

BRIGHT SPOTS AND MISSED OPPORTUNITIES:
WHAT CO-TEACHERS IN ONE MIDWESTERN HIGH SCHOOL DO TO SUPPPORT
ACCESS TO THE GENERAL EDUCATION CURRICULUM

By

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ABSTRACT

BRIGHT SPOTS AND MISSED OPPORTUNITIES: WHAT CO-TEACHERS IN ONE MIDWESTERN HIGH SCHOOL DO TO SUPPORT ACCESS TO THE GENERAL EDUCATION CURRICULUM

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In response to recent legislative changes including increased graduation requirements and changes in requirements for Highly Qualified status for secondary special education teachers, many schools have implemented co-teaching as a way to deliver special education services to students with high-incidence disabilities and to increase access to and success in the challenging courses required by the Michigan Merit Curriculum. Co-teaching is thought to be a way to promote inclusive education and increase access to the general education curriculum for students with disabilities and other students at risk for academic failure (Scruggs, Mastropieri, & McDuffie, 2007). In some high schools today, co-teaching is the predominant service delivery model used to manage these competing demands, requirements, and changes in curriculum.

This study examined how co-teaching is utilized in one midwestern high school to support access to and success in the general education curriculum for students with disabilities and other students at risk for academic failure. Specifically this study sought to answer the following research questions: What practices do co-teachers report that they employ to support access to the

general education curriculum for students with disabilities and other students at risk for academic failure? What factors support or constrain the use of co-teaching as a way to support access to the general education curriculum? How can these results be explicated in terms of school change theory?

This study utilized multiple methods including a survey, a semi-structured interview, and classroom observations. Results revealed that co-teachers report utilizing a wide range of practices to support students with disabilities and students at risk for academic failure in general education. In addition, results show that some practices that are recommended to support academic literacy instruction such as strategy instruction, providing opportunities for extended discussion of text, increase motivation and engagement, and the use of explicit strategies and routines to teach essential content are rarely used by co-teachers in this study (Kamil et al., 2008; Kosanovich, Reed, & Miller, 2010; Torgesen et al., 2007). Factors that constrain or support what co-teachers do in the classroom to support access to or success in the general education curriculum are discussed, and the results are examined through the lens of school change. Implications for increasing the effectiveness of co-teaching practice are provided.

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Dedication

This is dedicated to the memory of my father, A.D. Shankland,
and Dr. Michael Pressley.

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TABLE OF CONTENTS

LIST OF TABLES	xii
LIST OF FIGURES	xiv
CHAPTER 1	
INTRODUCTION	1
Statement of the problem	1
Need for Study	7
Research Questions	10
Significance of the Study	10
CHAPTER 2	
LITERATURE REVIEW	12
Definition of Co-Teaching	12
History and Precedent for Co-Teaching	13
Advantages of Co-Teaching	18
Impact on Student Learning	19
Disadvantages/Impact on Education System	23
How is Co-Teaching Implemented?	24
Attitudes and Perceptions of Teachers Regarding Co-Teaching	29
Factors and Conditions Critical for the Success of Co-Teaching	31
Is What is Done in Co-taught Classes Special or Unique?	37
Evidence-Based Practices to Support Content Learning	43
Conceptual Framework/School Change Theory	47
Fullan's work on school change	49
Charter and Jones' (1973) levels of reality	55
Concerns-Based Adoption Model	59
Frameworks for Maximizing Co-Teaching	63
Summary	67
Research Questions	68
CHAPTER 3	
METHODS	69
Participants and School Context	70

Role of the researcher	70
Description of research site	71
Description of teacher participants	76
Student involvement	83
Informed consent procedures	83
Data Collection	84
Semi-structured interviews	84
Teacher survey	88
Classroom observations	92
Data Analysis	94
Semi-structured interviews	94
Survey	95
Classroom observations	96
 CHAPTER 4	
RESULTS	96
Research Question 1	97
Support for learning course information	107
Learning-to-learn strategies	113
Supporting vocabulary development	121
Motivation for learning	125
Supporting struggling readers and writers, use of assistive technology, and principles of universal design for learning	128
Assessment	141
Classroom and behavior management	144
Summary	147
Research Questions 2 and 3	148
Need for co-teaching and benefits to co-teachers and students	150
The role and impact of policy on what co-teachers do in the classroom	156
The importance of purposes, goals, and expectations	162
The role of planning in instruction and supporting access to general curriculum	167
Through the lens of school change	171
Summary	177
 CHAPTER 5	
CONCLUSION AND IMPLICATIONS	178

Summary and Implications for Practice	180
Insights into the instructional practices that teachers use to support access to the curriculum	181
The perceived need for co-teaching and benefits co-teaching	183
The role and impact of policy on the practices of co-teaching	184
The importance of shared purposes, goals, and Expectations	187
The role of planning	190
The implementation of co-teaching through the lens of school change	191
Challenges and Limitations	194
Implications for Future Research	198
APPENDICES	200
Appendix A: Semi-structured Interview Questions	201
Appendix B: Supporting Access to the General Education Curriculum Survey	205
Appendix C: Classroom Observation Form	211
REFERENCES	212

List of Tables

Table 1: Stages of Concern: Typical Expressions of Concern about an Innovation	59
Table 2: Levels of Use of the Innovation	61
Table 3: Frameworks for Maximizing Co-Teaching Dimensions and Factors	64
Table 4: Demographic Makeup of Student Body	71
Table 5: Information about Participating Co-Teaching Teams	78
Table 6: Information about Participating Teachers	78
Table 7: Categories Included in the Supporting Access to the General Education Curriculum Survey	90
Table 8: Average Frequency-of-Use Ratings from the Supporting Access to the General Education Curriculum Survey	99
Table 9: Practices that Teachers Report Using Most Frequently	102
Table 10: Practices that Teachers Report Using Least Often	104
Table 11: Support for Learning Course Information	108
Table 12: Learning-to Learn Strategies, Enhancing Comprehension of Course Texts, Developing Writing in Your Course	114
Table 13: Supporting Vocabulary Development	123
Table 14: Motivation for Learning	125
Table 15: Supporting Reading Skills for Struggling Readers, Assistive Technology	129

Table 16: Assistive Technology	133
Table 17: Universal Design for Learning (UDL)	135
Table 18: Assessment	141
Table 19: Classroom Behavior and Management	146

List of Figures

Figure 1: Conceptual Framework	49
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Chapter 1

INTRODUCTION

Statement of the Problem

Changes in education laws over the last fifteen years have drawn additional attention to the underachievement of students with disabilities. The 1997 Reauthorization of the Individuals with Disabilities Education Act (IDEA) and the 2004 reauthorization of the same act ("Individuals with Disabilities Education Improvement Act") shifted the focus in special education from assuring access to services for students with disabilities to an emphasis on increasing academic outcomes for these same students (*A New Era*, 2002). In alignment with the increased emphasis on improving academic outcomes for students with disabilities, IDEA 2004 mandates the participation of students with disabilities in general education curriculum to the greatest extent possible and requires that students with disabilities be included in district and state assessment programs. Specifically, No Child Left Behind (NCLB) (2001) requires that at least 95% of all students be assessed in reading and mathematics from grades 3 through 8 and at least once in high school.

To support the increased emphasis on improving academic outcomes for students with disabilities in NCLB and IDEA 2004, states and districts have made significant changes to curriculum. Many states have adopted more

rigorous curriculum standards and have increased graduation requirements in response to standards-based reform and resulting legislation. In Michigan, the High School Content Expectations (HSCEs) were recently implemented to support the Michigan Merit Curriculum (MMC) and the Michigan Merit Exam.

The class of 2011 was the first class to enter high school under the requirements of the MMC. The MMC is intended to increase academic standards for all students and better prepare students for post-secondary education, careers, and 21st century skills. Prior to the MMC, only 1/2 credit in civics was required for graduation by the State of Michigan; instead of requirements at the state level, each local district set their own requirements for graduation. The new requirements of the Michigan Merit Curriculum (MMC) ("Michigan Merit Curriculum, n.d.) include:

- 4 credits in English / Language Arts
- 4 credits in mathematics including Algebra 1, Geometry, and Algebra II and a mathematics course during senior year
- 3 credits in science including Biology and Chemistry or Physics
- 3 credits in social studies including a full credit in Civics/Economics, U.S. History, and World History and Geography
- 1 credit in health and physical education
- 1 credit in visual, performing, or applied arts
- 2 credits in World Languages (beginning with the Class of 2016)
- An online learning experience

With implementation of these requirements, the MMC dictates 18 of the required 22.5 credits required for graduation from a high school in Michigan.

The academic standards have been raised, but the new requirements allow little

room for art, music, vocational programs, or other electives, which is of concern to many. Considerable debate continues to swirl around standards-based reforms and the needs of students with disabilities. A parent or legal guardian of a student in Michigan may request a personal curriculum that allows some modification to the MMC curriculum even if it does not meet all requirements of the MMC standard (Michigan Department of Education, 2010).

Among the students who struggle the most to reach benchmarks and attain proficient levels in literacy and mathematics may be students with disabilities (Olson, 2000; Schumaker & Deshler, n.d.). These students often have difficulty meeting the significant reading and writing demands in general education, and by extension, they are less successful in passing district and statewide assessments that require reading and writing skills in English-Language Arts or content-area assessments (Olson, 2000; Schumaker & Deshler, n.d.). Related to that is the difficulty some students with disabilities may have in passing the classes or tests required for graduation under new rigorous standards.

The inclusion of more students with learning disabilities in district and statewide assessments raises the bar and puts significant pressure on both special educators and general educators to provide more effective instruction in reading and writing for students with disabilities. A large number of students

with learning disabilities qualify for special education in the area of reading and/or written expression. An informal survey of student records in this researcher's school district showed that 75 - 80% of high school students with learning disabilities qualified based on deficits in reading, written language, or both (Shankland & Clark, 2000). A significant number also qualify in mathematics. These are the students who may struggle to meet the new requirements for graduation from a public high school in Michigan.

A second policy change that has occurred is the implementation of Highly Qualified (HQ) requirements for special education teachers in Michigan. As a result of the HQ decision in Michigan and other states, secondary special education teachers cannot teach core academic content unless they are also HQ in that content area. Each state can determine how pre-service and in-service special educators will satisfy this requirement, but in most cases, that means that secondary special educators must become HQ through the acquisition of full state certification in each content area. This has resulted in fewer credit-producing courses taught by special educators to students with disabilities in the high school in which this study took place and has increased the numbers of students with high-incidence disabilities who take courses required for graduation in general education settings. Co-teaching with a teacher who is HQ

in that content area, however, is allowed and thus is seen as a way to deliver course content to students with disabilities.

In response to these recent legislative changes (e.g., NCLB, IDEA 2004, increased graduation requirements in Michigan) and changes in requirements for HQ status for special educators, some schools, including the school where this research study took place, have implemented co-teaching as a way to both deliver special education services to students with high-incidence disabilities who receive most of their instruction in general education and to increase access to the challenging courses required of the MMC. Co-teaching is thought to be a way to promote inclusive education and increase access to the general education curriculum for students with disabilities and other students at risk for academic failure (Scruggs et al., 2007). In many high schools today, co-teaching is the predominant service delivery model used to manage these competing demands, requirements, changes in curriculum, and requirements for HQ status of special educators (Zigmond, Kloo, & Volonino, 2009).

Data from the U.S. Department of Education (2010) show that, over the last twenty years, the percentage of students with learning disabilities who are educated in general education for the majority of the school day has increased significantly. In 1989-1990, approximately 22% of students with learning disabilities spent 80% or more of their school day in a general education setting

(McLeskey & Waldron, 2004). In contrast, by 2007-2008, 62% of students with learning disabilities were spending 80% or more of their day in general education (U.S. Department of Education, 2010). This significant increase in inclusive programming has “led some to conclude that in most parts of the United States, the preferred model of service delivery for students with LD is now ‘full inclusion with co-teaching’” (Zigmond et al., 2009, p. 196 in McLeskey & Waldron, 2011).

In response to the changes highlighted above, the high school in this research study recently changed from a full continuum of special education services to a service delivery model focused primarily on co-teaching in general education. This change was instituted for two reasons: (1) some students experienced difficulty passing courses required for graduation under the new graduation requirements adopted by the State of Michigan, and (2) changes in requirements for HQ status of special education teachers at the high school level meant that none of the special education teachers in the building were considered highly qualified to teach content-area subjects. In the past, special education teachers taught a number of content-area courses (e.g., Developmental English, Developmental Mathematics, Developmental World Studies) in the special education department for those students who were unable to meet the requirements of those courses in general education. In

general, lower level textbooks were used and these courses moved at a slower pace than the general education equivalent of the course. After the change in regulations governing HQ, special education teachers could no longer teach content-area courses that would count toward graduation requirements. As a result, students who formerly took some of their required courses in special education with special education teachers as the teacher of record could no longer do this because the special educator was not highly qualified to teach the required content. Instead, these students were placed in general education classes. The decision was made to offer more co-taught sections of required classes as a way to support students' needs.

Need for Study

In theory, co-teaching offers the opportunity for the best from both general education and special education. General education teachers bring specialized content and pedagogical knowledge while special education teachers bring specialized knowledge about student needs and how to modify or enhance instruction to best meet those needs. In theory, co-teachers work collaboratively to deliver content utilizing research-based methods that meet the needs of their students. Learning is enhanced, and students are more successful.

In practice, co-teaching is implemented in varying ways with varying degrees of success. The roles and responsibilities of the two teachers vary widely which may contribute to the success with which co-teaching enhances students' access to the general education curriculum. It is assumed that two teachers working together to teach a diverse group of students can make available to *all* students a wider range of instructional practices than would be feasible with just one teacher in the classroom, thus increasing access to the general education curriculum. In addition, co-teaching is expected to increase the participation of students with disabilities as full members of the classroom community. Finally, it is hoped that co-teaching will improve academic outcomes for at-risk students and students with disabilities (Zigmond & Matta, 2004).

