning disabled/emotionally disturbed).
C	Charlie	Charlie was a student with learning disabilities.
BJ	BJ	BJ was a student with learning disabilities.
M	Marvin	Marvin was a student with learning disabilities.

Table A-2. Coding and notation systems for documents

Code	Reference	Description/Examples of Notations
RJ	Reflexive Journal	The reflexive journal was a tool used by the researcher to record observations, thoughts, and feelings regarding the study. RJ-4-2 referred to data from week 4 of the study, page 2 of the reflexive journal.
FM	Facilitation Meeting	The researcher met with the coteachers weekly to discuss coteaching issues. The researcher transcribed her notes from these meetings. FM-10-2-3 referred to data from page 3 of the October 2 facilitation meeting transcript.
A	Artifact	Artifacts were documents that were used or referred to in the study, such as materials that the researcher provided for the coteachers or letters to parents.
AR	Attendance Record	The Attendance Record contained a record of absences of each student.
DR	Discipline Record	The Discipline Record contained the discipline history of each student.
GS	Grade Sheet	The Grade Sheet contained the most current grades of each student.
HB	Handbook	The student handbook contained information regarding student code of conduct.
IEP	Individual Education Plan	The Individual Education Plan describes the goals and services to be provided a student and documentation of the need of those services.
MC	Member Check	The member check allows participants to review material written by the interviewer to ensure credibility of the data.
O	Observation Sheet	The observation sheet was a document used by the researcher during and after each observation to record notes about the observed classroom.
S	Schedule	The schedule refers to the students' schedule of classes.
Tr	Transcript	The transcript contained students' academic history from the ninth grade until graduation.

VITA

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