While these benefits of co-teaching are touted, some researchers (e.g., (Baker, 1995a, 1995b, 1995c; Baker & Zigmond, 1995; Magiera & Zigmond, 2005; Zigmond, 1995a, 1995b, 1995c; Zigmond & Matta, 2004) have reported that what occurs during co-teaching may not be that “special”. In a series of case studies conducted in six schools in five states, Baker and Zigmond found that students with disabilities had access to the same instructional opportunities as students without disabilities. In addition they found evidence that modifications to materials, assignments, and assessments were made in all

settings, but in most cases, adaptations or accommodations were made to support an immediate need rather than as a result of careful planning to meet the unique needs of individual students. They concluded that students with learning disabilities were getting a “very good *general* education” (1995, p. 175). Scruggs et al. (2007) and Weiss and Brigham (2000) came to similar conclusions. Scruggs et al. reported that instruction in the studies of co-teaching that they reviewed looked a lot like traditional classrooms with the addition of a special education teacher. Finally, in a study by Magiera and Zigmond (2005) that sought to compare the differences between co-taught and non-co-taught classrooms under routine conditions, they did not find that co-teachers utilized a broader array of instructional grouping practices and did not appear to significantly alter instructional practices in co-taught classrooms. They found that the classroom instruction was relatively similar whether there was one or two teachers in the classroom.

Weiss & Brigham (2000) reported that there were few studies that examined what co-teachers actually did in the classroom. Understanding what co-teachers do in the classroom is especially relevant at a time when standards have increased, and school leaders are trying to increase the achievement of students with disabilities in the general education curriculum to meet AYP. This study seeks to add to the knowledge base regarding what co-teachers do in

their practice to increase access to the general education curriculum for students with disabilities and students at risk for academic failure. Careful analysis of what co-teachers in one high school do to support access to the general education curriculum and how and why these decisions are made can help us better understand the intricacies of co-teaching and support the development of co-teaching partnerships and practices.

Research Questions

1. What practices do co-teachers report that they employ to support access to the general education curriculum for students with disabilities and other students at risk for academic failure?
2. What factors support or constrain the use of co-teaching as a way to support access to the general education curriculum?
3. How can these results be explicated in terms of school change theory?

Significance of the Study

These questions are significant for several reasons. First, because of legislative changes especially regarding HQ status of secondary special education teachers, co-teaching has become the primary service delivery option in some high schools in Michigan. Co-teaching satisfies the letter of the law, but we know little about the benefits that are realized by co-teachers and/or the students taught in co-taught classes.

In addition, co-teaching may be considered to be a more expensive service delivery option because it requires scheduling two teachers to teach a class that could be taught by one teacher. Given that some researchers (e.g., (Baker, 1995a, 1995b, 1995c; Baker & Zigmond, 1995; Magiera & Zigmond, 2005; Zigmond, 1995a, 1995b, 1995c; Zigmond & Matta, 2004) have concluded that the instruction in co-taught classrooms is not significantly different than what takes place in classrooms that are not-co-taught, it is important to learn more about the instructional practices utilized by co-teachers. It is important to learn more about what co-teaching looks like in secondary classrooms and what practices and activities co-teachers in secondary classrooms utilize to promote access to the general education curriculum. These are questions that deserve further examination. At this point, further research is needed to further explicate the answers to these questions.

Chapter 2

Literature Review

Definition of Co-Teaching

Co-teaching has been defined in a number of ways in the literature.

Patriarca (1997) offered the following definition of co-teaching: “two or more fully qualified teachers who assume co-equal responsibilities across all dimensions of teaching in a classroom with diverse groups of students” (p. 8). Zigmond and Magiera (2001) describe co-teaching as a “special education service delivery model in which two certified teachers, one general educator and one special educator, share responsibility for planning, delivering, and evaluating instruction for a diverse group of students, some of whom are students with disabilities” (p. 1) while Cook and Friend (1998) define co-teaching as “two or more professionals delivering substantive instruction to a diverse, or blended group of students in a single physical space” (p. 454). The definitions shared above help to distinguish co-teaching from other classroom practices that may be called co-teaching but are not. Critical to each of these definitions is that co-teaching involves two fully certified teachers who share responsibility for planning, delivering, and evaluating instruction to diverse students groups.

Researchers and proponents of co-teaching (e.g., Friend & Cook, 2002; Walther-Thomas, Korinek, McLaughlin, & Williams, 2000) have identified a

number of arrangements or variations that instruction may take in the co-taught classroom. These include:

- Parallel teaching which refers to a situation in which both teachers teach the same or similar content to different groups of students. This may occur in the same classroom or in separate classrooms.
- In station teaching, students move through various learning stations in the classroom while both teachers provide assistance.
- In one-teach/one-assist, one teacher (usually the general education teacher) is responsible for delivering instruction while the second teacher “drifts” around the room to assist students by providing guidance and support as needed.
- In alternative teaching, one teacher may provide specialized instruction to a smaller group of students in a separate location for a limited period of time.
- Team teaching refers to a situation when both co-teachers share responsibility for planning, delivering, and assessing instruction to a diverse group of students.

History and Precedent for Co-Teaching

In response to recent legislation and changes in requirements for Highly Qualified (HQ) status for special educators, many schools have implemented co-teaching as a way to deliver special education services to students with high-incidence disabilities who receive most of their instruction in general education. Co-teaching is thought to be a way to promote inclusive education and access to the general education curriculum (Scruggs et al., 2007). In many high schools today, co-teaching is the prevalent service delivery model used to deal with these competing demands, requirements, HQ, and changes in curriculum.

In the late 80s when co-teaching began receiving attention, it was referred to as the Regular Education Initiative (REI) (Hallahan, Kauffman, Lloyd, & McKinney, 1988). Co-teaching may have its roots in efforts to include special education students in general education rather than as a way to deliver instruction more effectively to students with disabilities (Weiss, 2004) and has been touted as a way to eliminate the artificial division between general education and special education. At a conference in 1985, Madeline Will, then Assistant Secretary, Office of Special Education and Rehabilitative Services, U.S. Department of Education, cited problems with the ‘pull-out’ approach and stated that this approach to the education of students with disabilities “has failed in many instances to meet the educational needs of these students and has created, however unwittingly, barriers to their successful education” (1986, p. 412). At that time, Will called for general and special educators to form a partnership to improve instruction for students at risk for learning problems. This was followed by proposals that general education and special education combine forces “into a coordinated educational delivery system” that would “combine methods that have a strong research record of effectiveness with comprehensive systems of instruction that have evolved from both general and special education (Wang, Reynolds, & Walberg, 1986).

Adding to the pressure to increase the efficacy and flexibility of teaching and curricular models used in general education classrooms was the fact that classrooms in the United States have become increasingly diverse both in terms of race, ethnicity, socioeconomic status, and religion, as well as in the number of students with disabilities who spend the majority of the day in the general education classroom. Recent changes in education policy have drawn increased attention to the underachievement of students with disabilities and other subgroups triggering calls for education reform and school accountability.

The 1997 and 2004 reauthorizations of the Individuals with Disabilities Education Act (IDEA) shifted the focus in special education from access to services to an emphasis on increasing academic outcomes for students with disabilities (Erickson, Ysseldyke, Thurlow, & Elliott, 1998; Turnbull, Rainbolt, & Buchele-Ash, 1997). To support the goal of improving academic outcomes for students in special education, IDEA 2004 mandated the participation of students with disabilities in the general education curriculum to the maximum extent possible and required that students with disabilities be included in district and state assessment programs, and the No Child Left Behind Act (NCLB) (2001) required that at least 95% of all students be assessed in reading and mathematics from grades 3 through 8 and at least once in high school. The results of these assessments are used to determine whether schools and

districts make adequate yearly progress (AYP); failure to make AYP can lead to the imposition of sanctions for school buildings and districts. Although some students with significant disabilities can be tested using alternate assessments, the law currently caps this number to a small percentage of all students with more severe disabilities.

The standards-based reform movement that began in the 1990s provided the impetus for a number of recent reports and education bills including NCLB and revisions of IDEA. Major elements of standards-based reforms include: (1) higher content standards, (2) increased testing of students to assure that students are meeting the standards, and (3) increased emphasis on holding educators accountable for the achievement of all students (Adelman, 1999; Erickson et al., 1998; Schumaker, Deshler, Bui, & Vernon, 2000).

To support the changes in content standards and assessment resulting from NCLB and IDEA 2004, states and districts have made significant changes at the curricular level. As a result of standards-based reform and resulting legislation, most states have adopted rigorous curriculum standards - the Michigan Curriculum Framework, the Grade Level Content Expectations (GLCEs), and the High School Content Expectations (HSCEs) here in Michigan. At the high school level, a number of states require students to pass proficiency tests in order to graduate and the number is growing. California was recently mired in

controversy as it implements its version of a proficiency test that ALL students must pass in order to earn a high school diploma (Samuels, 2007). In addition, many states, including Michigan, have increased graduation requirements by increasing the requirements in mathematics, English, science, social studies, and foreign language.

The inclusion of increasing numbers of students with learning disabilities in district and statewide assessments raises the bar and puts significant pressure on both special educators and general educators to provide more effective instruction in reading and writing for students with disabilities since the majority of students identified with learning disabilities have deficits in these areas. Although most students with LD are educated primarily in general education (Hock, Deshler, & Schumaker, 1999), these students have difficulty meeting the significant reading and writing demands in general education, and by extension, they are less successful in passing district and statewide assessments that require reading and writing skills in English-Language arts or content-area assessments (Olson, 2000; Schumaker & Deshler, n.d.). Related to that is the difficulty some students with disabilities may have in passing the classes or tests required for graduation under new rigorous standards. At the secondary level, it is imperative that educators provide more effective supports for

students with deficits in reading and/or writing language so that they can meet the demands of increasingly challenging curriculum (Deshler et al., 2001).

Advantages of Co-Teaching

One of the oft-mentioned advantages of co-teaching is that co-teaching combines the strengths of two teachers to meet the needs of diverse groups of students, i.e. “two heads are better than one.” Co-teaching is thought to be a promising instructional practice because it allows special education and general education teachers to share the responsibility for planning, delivering, and evaluating instruction to diverse groups of students. According to Kim (2006), this collaboration between general education and special education teachers can “allow for an increase in both the amount and complexity of curriculum provided to students with LD” (p. 270). The general education teacher brings specialized knowledge about the content and pedagogy of the general education curriculum while the special education teacher contributes specialized knowledge about the unique needs of individual students and how to adapt and modify the curriculum to best meet those needs.

Advocates of co-teaching (e.g., Dieker & Barnett, 1996; D. Rice & Zigmond, 2000; Zigmond & Magiera, 2001) make several powerful claims regarding the benefits of co-teaching. First, co-teaching makes available a wider range of instructional practices to all students in courses that are co-taught.

As a result of two teachers working together to teach one group of students, teachers can utilize powerful instructional practices that may not be possible with just one teacher. In describing their experience co-teaching, Dieker and Barnett (1996) explain that in co-teaching, both teachers had “expertise in many areas, and combining these skills made both teachers more effective in meeting the needs of all students (p. 7). Second, **it is thought that** co-teaching will enhance the participation of students with disabilities in general education courses. Third, it is expected that as a result of co-teaching, the performance of students with disabilities will improve (Dieker & Barnett, 1996; D. Rice & Zigmond, 2000; Zigmond & Magiera, 2001).

Impact on Student Learning

The academic outcomes for students with disabilities who receive special education services through co-teaching are understudied (Zigmond & Magiera, 2001). Because of the many variables that exist in schools, student outcomes related to co-teaching are difficult to validate through empirical research.

Random assignment of students or teachers to co-teaching conditions is usually not possible, comparable comparison groups often do not exist, measures of students’ achievement are difficult to obtain or compare, and settings vary dramatically. Nevertheless, several researchers have conducted reviews of the research on co-teaching.

After a review of over 700 documents related to co-teaching produced between 1966 and 1998, Weiss and Bringham (2000) found 23 studies that met their criteria for inclusion by providing some sort of evaluative or interpretive data. Among those 23 studies, 5 were published program evaluations; achievement data were presented in three of the program evaluations. One study reported comparisons between students in co-taught and non-co-taught classes (Johnston, 1994) showed that the students with learning disabilities in collaborative classrooms outperformed students in non-collaborative classrooms on 7 of 8 academic measures. However, Weiss and Bringham (2000) point out that questions regarding the assignment of students to experimental and control conditions limited the interpretations that could be drawn. In a second comparative study by Flicek, Olsen, Chivers, Kaufman, and Anderson (1996), the performance of students in the co-taught class was compared to their own performance from the previous year. Across various measures, only students' scores in mathematics (on the Stanford Achievement Test) improved over the previous year. In the third study (Harris et al., 1987), the researchers found that the grades of students with disabilities in the co-taught class were not significantly different from the grades of students without disabilities, however, the grades for all students were quite low ranging from 1.34 to 2.02 on a 4.0 scale. These three studies highlight the variability in the dependent measures

that were analyzed and the complexity of evaluating student achievement in studies of co-teaching. Overall, because of the variability across achievement groups, data sources, and dependent measures across the three studies, Weiss and Brigham concluded that it was difficult to draw conclusions about the efficacy of co-teaching based on a comparative analysis of student achievement.

Zigmond and Magiera (2001) also conducted a review of the literature for studies published between 1980 and 2000 that compared teachers' instructional practices, student's academic outcomes, and/or student engagement in co-taught classes relative to other special education service delivery models. They found only four empirical studies that examined outcomes for students with disabilities in co-taught courses as compared to non-co-taught classes. Three of the four studies were conducted with elementary students (Bear & Proctor, 1990; Marston, 1996; Schulte, Osborne, & McKinney, 1990). The findings from these studies showed mixed results suggesting that co-teaching produced gains in reading and/or mathematics at least as good as when students received instruction in the resource room. In the only study conducted in a high school, Boudah, Schumaker, & Deshler (1997) found that the academic performance of students with disabilities in a co-taught class (N = 16) actually declined during the study. Also of significance

in this study is that even though there were two teachers in the classroom, the students were only minimally engaged in academic tasks.

Finally, Murawski and Swanson (2001) conducted a meta-analysis of quantitative research to examine the efficacy of co-teaching. Their review of 89 articles yielded only 6 studies that provided sufficient data so that an effect size could be calculated (Klingner, Vaughn, Hughes, Schumm, & Elbaum, 1998; Lundeen & Lundeen, 1993; Rosman, 1994; Self, Benning, Marston, & Magnusson, 1991; Vaughn, Elbaum, Schumm, & Hughes, 1998; Walsh & Snyder, 1993). A variety of dependent variables were used in these six comparative studies including achievement test scores, grades, attitude measures, number of absences, referral rates, and measures of social outcomes to compare students in co-taught classes to students in control groups. Murawski and Swanson reported that the effect sizes for these 6 studies ranged from a low of .24 (small effect) to a high of .95 (large effect) with an average effect size of .40 (moderate effect).

Although positive effects were seen in each of the 6 studies, Murawski and Swanson (2001) asserted that it was difficult to draw conclusions about the efficacy of co-teaching for students with disabilities because of the small number of studies. The authors concluded that more research was needed to validate the academic effects of co-teaching for students with disabilities.

Disadvantages/ Impact on Education System

Co-teaching is an expensive service delivery option both in terms of the cost of equipping classrooms with two certified teachers and opportunities lost when the service delivery continuum is narrowed, eliminating services previously provided by resource room teachers. When assessing the efficacy of co-teaching, the appraisal of costs and benefits of the model must be balanced with a consideration of the loss of other service delivery options. When co-teaching is implemented, the special education teacher is obligated to be in the general education classroom for that portion of the school day. This may mean, for example, that the special education teacher has less time to provide needed services to students with disabilities outside of the general education classroom. That may mean that time previously devoted to intensive literacy instruction for students with disabilities in reading, mathematics, or written expression is no longer available. In effect, the service delivery continuum has been dramatically narrowed as a result of the shift to co-teaching models. McLeskey and Waldron (2011) addressed this concern in a recent paper. Based on an extensive review of research over the past 10 years, McLeskey and Waldron contend “inclusion is not a feasible alternative for meeting the basic academic needs in reading and math for most students with LD” (p. 49). They contend that research shows that the “high-quality instruction, designed to

meet individual student needs” (p. 49) is best delivered in part-time, pullout settings.

How is Co-Teaching Implemented?

In the 1990s, Patriarca, Freeman, Hendricks, & Swift (Patriarca, 1997; Patriarca et al., 1997a) studied how co-teaching is implemented in classrooms. They found that much of the literature on co-teaching addressed how to *do* co-teaching rather than reporting empirical studies on the efficacy of co-teaching as a method of service delivery for students with learning disabilities. Some of these publications discuss ways in which two teachers can carry out co-teaching in one classroom (e.g., one teaches/one assists, station teaching, parallel teaching, alternative teaching, team-teaching) (Friend & Cook, 2002; Scruggs et al., 2007; Walther-Thomas et al., 2000; Zigmond & Magiera, 2001). The authors of these publications stress that each of these approaches to instruction has advantages and disadvantages that should be taken into consideration when determining which co-teaching model to utilize in each lesson.

No one variation appears to be preferable to another; what seems to be most important is that the co-teachers involved make intentional decisions on a daily basis about the way each lesson will be presented based on the lesson content, student needs, and teacher characteristics (Patriarca, 1997). The

goals and activities of the lesson should dictate the way the teachers work together during instruction. In theory, each team of teachers should utilize a variety of different teaching arrangements throughout the week, month, and semester based on the purposes and goals of the lesson. Problems occur when any one variation becomes habituated with no clear purpose or intent, such as when one partner does all of the instruction while the other partner serves as an assistant. In practice, however, Patriarca et al. (1997a) found that this flexibility in teaching arrangements and roles did not often occur. Once a team settled into a particular way of working together when teaching, that approach tended to be habituated regardless of the lesson goals and activities.

In their review of research on co-teaching, Weiss and Brigham (2000) also examined 15 qualitative research studies that examined how co-teaching is implemented in the schools. They found considerable variation in the ways that co-teaching is implemented, possibly because many co-teachers did not have a clear definition of co-teaching and collaboration. In general, special educators were responsible for modifying instruction, behavior management and discipline, and monitoring of student progress while the general educator took the lead on content instruction. Few studies reported what or how the special educators contributed to instruction in the co-taught classrooms.

Weiss and Brigham (2000) also reported that the researchers in studies they reviewed often defined success in terms of a successful relationship between the adults in the co-teaching partnership rather than measured terms of student success. When researchers did address academic and behavioral changes in students, vague terms such as “improved” or “more accepted” were used (Weiss, 2004). Furthermore, when more extensive evaluation was undertaken, the reports still focused on participants’ satisfaction with co-teaching (e.g., measuring teacher, parent, and/or student satisfaction) as opposed to analyses that focused on student data or outcomes.

Factors that influence successful co-teaching were also examined by Weiss and Brigham (2000). They found that conditions supportive of successful co-teaching included the attitude of general education teachers toward co-teaching and/or students with disabilities, adequate common planning time, mutual respect, a shared philosophy of instruction and behavior management, and administrative support. Successful implementation of co-teaching was often related to variables that are out of control of school leaders (e.g., preexisting friendships between co-teachers, personalities of co-teachers). After their review and analysis of the research on co-teaching, Weiss and Brigham (2000) presented six concerns about the adequacy of the current research base:

1. The authors of co-teaching studies left out critical information about the measures they used to evaluate aspects of co-teaching; this information is necessary in order to interpret and replicate their work.
2. In all but four reports, the authors interviewed teachers who worked in schools in which co-teaching was reported to be successful by the participants (as opposed to including teachers in schools where co-teaching was deemed unsuccessful, resulting in a potential selection bias).
3. Many of the teachers in these studies of co-teaching stated that the major factor that lead to the success or failure of co-teaching was the personality or style of the co-teachers.
4. Most studies showed that neither the general education teacher nor the special education teacher possessed a clear definition of collaboration and co-teaching.
5. The studies described changes in grades and behavior of students in vague terms, such as “improved” or “more accepted.”
6. Few studies reported on the instructional actions of special educators in co-taught classrooms (Weiss, 2004).

Zigmond (2006) examined how co-teaching is implemented in a different way. Because many students with disabilities have deficits in reading and/or written expression, it is critical to understand what literacy demands are placed upon students in the more rigorous courses demanded of them in general education and what co-teachers are doing to support their needs and to develop their literacy skills. In an effort to better understand the reading and writing demands in high school social studies courses, Zigmond studied the social studies instruction of 8 pairs of co-teachers from five different high schools. The eight pairs of co-teachers were observed between three and six times over the course of one semester. Trained observers collected data about teaching behaviors and roles, student activity, and what was written on the

board or displayed on an overhead. The data were analyzed with particular attention paid to the types, amount, and difficulty of reading or writing activities. Results of the data analysis were not what the researcher expected. Results showed that neither students nor teachers were engaged in much reading or writing in these classes either during class time or during homework. Instead, the predominant forms of instruction included lecture, discussion, and question and answer led by the general education teacher. Instead of adapting instruction to meet students' needs or teaching strategies that students could utilize to access complex text, the special education teacher observed from the back or side of the room, rarely interacted with students, and contributed little of substance to the classroom discussion.

Zigmond (2006) speculated that because these classrooms contained a significant number of students with learning and behavior problems, these experienced teachers had adapted and modified their instruction to lessen the literacy demands on their students. Zigmond speculated that it is possible that these teachers had found that their students did not complete homework because they could not read the text or had not developed effective strategies to use when reading challenging text, so they had abandoned the texts in favor of other methods which seemed more fruitful.

Attitudes and Perceptions of Teachers Regarding Co-teaching

A number of studies have examined the attitudes and perceptions of teachers regarding co-teaching. Austin (2001) conducted semi-structured interviews with 12 co-teachers (equally divided between general education and special education) related to their perceptions of co-teaching. Most of the co-teachers reported that the co-teaching experience had been positive. Although the results covered a number of areas, the results related to instruction will be highlighted here. Co-teachers felt that co-teaching contributed to the growth in their teaching skills; special education teachers mentioned an increase in content knowledge while general education teachers cited increased skill in classroom management and adaptation of curriculum and instruction. When asked which instructional techniques they found to be most effective, the majority of co-teachers mentioned cooperative learning and the use of small groups. Most co-teachers thought that the co-teaching strategies they were using were effective in teaching their diverse group of students; they felt that the reduced teacher-student ratio was the primary benefit to students from co-teaching. Teachers also believed that it was valuable to have access to another teacher's expertise and opinion and that the use of remedial strategies and additional review was beneficial to all students. More special education teachers reported that they took primary responsibility for the modification of lessons

and “remediation of learning difficulties” (p. 251) while general education teachers reported that they took primary responsibility for planning and instruction. Co-teachers expressed concern regarding students who may be placed in a co-taught class for social rather than academic reasons and the effect that disruptive students may have on the academic progress of other students in the class.

Rice, Drame, Owens, & Frattura (2007) also studied the perceptions of co-teachers about their co-teaching experience. They conducted focus group and individual interviews with general education and special education teachers who had been involved in co-teaching. Both groups of teachers stressed the importance of co-teaching as a way to sustain inclusive teaching practices and provided examples of what was helpful to them in co-teaching. The general education teachers singled out six specific strengths of the special education teachers they worked with in their most effective co-teaching relationships: professionalism; the ability to communicate about and model instruction to meet diverse student needs; the ability to monitor and assess student progress; the ability to analyze teaching and teaching styles; the ability and willingness to work with all students in the class; and knowledge of and interest in developing necessary content knowledge for the course in which they co-teach.

In a study by Kohler-Evans (2006), co-teachers were asked to anonymously share their perceptions about co-teaching as well as “factual information about the effects of co-teaching” (p. 261). Even though the majority of these teachers did not come to co-teaching voluntarily, 97% of them said that they would participate in co-teaching again if they had the opportunity. Seventy-seven percent said that co-teaching positively influenced student achievement. Only 10% felt that co-teaching did not influence student achievement in any way.

Factors and Conditions Critical for the Success of Co-teaching

Another facet that has been examined in the literature on co-teaching is the factors and conditions associated with the success and failure of co-teaching. Several researchers reported the importance of common planning time, both for short-term lesson planning and long-term unit or course planning, and administrative support (Cook & Friend, 1998; Friend & Cook, 2002; Keefe, Moore, & Duff, 2004; Kohler-Evans, 2006; Patriarca, 1997; Patriarca et al., 1997a; Patriarca, Hendricks, Freeman, & Swift, 1997b). Teachers cannot share and discuss responsibilities for the curriculum, teaching methods, and adaptations unless they have adequate time to plan together. Researchers also report that it is important that teachers have equal and shared responsibility for students, grading, and instruction (Friend & Cook, 2002; Murawski & Dieker,

2004) and that a reasonable balance must be maintained between the number of students with disabilities and students without disabilities (Patriarca, 1997).

Maintaining a balance between the number of students with disabilities and students without disabilities in classes that are co-taught is particularly important. Zigmond and Magiera (2001) recommended that students with disabilities should make up no more than one-third of a class. The remainder of the class should be a mix of high-achieving, average-achieving, and low-achieving students. When the majority of the class is comprised of students with disabilities, at-risk students, students with emotional or behavioral concerns, and low-achieving students, the course is changed. The class may be seen as a lower track course, even if it is not, and it becomes more difficult for the co-teachers to achieve the goals of the course (e.g., presenting challenging curriculum, maintaining high expectations).

Furthermore, it is advantageous if team members are recruited from teachers who volunteer to co-teach as well as teams that are composed of teachers who have compatible personalities and teaching philosophies (Keefe et al., 2004; Kohler-Evans, 2006). In fact, across studies, many teachers reported that the major variable for the success or failure of a co-teaching partnership was the personality or style of the teachers involved (Weiss & Brigham, 2000). In a study by Kohler-Evans (2006), co-teachers from 15 urban and suburban

districts in and around Seattle were asked, “What was the most important feature in a co-teaching relationship?” (p. 261). The top three responses were: (1) having common planning time, (2) maintaining a positive working relationship with your co-teaching partner, and (3) sharing a common philosophy and responsibility toward teaching. Other frequently mentioned responses include similar style, respect for each other, sharing of resources, and equal commitment by both partners.

In an attempt to quantify the variables that are important to the relationship between co-teachers, Noonan, McCormick, and Heck (2003) evaluated the reliability of the Co-Teaching Relationship Scale (CRS) which was designed to rate how co-teachers relate to each other. Comparisons were made between how the co-teachers rated themselves and how they were rated by supervisors. Results suggest that the CRS can provide useful data for both summative evaluations (when completed by external raters) and formative evaluations (when completed by co-teachers).

Chapman and Hyatt (2011) also discuss the importance of building collaborative relationships as the first step in “building a quality collaborative practice” (p. 4). They explain that although some resources on co-teaching emphasize the importance of building relationships between co-teachers, and researchers have developed ways to quantify the relationship between co-

teachers (e.g., Noonan et al., 2003), they found none that specifically addressed *how* to build collaborative relationships. Their work focuses specifically on this aspect of developing successful co-teaching by focusing on the critical conversations co-teachers must have in order to examine the “beliefs, values, and practices” (p. 4) that form the foundation of their work together.

Although the conditions necessary for successful co-teaching are widely accepted, what happens in schools often does not reflect those conditions. Austin (2001) surveyed 92 co-teachers who had been co-teaching for at least one year at the secondary level. Survey and interview questions were designed to provide information about co-teachers’ perceptions of their current experience, recommended practices, teacher preparation for co-teaching, and school-based supports that facilitate co-teaching. Austin found that few of the teachers had volunteered to co-teach (28% of general education co-teachers and 27% of special education co-teachers). When asked about their current co-teaching experience, a significant percentage of both general education and special education co-teachers felt that the general education teacher did the most work in the classroom setting. The co-teachers felt that they worked well together and solicited feedback from each other. Co-teachers felt that their

work together was of benefit to them and contributed to improvements in their teaching.

Co-teachers in Austin's study (2001) were also asked about recommended practices and conditions for co-teaching. One interesting finding was that, although the co-teachers agreed that they should meet daily to plan for instruction, those who actually met daily reported mixed results on the effectiveness of that planning. Also, a majority reported that they valued the equal distribution of classroom management and instructional tasks, but in practice, they did not divide those responsibilities evenly.

Differences were seen in the responses of the co-teachers regarding preparation for collaborative teaching. More special educators than general educators felt that placing student teachers in co-teaching settings was useful or very useful (91.3% versus 70.5%). Similar differences were seen in response to a question about the value of pre-service coursework that addressed co-teaching. Almost half (46.7%) of special educators saw this as very useful content compared to 29.3% of general educators. A third discrepancy was represented in the response to a question about the value of pre-service special education courses for general education teachers: 65.2% of special education teachers saw value in these courses while only 37.8% of general education teachers agreed that taking a special education course during their pre-service

program was valuable preparation for work in inclusive classrooms. Despite teachers' qualifications about the value of coursework on co-teaching, it is a common recommendation that both general education and special education student teachers should have coursework and experience in co-teaching settings during their student teaching experience seems important given the move toward more co-teaching.

A fourth set of questions addressed school-based supports that facilitate collaborative teaching. A significant finding in this category was related to the value co-teachers overall placed on common planning time. An examination of the rating of co-teachers who had experienced common planning time revealed that many co-teachers reported that common planning time was of little importance to them in providing effective co-teaching. Similar results were seen for other items in this section, which addressed administrative support, adequate supplies, in-service training, summer planning time, and classroom modifications. The response patterns of general education and special education teachers were similar across all questions. In theory, they valued the school-based support, but most reported that they had less-than-ideal experiences with that support. As a result, they saw the support as less necessary to effective co-teaching practice. Austin's research (2001)

illustrates the inconsistencies between what research suggests is best practice and actual practices in the schools.

Is What is Done in Co-taught Classes Special or Unique?

One primary advantage of co-teaching is the assumption or hope that co-teaching will improve academic performance for students with disabilities, possibly because of the use of a wider range of research-based instructional practices and support in areas in which they are weakest, generally reading and writing (Bauwens & Hourcade, 1995; Cook & Friend, 1998; Vaughn, Schumm, & Arguelles, 1997; Walther-Thomas et al., 2000). However, some researchers (Boudah et al., 1997; Weiss & Lloyd, 2002) have concluded that there is not much that is special or unique that is taking place in co-taught classrooms. Zigmond and Baker (Baker, 1995a, 1995b, 1995c; Zigmond, 1995b, 1995c) conducted a series of case studies in which they sought to better understand the experiences of students with learning disabilities in schools that practiced full inclusion. One of their primary purposes in this research was to determine whether students with learning disabilities received a *special* education in these co-taught settings. They visited six schools in five states. They were interested in the roles of special and general education teachers, the programs and opportunities provided for students with disabilities in each building, and the educational experiences of students with learning disabilities in these co-

taught classrooms. They found that students with disabilities had access to the same instructional opportunities as students without disabilities. The researchers saw some evidence of modified materials, assignments, and assessments in all settings. Overall teachers seemed willing to make accommodations but expressed concern about the time required to make needed accommodations; teachers were especially concerned about students who required what they felt was an inordinate amount of their time. Some teachers in the study were opposed to making any kind of accommodations for students with disabilities; instead they felt that their students needed to learn to cope with whatever was presented to them in preparation for middle school or junior high.

Zigmond and Baker (Baker, 1995a, 1995b, 1995c; Zigmond, 1995b, 1995c) also focused on the availability of individual instruction that focused on the remediation of deficits in reading or mathematics that varied widely across buildings. In some schools remediation was offered on an infrequent basis. At a school in Pennsylvania, for example, individual tutoring was offered as time permitted (Zigmond, 1995c) or before or after school. In addition, the principal noted that he had “retained pull-out Chapter 1 services once a week, especially for students in Grades 3, 4, and 5. We need to do something for the ‘severe’

cases” (Zigmond, 1995, p. 174). This principal thought that instruction one day per week was needed for students with more significant reading disabilities.

Baker and Zigmond (1995) also expressed concern about planning by co-teachers in general, and more specifically, about the way in which decisions were made about how to support students’ needs. When accommodations were provided, those accommodations generally consisted of a change in instruction for the whole class rather than adaptations to support an individual student’s unique needs. They found that in most cases, adaptations or accommodations were made to meet an immediate or pressing need rather than as a result of careful planning to meet the needs of specific students.

Research over a decade later by King-Sears (2011) and Pearl and Miller (2007) supports the concerns of Baker and Zigmond (1995) regarding the absence of specialized instruction to meet the needs of students with learning disabilities. Over half of special education co-teachers surveyed by King-Sears expressed concern that too many accommodations and modifications were used to minimize students’ need to read and in place of providing instruction to build their decoding and comprehension skills. Pearl and Miller (2007) reported that in co-taught middle school mathematics classes, there was little evidence that students with learning disabilities received the specialized mathematics instruction specified on their IEPs.

Baker and Zigmond (1995) also noted that there seemed to be little monitoring of students' progress in the general education curriculum:

Concern for the individual was replaced by concern for the group—the smooth functioning of the mainstream class, the progress of the reading group, the organization and management of cooperative learning groups or peer tutoring. No one seemed concerned about individual achievement, individual progress, or individual learning. (p. 171)

Baker and Zigmond (1995) concluded that, based on their observations of co-teaching and inclusion across the various schools, the students with learning disabilities were getting a “very good *general* education” (p. 175). School personnel had creatively worked to improve instruction for students with learning disabilities in these schools through co-teaching and special opportunities. In the opinion of Baker and Zigmond, what was missing was “specially designed instruction” (p. 178). Researchers reported that they saw “almost no specific, directed, individualized, intensive, remedial instruction” (p. 178) provided for students with disabilities that were clearly struggling with the work that was assigned to them. The school’s focus was on helping the students to “manage” (p. 178) the general education curriculum and on offering additional support to others who might need assistance. They concluded by saying, “If special education once meant a unique curriculum for a

child with a disability, careful monitoring of student progress, instruction based on assessment data, or advocacy for an individual student's unique needs, it no longer held those meanings in these schools" (p. 178).

Scruggs et al. (2007) and Weiss and Brigham (Weiss & Brigham, 2000) came to a similar conclusion. In their meta-synthesis of qualitative research on co-teaching, Scruggs et al. (2007) found that the dominant instructional variation in the studies included in their meta-synthesis was "one teach, one assist" with the general education teacher taking the lead in fairly traditional classroom instruction while the special education teacher played a subordinate role. According to Cook and Friend (Cook & Friend, 1998), this would be an acceptable practice for a team who is in the early stages of co-teaching, but the one teach, one assist approach predominated across co-teaching teams, even established teams.

Scruggs et al. (2007) reported that instruction in co-taught classrooms in the studies they reviewed looked a lot like traditional classrooms with the addition of another adult. Similar to the findings of Zigmond and Baker (Baker, 1995a, 1995b, 1995c; Baker & Zigmond, 1995; Zigmond, 1995a, 1995b, 1995c), they found considerable agreement across studies that general education teachers favored the use of instructional strategies and techniques that would benefit the entire class. Buckley (2005) attributed this to the

general education teacher's focus on the class as a whole over the individual student. If the special education teacher suggested a particular strategy or technique, general education teachers tended to implement the technique if it could be applied to the whole class. Hardy (2001) reported that the general education teacher in this study utilized some instructional adaptations including advanced organizers, individual instruction, and pacing variations but "a discrepancy was noted in the teachers' awareness of the necessity for specialized instruction...The teachers used whole-class activities 100% of the time...students with disabilities in the co-taught classrooms followed the same sequence of activities and used the same materials as peers" (p. 185). Other researchers (e.g., Feldman, 1998; Magiera, Smith, Zigmond, & Gebauer, 2005; Mastropieri et al., 2005) reported similar findings.

Specialized instructional techniques recommended and utilized by special education teachers such as strategy instruction, instruction in study skills, and self-monitoring were observed infrequently in the studies reviewed by Scruggs and colleagues (2007). More commonly the special education teacher developed outlines and study guides that were used to support the general education curriculum (Trent, 1998) rather than utilizing techniques that are part of the specialized knowledge possessed by special educators. According to Feldman (1998), "The primary strategy to accommodate LD students in this

[secondary] classroom takes the form of [the special education teacher] providing temporary assistance via answering a question, redirecting off task behavior, or prompting attention” (p. 97).

Finally, a study by Magiera and Zigmond (2005) sought to compare the differences between instruction in co-taught and solo-taught classrooms under routine conditions. The results of their study fail to substantiate the additive effects of the addition of a special education teacher to the classroom. They did not find that co-teachers utilized a broader array of instructional grouping arrangements and did not appear to significantly alter instructional practices in their co-taught classrooms. “Instead, the classrooms remained generally the same whether or not two teachers were in the classroom” (p. 84).

Evidence-Based Practices to Support Content Learning

A number of meta-analyses, syntheses, and papers that highlight the instructional components that make a difference in the instruction of at-risk students and students with learning disabilities have been published in recent years (e.g., Graham & Perin, 2007; Lenz & Deshler, 1999; Swanson, 2000; Swanson, Hoskyn, & Lee, 1999; Vaughn, Gersten, & Chard, 2000). Swanson’s (Swanson, 2000; Swanson et al., 1999) meta-analyses suggest instructional practices that enhance learning for students with disabilities. These practices include (a) sequencing, (b) drill-repetition and practice-review, (c) directed

questioning, (d) controlling the difficulty or processing demands of a task, (e) use of technology to enhance instruction, (f) modeling of problem-solving steps by the instructor, (g) small-group instruction, (h) text structures and graphic organizers, and (h) strategy instruction and cues. Weiss (2004) questioned whether these instructional practices (Swanson, 2000; Swanson et al., 1999) are utilized in the co-taught classroom.

A 2010 meta-analysis by Scruggs and colleagues (Scruggs, Mastropieri, Berkeley & Graetz) synthesized research on content-area instruction for students with learning disabilities. Studies included in the meta-analysis included studies across multiple content areas which employed a number of different interventions including hands-on activities, computer-assisted learning, peer mediation, mnemonic strategies, classroom learning strategies, and graphic organizers. The overall effect size was 1.00 (a large effect) indicating that promising evidence-based practices exist which can be used to support content-area instruction for secondary students with learning disabilities. Scruggs et al. (2010) referred back to their 2007 synthesis (Scruggs et al.) of qualitative research on co-teaching in which they reported that interventions such as these are rarely utilized in co-taught classrooms. Instead whole class, teacher-led instruction dominates.

Research to date has provided the field with limited information on what evidence-based practices are being employed in co-taught classrooms that might support or ameliorate the significant academic needs of students with learning disabilities. Scruggs and colleagues conducted a meta-analysis that helps to elucidate this question. The 2010 meta-analysis by Scruggs, Mastropieri, Berkeley, and Graetz specifically examined evidence-based practices that support adolescents in learning challenging content. Scruggs et al. examined studies published between 1984 and 2004 in order to identify evidence-based practices that support secondary students in learning content information. They classified interventions for content learning into the following categories (listed in order of effect size): (a) explicit instruction, (b) study aids including advance organizers and study guides, (c) classroom learning strategies, (d) mnemonic strategies, (e) spatial organizers including charts, graphs, and graphic organizers, (f) hands-on or activity-oriented learning, (g) peer mediation, such as classwide peer tutoring, and (h) computer-assisted instruction. Effect sizes ranged from a high of 1.68 (large effect) for explicit instruction to .63 for hands-on activities (moderate effect) with an overall effect size of 1.00 (large effect). In their discussion of the results, the authors state “these strategies appear to be generally effective *across different content areas and across different educational settings, with moderate to large effects*

in nearly all cases” (p. 446). They note that a significant limitation in the extant research in this area was that the total number of studies of content learning in general education classrooms was far less than studies of content learning in special education classrooms. This is of concern because evidence obtained from qualitative studies of co-teaching suggests that the strategies and practices found to be effective for students with learning disabilities are rarely utilized in co-taught secondary classrooms. In their 2007 synthesis of qualitative research on co-teaching (Scruggs et al.), they reported “teacher-led, whole class instruction with lecture/discussion formats was the dominant form of instruction in inclusive, co-taught classes” (p. 446). Although existing research directs educators to research-based interventions and practices that are effective in helping adolescents learn challenging content, those interventions and practices appear to be underutilized.

Finally, researchers at the University of Kansas Center for Research on Learning (KUCRL) (Lenz & Deshler, 1999) have found that teachers who produce the largest gains in students with deficits in literacy are those who provide instruction that is “consistently responsive, systematic, and intensive” (Deshler, Schumaker, & Woodruff, 2004, p.94). Explicit instruction plays a critical role in helping students in both typically-achieving students and students with disabilities develop the literacy skills and strategies they need to

comprehend text or write at the level required in high school and beyond (Bulgren, Deshler, & Lenz, 2007; Deshler, Palincsar, Biancarosa, & Nair, 2007; Dimino, 2007; Lenz, Ehren, & Deshler, 2007). In today's high stakes environment in which teachers have large amounts of content to cover, Alexander (2007) points out that the push to "cover the content" promotes "mentioning" rather than explicit teaching. Mentioning refers to the "superficial treatment of essential content and strategies" (p. 9), but this approach does not incorporate the effective evidence-based practices associated with effective instruction in literacy across the content areas (Durkin, 1978/79; Lee & Spratley, 2010). Some students may pick up the information when teachers mention the concepts of the curriculum, but most students, especially those with learning disabilities, require more explicit instruction and in-depth apprenticeships in how to read and how to understand the disciplinary subjects. Explicit explanation and modeling are critical components of instruction across all areas of the curriculum. Explicit instruction may be utilized in co-taught classes to the benefit of all students.

Conceptual Framework / School Change Theory

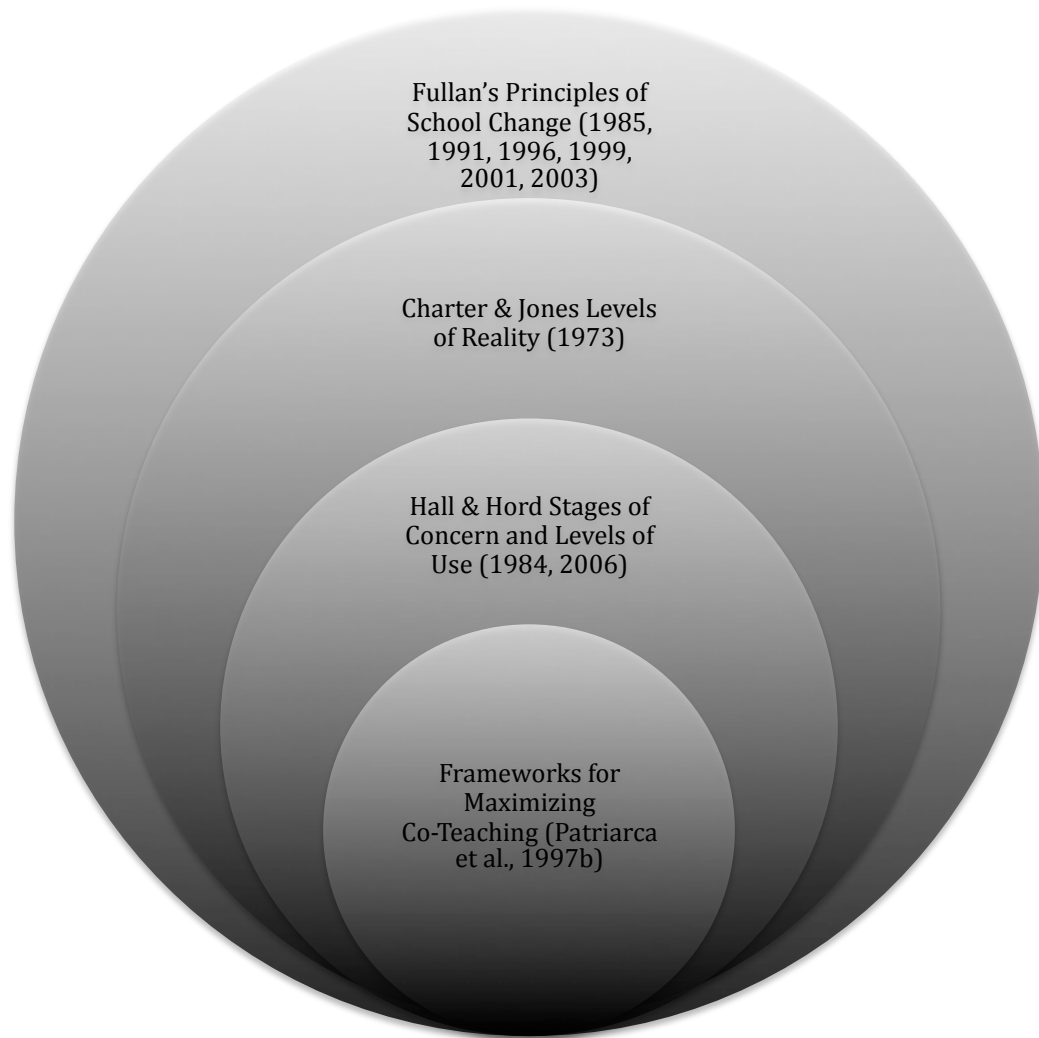
Implementing instructional change in schools is a highly complex endeavor complicated by multiple factors unique to the setting, school, and personnel involved. By considering the implementation of a service delivery model such as

co-teaching through the lens of school change, school leaders may be better prepared to negotiate barriers to implementation and support teachers in their efforts to implement (Gersten, Chard, & Baker, 2000).

The purpose of this conceptual framework (see Figure 1 below) is to provide a lens through which researchers and instructional leaders can analyze the implementation of an innovation, in this case the implementation of co-teaching, and instructional leaders and coaches can better understand the complexities of school change as they support the educators who are implementing co-teaching. This conceptual framework shown in Figure 1 is organized around four major theoretical models that can help explicate aspects of the implementation of co-teaching using models of school change: (a) Fullan's work on school change (1985, 1991, 1996, 1999, 2001b, 2003), (b) Charter and Jones' (1973) four "levels of reality" (p. 6); (c) the Concerns Based Adoption Model (CBAM) developed by Hall and Hord (1984, 2006); and (d) the *Frameworks for Maximizing Co-Teaching Self-Reflection Guide* developed by Patriarca et al. (1997b). Figure 1 illustrates how these theoretical approaches fit together to inform implementation of school change beginning with the broadest view (Fullan) and moving to the most specific (Patriarca et al., 1997b). A discussion of each of the four theoretical approaches follows.

Figure 1

Conceptual Framework



Fullan's work on school change. At the macro level, work by Fullan (1985, 1991, 1996, 1999, 2001, 2003) over the past two decades in the area of school change has yielded knowledge that informs and guides school change efforts. In discussing the complexity of school change, Fullan (1985) explained that effective approaches to school change require an understanding of the

process of school change at level beyond that of a simple set of steps or procedures. According to Fullan (2001), “school change is a dynamic process involving interacting variables over time” (p. 71). Therefore, analysis of school change requires that researchers and school leaders investigate the extent to which teachers and students change their “practices, beliefs, use of new materials, and corresponding learning outcomes” (Fullan, 2001b) in ways that support the desired change. The more factors that are working in support of the change or innovation, the more likely it is that changes in practice will occur. Likewise, if one or more factors are working against the process, implementation will be less successful or effective (Fullan, 2001b).

The support the understanding of the complexity of the change process, Fullan (1985, 1991, 2001) discusses a number of key factors that are critical in the process of change including (1) characteristics of the innovation or change, (2) local characteristics, and (3) external factors. Fullan cautions that we cannot examine these factors in isolation, as each is part of a system of variables that interact to support or detract from the change effort.

Factors related to characteristics of the innovation or change include the need for the change, clarity about the goals and the methods proposed to achieve change, complexity of the change including the difficulty of carrying out the change and the extent of change required, and quality or practicality of the

program or innovation. School leaders may make instructional changes based on what they perceive to be priority needs, but teachers may not recognize or understand the need for the prescribed change. At a time when schools are faced with multiple areas in which improvement is needed, additional consideration of the importance of perceived needs relative to other needs is warranted. In the Rand Change Agent study, Berman and McLaughlin (1976, 1978) found that a “problem-solving orientation (e.g., the identification of a need which is linked to the selection of a program) was strongly related to successful implementation” (Fullan, 2001, p. 75) while a discrepancy in the recognition or understanding of the need for the innovation may diminish the chances of successful implementation.

Clarity about goals and means is another critical factor discussed by Fullan (2001). Once the decision has been made to change instruction, it is important that teachers understand what it is that the change entails. According to Fullan (2001), issues related to clarity are present in nearly all studies of school change:

...from the early implementation studies when Gross and associates (Gross, Giacquinta, & Bernstein, 1971) found that the majority of teachers were unable to identify the essential features of the innovation

they were using, to present studies of reform in which finding clarity among complexity remains a major problem (Fullan, 1999). (p. 77)

At a time when schools may be program rich / focus poor, it may be unclear to teachers what it is that they are supposed to do differently and how this is different from what they were asked to do previously (Charter & Jones, 1973).

A related issue common to implementation of innovations or new programs in schools is what Fullan (2001) calls false clarity, when an innovation is implemented based on an over-simplified notion of what the innovation involves resulting in superficial implementation.

Complexity is the third factor Fullan (2001) discusses related to characteristics of a change. Many changes being attempted today are complex both in knowledge required, changes in beliefs that must occur, skills that must be developed, and coordination of strategies and materials. Simple changes such as changes in the building schedule may be easy to understand, inexpensive, and can be implemented relatively quickly, but without significant changes that strengthen the instructional core (Deshler, 2005), significant improvement in student learning may not result.

Finally, Fullan (2001) says that quality and practicality of the innovation must be considered. At times, decisions about innovations are made without adequate investigation of the quality and practicality of the innovation. Even if

adequate quality has been determined, if elements of the infrastructure core (professional development, materials and resources, time, and instructional coherence) are not in place to support the innovation, the potential power of the instructional innovation is diminished (Deshler, 2005).

The second category of key factors in the implementation process includes local factors such as the school district, community, principal, and teachers. Consideration of the unique nature of these factors is critical; what works in one district may fail in another district because of differences in the organizational conditions. Although the unit of change may be the individual school, complex instructional changes can flourish or fail based on supports offered by the larger system. These factors explain why some schools have a record of successful implementation while others try one new program after another with little success. Fullan (2001) suggests that in order for school reform to be successful and sustainable, school staff including administrators, faculty, and support staff must share a common vision, build a collaborative culture, and integrate changes into the organization of the school (Fullan, 1991, 2001b).

External factors, those factors that situate the school and district within the broader society, are the last set of factors that must be considered in any implementation effort. Although the standards-based reform effort began in

the early 1990s, the real strength of its tenets was not felt until the passage of NCLB (2001) and the reauthorization of IDEA in 2004. NCLB required that all states develop a statewide accountability system that included setting state standards in mathematics and reading, assessment of all students on these standards annually in grades 3 – 8 and once in grades 10 – 12, and reporting to the public on the results of the assessments. Ninety-five percent of all students are required to participate in the state assessments, and a limited number of students with disabilities are allowed to take alternative assessments. Test results must be disaggregated and reported for a number of subgroups including students with disabilities, English Language Learners, certain racial and ethnic groups, and low-income students. In order to make Adequate Yearly Progress (AYP), a building must make AYP as a whole and all subgroups must also make AYP. These requirements gave teeth to the requirement for stronger accountability and applied significant pressure to local districts to make changes that would result in improved test scores.

In addition to the requirements of NCLB, at the high school level, a number of states require students to pass proficiency tests in order to graduate and the number is growing. California was recently mired in controversy as it implemented its version of a proficiency test that ALL students must pass in order to earn a high school diploma (Samuels, 2007). In addition, many states

have increased graduation requirements by adding to the requirements in mathematics, English, science, social studies, and foreign language.

All of these examples of the result of increased accountability measures provide context for the intense pressure on schools to implement new programs and/or instructional innovations. External requirements for reform put pressure on local districts to change, and to change quickly, sometimes providing incentives and support to enhance implementation. Fullan (2001) emphasizes that whether change occurs depends less on the desires and demands of policymakers and more on the many factors interacting with the policy mandates and new programs.

Charter and Jones' (1973) levels of reality. The second component of this conceptual framework focuses on evaluation of the implementation of a new program or innovation. Administrators and/or implementers want to know whether the implementation has been effective. This is usually determined based on whether it resulted in changes in student learning and/or behavior. According to Charter and Jones, before school leaders can determine whether a new innovation or practice is making a difference for students, the evaluator must determine whether the innovation is being used or implemented as intended as what is actually being done related to implementation of the innovation may look very different from classroom to

classroom (Hall & Hord, 1984, 2006). If this is not done, Charter and Jones caution that school leaders and researchers risk evaluating “non-events” (p. 5), a situation in which the control and experimental conditions do not differ significantly from each other because of low “levels of use” (Hall & Hord, 2006, p. 158) or differential implementation. This can occur when implementers of the innovation have not fully implemented, do not fully understand the intricacies of the innovation, or when an innovation is implemented based on an over-simplified notion of what the innovation involves resulting in superficial implementation (Fullan, 2001).

According to Charter and Jones (1973), it is difficult to say definitively that yes, Innovation X is in place and has been adopted. Charter and Jones present a perspective on evaluation of implementation focused on four levels of reality that is helpful in doing that and describe the four levels of reality that can be used to describe the stages through which implementers progress on the way to the assertion that a particular innovation or approach has been adopted. They explain that they refer to these stages as levels because they are “ordered according to their proximity to the attributes of students which they are designed to affect – learning outcomes” (p. 6). In the case of implementation of co-teaching, school leaders can utilize the levels defined by Charter and Jones in their analysis of implementation.

Level 1 is the public announcement, the commitment by the institution that they intend to launch a particular initiative. During this phase, goals are set, resources are reallocated, and support is garnered. Opposition may arise at this point and administrators may be questioned about the new innovation. In Level 2, structural changes are made to allow the innovation to be implemented. During this phase, materials may be purchased, professional development provided, and schedules altered to support implementation. While Level 2 changes can be easily documented and are important to the success of an innovation, change at this level is usually not sufficient to result in changes in student learning. Deshler (2005) explains that,

Historically, the vast majority of initiatives aimed at improving secondary schools have focused on non-instructional factors (e.g., moving to block scheduling, changing from a junior high school to a middle school configuration, etc.). The prevailing assumption has been that the quickest and most effective way to improve student outcomes was to change infrastructure factors. Instruction, if considered at all, was largely an afterthought in most secondary school improvement efforts. (p. 2)

Thus, the research of Deshler has focused on first strengthening the instructional core (Level 3 changes) and then following that with a determination of infrastructure needs.

In Level 3, teachers develop a deeper understanding of the innovation and how it can be used to increase student learning (Gersten et al., 2000). As a result, teachers begin to teach differently. Gross et al. (1971) refer to the “degree of actual implementation” (p. 19) in their discussion of implementation. In their view, the behavior of teachers must be observed to change in ways that are required by the innovation before school leaders assert that an innovation has been implemented. They explain that teachers’ use of the innovation is what constitutes implementation, not merely the purchase of materials and implementation of the structural changes needed to support the instructional innovation (Level 2 changes). As teachers begin to understand the intervention more deeply, they begin to talk about their students and the impact of the innovation on students. This leads to efforts to refine their instruction so that student learning is enhanced (Gersten et al., 2000).

Finally, at Level 4, Charter and Jones (1973) discuss the need to consider changes in instruction and learning from the students’ perspective and emphasize the need for school leaders to “attempt to describe or measure the school’s educational program as experienced and enacted by students” (p. 7). As innovations are implemented, school leaders, teachers, and other instructional personnel must consider the impact on student learning in ways

that go beyond the exclusive use of achievement test scores as a measure of effectiveness of implementation.

Concerns-Based Adoption Model (Hall & Hord, 1984, 2006). A third model for educational change is offered by Hall and Hord (1984, 2006). Hall and Hord provide school leaders with a research-based approach to innovation – the Concerns-Based Adoption Model (CBAM) - that allows researchers and instructional leaders to look more specifically at the concerns of the implementers (Stages of Concern) and their level of implementation (Levels of Use). CBAM offers a way to analyze, understand, and address predictable concerns about educational change. Research by Hall and Hord has shown that in the process of implementation of any innovation, adopters go through a process of adoption that usually does not progress forward in a straight line. According to Hall and Hord, this process involves at least two ways to describe change at the individual or group level, Stages of Concern and Levels of Change. Hall and Hord refer to the affective components including how people react and feel and their perceptions and attitudes about the change as Stages of Concern (see Table 1).

Table 1

Stages of Concern: Typical Expressions of Concern about an Innovation

Stage	Stages of Concern	Expressions of Concern
6	Refocusing – refines the innovation to increase effectiveness	I think that we could make some changes that would make this work even better.
5	Collaboration – interested in collaborating with others to increase the effectiveness of the innovation	I am wondering about how what I am doing with my students compares to what other teachers are doing with their students. How can we work together to improve our instruction?
4	Consequence – interested in the impact of this innovation on students	How is my use of innovation X affecting my students?
3	Management – concerned about how to manage the tasks and logistics associated with the innovation	It seems like I will have to spend so much time planning and preparing to teach using this program.
2	Personal – interested in the impact the innovation will have on him/her	How will implementing this new program impact me?
1	Informational – interested in gaining some information about the innovation	I am interested in learning more about this program.
0	Awareness – aware that an innovation has been introduced but not concerned or interested in it	I am not concerned about this.

(Adapted from Hall & Hord, 2006, p. 139)

Some educators progress through all stages but may skip around or may express concerns related to several levels simultaneously. Being aware of the

concerns of teachers implementing an innovation such as co-teaching and the role those concerns play in facilitating or hindering implementation allows school leaders to tailor the type of support offered based on perceived or expressed concerns.

Hall and Hord (1984, 2006) address the behaviors and actions in relationship to implementation as Levels of Use (see Table 2).

Table 2

Levels of Use of the Innovation

U S E R S	VI	Renewal	The user monitors and evaluates the quality with which the innovation is used, seeks modifications or better ways to present the innovation that will result in greater impact on students, seeks out and examines new information about the innovation and its use, and explores new goals for personal use and for use of the innovation system-wide
	V	Integration	The user collaborates with colleagues regarding use of the innovation to achieve a greater collective impact on students within their grade level, department, or school
	IVB	Refinement	The implementer varies use of the innovation to improve results with his/her students

Table 2 (cont'd)

	IVA	Routine	Use of the innovation has become routine / stable. The user is implementing as intended but few if any changes are made during implementation. Little preparation or thought is given to ways to improve implementation use or results.
	III	Mechanical Use	The user focuses most of his/her effort on short-term, day-to-day use of the innovation. Little time is spent reflecting on how the innovation is put into practice by this user. Some changes may be made, but the changes tend to be for the convenience of the user, not to improve student outcomes. The users focus is on mastering the individual components of the innovation resulting in superficial or disjointed use.
	II	Preparation	The user is preparing to implement the innovation in his/her classroom.
N O N U S E R S	I	Orientation	The user has recently received professional development in the innovation or is exploring the value and potential benefits of a new innovation
	0	Nonuse	The user has little or no knowledge of this innovation and is not involved in seeking information about this innovation

Adapted from p. 160, Hall & Hord, 2006

By using the Levels of Use as a tool to assess where teachers are in the process of implementing a new program or innovation, instructional leaders can evaluate more clearly the implementation and offer the follow-up support needed to

increase implementation. If the Levels of Use are assessed periodically throughout implementation, instructional leaders and/or coaches can compare where teachers were and see how much progress has been made (Holloway, 2003).

In addition to the named Stages of Concern and Levels of Use, at each stage and level, implementers' behaviors, actions, feelings, attitudes, and perceptions will fall along a continuum. Examination of where co-teaching teams lie on a continuum of use can provide school leaders with information necessary as they work to support higher levels of use.

Frameworks for Maximizing Co-Teaching (Patriarca et al., 1997a, 1997b). At the micro level, Patriarca and colleagues (1997b) developed the *Frameworks for Maximizing Co-Teaching Self-Reflection Guide*; this tool was developed specifically to support co-teaching teams in the analysis and development of their co-teaching practice with the goal of improving instruction for students with disabilities. Specific to the adoption of co-teaching as an example of school change, this final piece of the conceptual framework offers a fine-grained view of co-teaching as related to school change and provides a tool that can help to better understand and improve co-teaching.

This tool was developed as a result of a study conducted by Patriarca and colleagues (Patriarca, 1997; Patriarca et al., 1997a) in the early 1990s. The

goal of their research was to examine the practices of co-teachers in order to identify characteristics of good co-teaching and promising models for co-teaching. To do this, the researchers conducted classroom observations and interviews with 65 co-teachers who taught in 32 classrooms across the state of Michigan. The researchers developed specific criteria for inclusion of a co-teaching team in the study, which included: (1) the teachers co-taught one or more academic subjects (e.g., mathematics, science, ELA, or social studies), (2) the co-teaching team had worked together for a minimum of one year, (3) the co-teachers worked together for a minimum of one hour per day five days per week, (4) the co-teaching team was made up of two certified teachers, and (5) the team was perceived as effective and was nominated by the building or district administrator. Once teams were identified for inclusion in the study, the researchers observed each co-teaching teams on a typical day in their classroom. This observation was followed by an individual interview with each co-teacher. Interview questions addressed planning, the nature of the co-teaching relationship, instruction, parent communication, measures of success, challenges, and other relevant topics, which allowed researchers “to assess ‘quality’ and ‘degree of co-ness’ relative to a number of duties and responsibilities of teaching” (Patriarca, 1997, p. 6).

Analysis of the data led to the development of a framework that could be used to analyze co-teaching. Eight dimensions integral to effective co-teaching comprise the *Frameworks* (see Table 3 below). Under each dimension, Patriarca and colleagues (1997a, 1997b) identified one or more factors related to that dimension.

Table 3

Frameworks for Maximizing Co-Teaching Dimensions and Factors

Dimensions	Factors
1. Purposes, Goals, and Expectations	• Shared purposes, goals, and expectations for the partnership • Shared purposes, goals, and expectations for student progress
2. Classroom Organization and Management	• Planning and organization of classroom space • Communication of rules and routines to students • Development of a plan for classroom discipline and the sharing of that plan with students
3. Planning	• Time allocated for common planning • Planning – one or both • Planning – lesson, unit, or course • Planning – routinized or conceptual
4. Instruction	• Frequency of lesson modification • Degree of lesson modification • Division of labor – instruction and management
5. Curricular Assessment / Student Grading	• Assessment of effectiveness of curriculum and instruction • Variation in assessment method

Table 3 (cont'd)

6. Responsibility for Student Welfare	• Who is responsible for which students?
7. Parent Communication	• Parent contacts – who contacts which parents • Conferences – who conferences with which parents
8. Building / Central Administration Support	• Building culture and support • Resources provided at the building level • Building administrators' awareness of need to assess impact of co-teaching on students • Resources provided by central administration • Central administrators' awareness of need to assess impact of co-teaching on students

Adapted from (Patriarca et al., 1997b)

Each factor addresses one characteristic of “co-ness” which can be rated along a continuum from less collaboration or co-ness on one end to more collaboration or co-ness at the other end. All dimensions and factors are interrelated. The *Frameworks* provide a way for members of a co-teaching team to understand, analyze, and examine the various aspects of co-teaching. The *Frameworks* provide a tool to facilitate conversations that must take place as teams develop common purposes, goals, and expectations.

The *Frameworks for Maximizing Co-Teaching Self-Reflection Guide* (Patriarca et al., 1997b) was used as a tool in the Michigan Co-Teaching Project. The major goal of the Michigan Co-Teaching Project (MCTP) was to provide

professional development focused on improving co-teaching to teams of co-teachers across the state. This researcher was a part of the development team and served as a professional developer for this project. Patriarca and her colleagues approached the development of the MCTP and the use of the *Frameworks* with the philosophy that good professional development does not tell teachers what to do. Instead, it provides them with the conceptual tools and emotional supports they need to change their practice in light of new knowledge. The *Frameworks for Maximizing Co-Teaching Self-Reflection Guide* was used to support co-teachers in the analysis and development of their co-teaching practice with the goal of improving instruction for students with disabilities.

The conceptual framework described above can be used by researchers to study the implementation of a new program or initiative by considering the implementation first from the macro level (e.g. global principles of school change) followed by a more fine-grained view (e.g. evaluation of implementation, concerns of implementers and levels of implementation, and dimensions and factors specific to the implementation of co-teaching). In addition, instructional leaders can use this conceptual framework to plan for and successfully launch and support a new program or innovation.

Summary

The research base regarding the effectiveness of co-teaching is lacking in several areas. It is for this reason that Zigmond and Magiera (2001) urged educators to “Use Caution” in a Division for Learning Disabilities Current Practice Alert on co-teaching. Research is needed in several areas including determining whether students in co-taught settings actually experience a wider range of or more effective instructional practices and strategies in co-taught classes especially in the area of literacy, whether students’ participation and engagement are greater in co-taught classes, whether student achievement is greater, what co-teachers do to enhance student access to the curriculum and student outcomes, and what is it that secondary co-teachers do to enhance student achievement when there is a mismatch between literacy demands and students’ literacy skills. This study attempts to address some of these gaps in the literature by focusing on the following research questions:

Research Questions

1. What practices do co-teachers report that they employ to support access to the general education curriculum for students with disabilities and other students at risk for academic failure?
2. What factors support or constrain the use of co-teaching as a way to support access to the general education curriculum?

3. How can these results be explicated in terms of school change theory?

Chapter 3

Methods

A multiple methods approach was used to investigate the instructional practices that co-teachers in one suburban high school in the Midwest reported to employ to support access to the general education curriculum. The purpose of this research was to investigate not only what techniques, methods, or strategies co-teachers use to support access to the general education curriculum but to examine the factors that influenced teachers' decisions to use (or not use) evidence-based strategies and routines that have been recommended for use in teaching adolescent students with disabilities in high school settings. The present study builds on the limited literature that defines what co-teachers do as they work together to support access to the general education curriculum. Data collection focused on interviews with co-teachers, a survey completed by each co-teacher, and classroom observations. The use of these methods allowed for more in-depth study of co-teaching practices and factors influencing co-teachers' decisions than would be possible using other approaches (Bishop, Brownell, Klingner, Leko, & Galman, 2010, p. 79).

The research questions that guided the collection and analysis of the data included:

1. What practices do co-teachers report that they employ to support access to the general education curriculum for students with disabilities and other students at risk for academic failure?
2. What factors support or constrain the use of co-teaching as a way to support access to the general education curriculum?
3. How can these results be explicated in terms of school change theory?

These questions are significant because few studies have reported on the specific instructional actions utilized by co-teachers to support access to challenging curriculum. Adding to this knowledge base will assist researchers, administrators, and educators as they seek to improve student outcomes in co-taught settings.

Participants and School Context

Role of the researcher. The researcher functioned as a participant-observer in this study. The researcher worked for 19 years in the building where the study was conducted, first as a resource room teacher (13 years) - and most recently as a teacher consultant for students with disabilities (6 years). The researcher knew the teachers who agreed to participate in the study for varying lengths of time (from 6 months to 19 years) and had co-taught with some of the teachers in the study. As the special education department worked to improve co-teaching in this building, the researcher

participated in problem-solving discussions with the study participants and other members of the special education department.

Description of research site. This research was conducted in the spring semester of 2009 at a suburban high school in west Michigan that serves approximately 1,400 students. This high school is one of three in a district with a student population of approximately 10,000 students. The district has 17 schools-- three comprehensive high schools, one alternative high school, five comprehensive middle schools, one middle school focused on environmental education, and eight elementary schools. The demographic makeup of the student population in the district is shown in Table 4.

Table 4

Demographic Makeup of Student Body

Demographic Group	Percent
White	89.8%
Black	3.0%
Hispanic	1.4%
Asian/Pacific Islander	5.6%
American Indian / Alaska Native	0.2%

Table 4 (cont'd)

Demographic Group	Percent
Economically Disadvantaged	5.4%
Students with Disabilities	10.0%

("Central High School test scores and stats," 2008)

The school selected for this research was chosen because it met the parameters of this study. In addition, the researcher worked at this high school and was familiar with co-teaching in this building. Specifically, the researcher looked for a building that met the following criteria:

- the presence of high school students (with and without disabilities) who struggled to pass courses required for graduation under the Michigan Merit Curriculum (MMC),
- co-teaching partnerships that existed between general and special education teachers in ninth- and tenth-grade courses required by the MMC (social studies, mathematics, English language arts, and science),
- co-teaching teams who had worked together for varying amounts of time (e.g., some co-teaching teams had worked together for several years, while other teams were in their first year of co-teaching),
- the school had recently changed from a full continuum of special education services which included reading and writing strategies courses

and/or content courses taught in special education to a service delivery model primarily focused on co-teaching,

- co-teachers varied in their expertise and professional development in co-teaching: some co-teachers had attended professional development workshops or courses in co-teaching while others had no professional training in co-teaching, and
- the principal agreed to allow faculty to participate in the study.

The high school where this research was conducted had recently changed from a full continuum of special education services to a service delivery model focused primarily on co-teaching in general education. Beginning in the year this research took place, the district adopted a service delivery model that focused on co-teaching in general education as the primary service delivery option. Several factors led to this change. First, new graduation requirements in the State of Michigan were approved by the state legislature for students graduating in 2011. Essentially, the MMC requirements stated that all high school students must take more difficult courses (e.g., four years of English, three years of science including chemistry or physics, four years of mathematics including Algebra 2, and three credits of social science) that are aligned with state standards in order to graduate with a diploma. However, rising standards also altered the learning climate and teaching dynamics in the high school. Both

students with disabilities and students without disabilities struggled to pass some of the courses required for graduation under the rigorous new statewide graduation requirements. Efforts to address the needs of an increasingly diverse group of struggling learners in the general education classroom led school administrators to problem-solve and to consider alternative teaching arrangements that involved co-teaching between general education teachers and special education teachers as they worked together to support student learning in a more diverse and challenging academic setting. This led to a shift in policy that favored co-teaching by general and special education teachers as they planned and implemented more rigorous high school curricula.

In addition, there were added pressures associated with changes in the requirements for highly qualified (HQ) status of special education teachers at the secondary level. In the past, special education teachers taught courses in reading and writing strategies and other learning strategies that would build students' skills and develop skills that would allow them to better meet the academic demands of their general education courses. In addition, special educators taught a number of content-area courses (e.g., Developmental English, Developmental Mathematics, Developmental World Studies) in the special education department for those students who were unable to meet the requirements of those courses in general education; students earned credit

toward graduation upon successful completion of these course. In general, lower level textbooks were used and the courses moved at a slower pace than in the equivalent general education course. Some of the same objectives were addressed, but the developmental courses did not fully address all or even most of the objectives covered in the general education equivalent of the course. Essentially, these were lower track and slower-paced courses. At that time, secondary special education teachers earned HQ status allowing them to teach these courses by taking the Elementary Michigan Test for Teacher Certification (MTTC). When that route to HQ was disallowed by the Federal Department of Education, new requirements for HQ were put into place and the special education teachers in the high school building could no longer teach content-area courses required for graduation because they were not deemed to be highly qualified in science, social studies, mathematics, or English. Thus, the only avenue that secondary special education teachers had available to teach secondary classes was through a co-teaching partnership with general education teachers.

Little is known about the efficacy of co-teaching in terms of student achievement. Although specific measures of student achievement were beyond the scope of this study, it was important to learn more about the co-teaching arrangements and methods that were implemented in this building, specifically

how teams of secondary teachers collaborated in order to help students access the general education curriculum. This is important given that one of the administration's primary goals in co-teaching was to reduce the number of students who were failing courses required for graduation.

Description of teacher participants. In order to minimize researcher bias, the researcher asked one of the assistant principals in the building to suggest co-teaching teams for possible inclusion this study. The assistant principal was asked to suggest teams that she felt were very effective in their approach to co-teaching, as well as to identify co-teaching teams that she felt were more typical of co-teaching teams in the school. The researcher suggested that she consider a variety of criteria when making her selections including:

- the teams should represent a range of implementation practices from more innovative to more typical (e.g., instructional practices and techniques, assessment techniques, collaboration, planning, etc.),
- teams should represent all four content areas (science, social studies, English, and mathematics) in the general education curriculum, and
- the teams should vary in the length of time that the teachers have co-taught together.

The administrator suggested 10 teams involving 16 different teachers. The researcher received only the list of suggested teams from the administrator. No additional information was provided to the researcher about the administrator's opinion of the teams' effectiveness or innovativeness. This was intended to prevent researcher bias during data collection, allowing the researcher to reach her own conclusions about the efficacy of the practices exhibited by each team based on the actual data collected.

The decision was made to focus on four of the five teams co-teaching in English/Language Arts (ELA) and science. One reason for the selection of teams co-teaching in ELA and science was the unique demands presented by each content area and the needs of students at risk for academic difficulty in each content area. ELA and science are courses in which some students struggle to succeed at this school. At the same time, the researcher felt that co-teachers in ELA and science might face different student concerns or utilize different techniques in supporting access to the disciplinary content of the general education curriculum (Lee & Spratley, 2010). The four teams who were selected varied in years of experience in co-teaching; two teams were in their first year of working together while two additional teams had worked together for three years or more. The fifth team was excluded because the general education teacher was a second year teacher who was co-teaching with four

different special education teachers. It was felt that this situation was not optimal because it would be difficult to interpret and contextualize her comments and responses with respect to a specific co-teaching experience. The researcher invited the four co-teaching teams which included seven different teachers who were currently co-teaching at the high school, to participate in the study. Table 5 below provides more information about each team.

Table 5

Information about Participating Co-Teaching Teams

	Special Education Teacher	General Education Teacher	Content Area	First year together	3 or more years together
Team A	Ms. Russell	Ms. Armstrong	English	√	
Team B	Ms. Russell	Ms. Pine	Science		√
Team C	Ms. Carey	Mr. Ball	English		√
Team D	Ms. Gregg	Ms. Patrick	Science	√	

Table 6 provides additional information about each co-teacher who participated in this study.

Table 6

Information about Participating Teachers

Teacher	Race/ Ethnicity	Years of Experience Teaching	Years of Experience Co-Teaching	Highest Degree Earned	Highly Qualified in What Areas
Ms. Russell	Caucasian	11	5	MA	Elementary Education
Ms. Armstrong	Caucasian	35	1	MA	English Social Studies (all areas)
Ms. Pine	Caucasian	20	3	MA	Science
Ms. Carey	African American	6	5	BA	Elementary Education
Mr. Ball	Caucasian	15	10	MA	English Communications
Ms. Gregg	Caucasian	23	15	MA	Elementary Education
Ms. Patrick	Caucasian	Unknown	Unknown	Unknown	Unknown

Ms. Russell. Ms. Russell is a special education teacher who earned her Master's degree in special education; she is highly qualified in elementary

education. She has co-taught for five years with teachers in social studies, ELA, science, and in reading and writing strategies classes. This was her third year co-teaching with Ms. Pine and her first year co-teaching with Ms. Armstrong. Ms. Russell is active in the special education department and has provided leadership in several instructional initiatives including implementation of *Language! The Comprehensive Literacy Curriculum* (Greene, 1998), Strategic Instruction Model Learning Strategies ("Strategic Instruction Model," 2009), and READ 180 (2011).

Ms. Armstrong. Ms. Armstrong is an experienced general education teacher with 30+ years of teaching experience. She is highly qualified in all areas of social science and in English and has earned her Master's degree. She has had students with disabilities and at risk students in her courses for many years, but this was her first year co-teaching with a special education teacher. She co-taught a sophomore English class with Ms. Russell. Ms. Armstrong is active in curriculum committees at the building and district level.

Ms. Pine. Ms. Pine is also an experienced teacher with 20 years of teaching experience in general education; she is highly qualified in science and has her Master's degree. She has co-taught for three years with Ms. Russell. The first two years they co-taught a freshman earth science course. During the year that this study took place, they co-taught a biology class that enrolled

mostly freshmen. Ms. Pine is active in the science department and on building and district committees.

Ms. Carey. Ms. Carey is a sixth-year teacher who has co-taught English 10 with Mr. Ball for the past five years. She also co-teaches the same course with a second year teacher. The three teachers worked together throughout the year to plan for their courses. In the past, Ms. Carey co-taught with one other English teacher. She earned her Master's degree in special education and is highly qualified in elementary education. She is co-advisor of Student Council and is active in the special education department and in school activities.

Mr. Ball. Mr. Ball has co-taught for ten of the fifteen years he has taught at this high school. He is highly qualified in English and communications and has earned his Master's degree. He has co-taught with a number of special education teachers but has worked exclusively with Ms. Carey for the past five years co-teaching English 10. He is the varsity basketball coach at this high school and is active in school activities.

Ms. Gregg. Ms. Gregg is a special education teacher who has a wide range of experience co-teaching in mathematics, science, English, and social studies, and she has co-taught during 15 of her 23 years of teaching. She has her Master's degree and is highly qualified in elementary education. She co-taught a freshman biology class with Ms. Patrick during the year in which this

study took place in addition to co-teaching English 9 and 11 with teachers who did not participate in the study. This was the first year that Ms. Patrick and Ms. Gregg co-taught together. Ms. Gregg has served as the department chair for special education for a number of years and has served on many building and district committees. She was recognized as the Teacher of the Year in the school district and was a finalist for State Teacher of the Year.

Ms. Patrick. Ms. Patrick was new to this building during the year in which the study took place but has previous experience co-teaching in Hawaii and in Michigan. This is the first year she has worked with Ms. Gregg.

Ms. Randall. One additional teacher was interviewed for this study. Ms. Randall co-taught U.S. History in this building in the 1990s when co-teaching was relatively new in this building, and she was a founding member of the Michigan Co-Teaching Project, a professional development project sponsored by the Michigan Department of Education (MDE) that sought to support and develop co-teaching in Michigan. Because of her experience in co-teaching and her involvement in the MDE project, Ms. Randall could report on the history of co-teaching in this building and provide a perspective that may be different from the teachers who are currently involved in co-teaching. She has taught social studies and French for 24 years. She is highly qualified in both areas and earned her Master's degree in Curriculum and Instruction.

Some of the teachers who participated in this study of co-teaching participated in a one-day professional development workshop two years prior to the study that focused on activities that could be used when co-teaching. The teachers have received no additional professional development since that time.

Student involvement. Teachers were asked for general information on the composition of their co-taught classes including the number of students in the class and number of students with disabilities in the class. However, no information about individual students was collected for this study, since the study focused on the instructional actions of the special and general education teachers. Students were involved only in their role as students in the classes that were co-taught by teacher participants. Students with disabilities were included in all of the general education classes taught by the co-teaching teams. The majority of these students were students with learning disabilities. The classes that were observed also included students with emotional impairments, students with cognitive impairments, students with autism spectrum disorder, students with other health impairments, and students without disabilities. Each of the four co-taught classes contained between 25 and 30 students.

Informed consent procedures. Approval to conduct this research was obtained through the Institutional Review Board (IRB) at Michigan State University before the research began. Prior to the start of the study, teachers

were asked to give written consent to participate in this study. The privacy of all participants was protected to the maximum extent allowable.

Data Collection

Data collection for this study lasted approximately four weeks. Data sources included an interview with each co-teacher, a survey completed by each co-teacher, and classroom observations. Classroom observations were conducted during the final seven days of classes of the spring semester. Some teacher interviews were conducted before the end of the school year; additional interviews were conducted after the school year ended. The teachers completed the survey on their own time either before or after the interview.

Semi-structured interviews. To understand what co-teachers do in the classroom, the researcher interviewed each teacher using a semi-structured interview protocol (see Appendix A). The researcher developed the semi-structured interview protocol based on the existing literature on co-teaching, as well as suggestions and feedback from the researcher's committee. Interview questions were structured around (a) questions about participants' background experiences and teaching assignment; (b) participants' perspectives on the purposes, benefits, and overall context of the co-taught classes; (c) the extent of planning for instruction in their co-taught classroom; and (d) participants' beliefs and appraisal of their responsibility for the implementation of specific

instructional practices related to the assessment and instruction of the high school curriculum.

In designing the interview, one set of questions was designed to gather information about the teachers' current and past co-teaching assignments, the number of students in their current co-taught class (general education, special education, and at-risk students), previous co-teaching experience, and their attendance at professional development workshops or conferences on co-teaching.

A second set of interview questions focused on the participants' perspectives on the purposes, benefits, and overall context of their co-taught class(es). Each member of the participating co-teaching teams was asked about the reasons that their class was co-taught, the characteristics of the co-taught class, and the benefits of co-teaching for both students and teachers. They were also asked to provide an overview of a typical class period in their co-taught classroom.

The third section addressed the academic challenges that students encountered in their co-taught course, the role that planning for instruction played for the co-teaching team as they worked together to teach a diverse group of students, and how instructional planning was accomplished. Teachers were asked to describe what they did individually and together to plan for

instruction. Furthermore, the interview delved into the individual responsibilities assumed by the two co-teachers in the planning process. For example, teachers were asked, “Who does most of the planning?” “How and why was the decision made to plan in this way?” “If instructional planning decisions are not made jointly, who makes those decisions and why are decisions made in that way?” The full set of interview questions is included in Appendix A. In addition, an attempt was made to identify individual and joint actions that co-teachers took to plan in advance for the needs of their diverse group of students as distinguished from changes that co-teachers make “on the fly” or on a moment-to-moment basis given their observations of students during instruction.

Questions about instruction focused on what teachers did once the period began. Specifically, teachers were asked “How are instructional duties during class time divided?” “Is this pattern stable or flexible?” “How and why was the decision made to divide instructional duties in this way?” “How is instruction typically delivered?” “What do the co-teachers do differently in this class to meet the needs of their students?” “What do they do to support the needs of struggling readers and writers?” “How is their instructional time focused?” “Is instruction divided between teaching the content and teaching students how to learn the content or focused solely on the content?” The set of questions related to instruction is shown in Appendix A.

In addition, the role of the specialized knowledge possessed by each member of the team was explored by examining how working with the co-teaching partner had changed or influenced his or her teaching, if at all. This information would help the researcher to examine the long-term impact of co-teaching on teachers and to study the extent to which knowledge about teaching, learning, and students might be transferred between co-teaching partners. Although the topics discussed in this section and the teachers' responses to the implementation questions overlapped significantly with topics discussed in the section on planning for instruction, an attempt was made to separate the two (e.g., planning for instruction, instructional implementation).

The final set of questions centered on administrative supports already in place or that were needed to support co-teachers in this building including time for planning, scheduling, choice in co-teaching arrangements (both the decision to co-teach or not and the choice of co-teaching partner), and professional development. Although this was the last section of the semi-structured interview protocol, teachers generally offered comments about this area earlier in the interview.

Teachers were interviewed individually at a time of their choosing, either during their planning time or outside of school hours. The interviews lasted approximately 45 minutes with the longest lasting 90 minutes and the shortest

lasting 33 minutes. The special education teacher who co-taught with two general education teachers responded to each question twice, once for her work with the English teacher and once for her work with the science teacher. Because the subjects knew the interviewer, some of the interviews took on a more conversational tone, as teacher participants felt free to share their thoughts, questions, and concerns about co-teaching with the researcher. All questions were asked of each subject although the order varied. The interviews were tape-recorded with permission from the teacher and later transcribed for data analysis.

Teacher survey. In addition to the interview, each co-teacher in the study was asked to complete the *Supporting Access to the General Education Curriculum Survey* (see Appendix B). The researcher developed the *Supporting Access Survey* in collaboration with members of the researcher's dissertation committee. First the researcher reviewed published surveys, checklists, and questionnaires (Thousand, Villa, & Nevin, 2007; Villa, Thousand, & Nevin, 2008) that addressed aspects of co-teaching related to access to the general education curriculum. Based on the review of the literature, the researcher developed an initial pool of categories and items. The researcher then consulted with two committee members to solicit additional suggestions and brainstorm possible items. Initial items addressed methods, techniques,

practices, or strategies that co-teachers might use to support access to the general education curriculum for students with disabilities or students at risk for academic failure. The questions focused on specific instructional practices that co-teachers might use rather than on their theory, philosophy, or opinion of co-teaching. Additional items were added based on the researcher's co-teaching experience. A draft of the survey was written and feedback about the survey items was solicited from nonparticipating teachers with whom the researcher worked. Based on this feedback, items were deleted, additional items were added, and revisions were made to existing items. Two members of the researcher's committee reviewed the second draft and provided further feedback. The final version of the survey was developed based on this last round of feedback.

The first section of the survey contained eight questions that addressed various aspects of the respondents' teaching background including how many years he/she had taught, how many years he/she had co-taught, in what areas he/she was highly qualified, highest degree earned, and whether he/she was the general education or special education teacher in the co-teaching team.

The main part of the survey contained 82 items that asked participants to report on their use of specific instructional practices that might be used to support access to the general education curriculum for students with

disabilities. The 82 items represented nine categories of instructional practices: (1) support for content learning, (2) learning-to-learn strategies (including enhancing understanding of course texts and developing writing), (3) supporting vocabulary development, (4) supporting reading needs of struggling readers (including use of assistive technology), (5) assistive technology, (6) universal design for learning (UDL), (7) motivation for learning, (8) classroom / behavior management, and (9) assessment. The number of items in each category varied from two (classroom/behavior management) to 24 (learning-to-learn strategies). The distribution of items across categories is shown in Table 7 below.

Table 7

Categories Included in the Supporting Access to the General Education Curriculum Survey

Category	Number of Items	Sample questions: In the class that we co-teach, my co-teacher and I ...
Support for content learning	12	• provide study guides or other study tools • use graphic organizers that will help students organize the information and make connections to previous units of study

Table 7 (cont'd)

Category	Number of Items	Sample questions: In the class that we co-teach, my co-teacher and I ...
Learning-to-learn strategies (including enhancing comprehension of course texts and developing writing)	24	• use direct, explicit instruction to teach comprehension strategies • model (think aloud) for students to show them how to use comprehension strategies
Supporting vocabulary development	7	• pre-teach difficult vocabulary • teach morpheme patterns that are related to the content vocabulary that students will need to learn for this course
Supporting struggling readers and writers	8	• provide books on tape, CD, or DVD so that students can listen to required content for this course • read assignments together in class or read assignments to the students

Table 7 (cont'd)

Category	Number of Items	Sample questions: In the class that we co teach, my co-teacher and I ...
Use of assistive technology / technology	6	• post class notes on the course website • teach students how to use text-to-speech software to help students with reading challenges
Universal design for learning	9	• modify plans for upcoming lessons to increase accessibility for students • utilize multiple formats to present lesson information
Motivation for learning	3	• provide variety and choice in reading materials • provide opportunities for students to interact in Book Clubs, small group discussions, blogs/wikis
Principles of classroom and behavior management	2	• use principles of positive behavior support to support student learning • develop behavior plans if necessary
Assessment practices	11	• use a variety of types of questions on assessments • create opportunities for students to represent their learning in multiple formats

Teachers responded to these questions using a 5-point Likert-like scale. The 5-point Likert-like scale used the following descriptors: *rarely* (one time or less per semester), *seldom* (once per month), *sometimes* (once every two weeks), *fairly often* (one time per week), and *frequently* (two or more times per week). After the co-teachers responded to the Likert-like items in each category, they were asked to give an example of something that they had done while co-teaching to further illustrate one of the items in that category.

The survey was conducted electronically using SurveyMonkey (www.surveymonkey.com). Electronic invitations were sent to each of the co-teachers who agreed to participate in the study; the invitation included a brief description of the instrument with a link to the survey. A cover letter was included that thanked the teachers for their participation and reviewed the purpose of the survey; detailed risks related to participation in the survey, privacy protections and contact information if he/she had questions; and requested that he/she agree to voluntarily participate in the study and allow the researcher to collect their answers for analysis. One follow-up invitation was sent two weeks later, also by email, to teachers who had not yet completed the survey. The teacher who co-taught with two general education teachers completed the survey twice, first responding to the questions regarding co-

teaching with the science teacher and a second time in regards to her co-teaching in ELA.

Classroom observations. Classroom observations were used as a secondary data source to elucidate the data gained from the interviews and survey. Each co-teaching team was observed to obtain a sample of their instructional practices and to observe the ways in which the co-teachers supported or facilitated students' access to the general education curriculum. Using the master schedule for the building, I developed a tentative schedule for classroom observations that would allow me to visit as many co-taught classes as possible over the days remaining in the school year. I then shared the tentative schedule with the co-teaching teams and made adjustments based on their feedback. I strived to observe classes during which instruction would be representative of what each co-teaching team reported was typical of their instruction throughout the school year. I also attempted to avoid conducting observations on test days, but in some cases that was not possible.

The researcher took field notes using a Classroom Observation Form (see Appendix C) that was designed to collect specific information (e.g., what each co-teacher was doing / saying, what students did and said in response to the co-teacher(s), reading and writing tasks utilized during instruction, and activities or tools that supported access to the general education curriculum). When

possible, observations were scheduled on consecutive days in order to better gauge the range of instructional practices that were used within a curricular unit to support access to the general education curriculum. Data from classroom observations was used to triangulate data acquired through survey and interviews.

The number of observations in each classroom varied based on the variety of classroom activities. For example, in classrooms in which the daily activities and procedures were consistent from day to day (as represented in interview, survey and observation data), fewer observations were made. The number of observations in each classroom ranged from two to three.

Observations ceased when final exams began.

Data Analysis

Multiple sources of data were used in this study. The results of the survey and teacher interviews constituted the primary data sources for this study. Specifically teacher interviews were transcribed and coded, responses to survey questions were examined, and examples from classroom observations were used to support emerging themes (Hubbard & Power, 2003). Classroom observation data was used to triangulate findings across multiple data sources. Member checks were conducted with participating teachers to further clarify and confirm patterns and themes.

Semi-structured interviews. A constant comparative approach to data analysis was used (Glaser & Strauss, 1967; Strauss & Corbin, 1998) to analyze the interview transcripts. Initially all interview transcripts were read by the researcher to obtain an overall feel for the data. Following the initial reading of the transcripts, HyperRESEARCH Qualitative Analysis Tool software (HyperRESEARCH, 2009) was used to support the coding and analysis of the interview data. As I reread the transcripts line by line, an open coding process was used to generate possible category names. Category names were then added to HyperRESEARCH and exemplars of each category were coded. As I continued the coding process, patterns and themes began to emerge. Those patterns and themes were noted, revised, and expanded upon as I continued to read and code transcripts. During the coding process, some category names were changed as I further refined the meaning of that category in my mind. Some category codes were merged with other codes, renamed, or modified during this process. Eventually no new codes emerged, and the coding scheme was used to complete the coding process.

Survey. Responses to Likert-like questions on the *Supporting Access to the General Education Curriculum Survey* were compiled in SurveyMonkey.com (www.surveymonkey.com) and then exported into an Excel database. At that point, this data was analyzed quantitatively. Responses to the open-ended

questions at the end of each section of the survey were analyzed qualitatively. The examples the co-teachers offered when asked to share something they had done while co-teaching to further illustrate an item in each section of the survey added richness to the quantitative data provided by the responses to the survey items. Responses to the open-ended questions were also compared to categories and themes that emerged as I coded the interview data and were used to confirm and triangulate the results of those analyses.

Classroom observations. Data collected during classroom observations served as a secondary data source and were used to triangulate results from the analysis of the interview transcripts and results of the *Supporting Access Survey*. Observations about what each co-teacher was doing and saying during instruction, what students did and said in response to instruction, reading and writing tasks that were utilized during instruction, and instructional activities or tools that supported access to the general education curriculum were compared to categories and themes that emerged from the interview data. Examples from classroom observations were used to clarify and illustrate the results of the *Supporting Access Survey* and the themes that emerged from the analysis of interview transcripts.

Chapter 4

Results

This research study examined the following research questions:

1. What practices do co-teachers report that they employ to support access to the general education curriculum for students with disabilities and other students at risk for academic failure?
2. What factors support or constrain the use of co-teaching as a way to support access to the general education curriculum?
3. How can these results be explicated in terms of school change theory?

In the first section below I report results for Research Question 1. The second section of this chapter reports results for Research Questions 2 and 3.

Research Question 1

The primary data source for this research question was the *Supporting Access to the General Education Curriculum Survey*; secondary data sources included interview data and classroom observations. Research Question 1 asked: What practices do co-teachers report that they employ to support access to the general education curriculum for students with disabilities and other students at risk for academic failure? An invitation to participate in the survey was sent to the seven co-teachers who participated in this study. The teacher who co-taught with two different teachers received two invitations to

participate and completed the survey twice, first responding to the questions regarding co-teaching with the science teacher and a second time in regards to her co-teaching with the English teacher. Survey information was received for seven of the eight invitations sent, yielding a return rate of 87.5%.

Responses to Likert-like questions on the *Supporting Access to the General Education Curriculum Survey* were compiled in SurveyMonkey.com (www.surveymonkey.com) and then exported into an Excel database. At this point, the responses to the Likert-like questions were analyzed quantitatively. Responses to the open-ended questions at the end of each section of the survey and related questions in the interview were analyzed qualitatively and were used to triangulate quantitative findings from the survey. By itself, self-reported information like this may not be highly accurate or reflective of what actually goes on in the classrooms of these co-teaching teams, so this information was used in conjunction with data from classroom observations and interviews to gain a more complete understanding of the practices that teachers report using to support access to the general education curriculum.

I first preview the results by discussing, in general, the overall frequency-of-use ratings for the nine categories and the practices that were reported to be utilized most frequently and least frequently by the co-teachers surveyed. This is followed by more detailed results for each of the nine categories with

supporting data from interview transcripts, classroom observations, and open-ended responses on the survey.

To summarize the survey data, the average frequency-of-use ratings were used to rank the nine categories on the *Supporting Access to the General Education Curriculum Survey*. The results are shown in Table 8 below.

Table 8

Average Frequency-of-Use Ratings from the Supporting Access to the General Education Curriculum Survey

Rank	Category	Average Frequency-of-Use Rating
1	Support for Learning Course Information	3.87
2	Supporting Struggling Readers & Writers	3.27
3	Assistive Technology	3.00
4	Assessment	2.99
5	Universal Design for Learning	2.54
6	Supporting Vocabulary Development	2.39
7	Classroom/Behavior Management	2.35
8	Learning-to-Learn Strategies	2.13
9	Motivation for Learning	1.86

Based on the responses of teachers to the survey items, the co-teachers in this study most frequently utilize practices from the categories Support for Learning Course Information, Supporting Struggling Readers and Writers, and Assistive Technology. Average frequency-of-use ratings for these categories were between 3 and 4 (once every 2 weeks to once per week). Participants in this study reported using practices from the Motivation for Learning category least often. The average frequency-of-use rating for this category was 1.86 (from once per semester or less to once per month). The remaining categories earned average frequency-of-use ratings between 2 (once per month) and 3 (once every 2 weeks).

To summarize the survey data regarding individual items, the average frequency ratings were used to determine which practices (of the 82 practices in nine categories) were reported to be most frequently used and which were reportedly utilized least often. Based on these survey results, the most frequently used practices (frequency ratings of 4.0 or above) and least-used practices (frequency ratings of 2.0 or below) are listed in rank order in Tables 9 and 10, respectively.

Table 9 contains the 12 highest scoring survey items together with the mean score assigned by teachers to represent the frequency of their reported usage in the co-taught class. The practices that co-teachers reported using

most frequently to support students' access to the curriculum were derived from four of the nine categories (Support for Content Learning, Supporting Reading Skills of Struggling Readers, Assistive Technology, and Assessment.) Five of the six most frequently used practices came from one category (Support for Content Learning), as represented by the teachers' reported employment of techniques to increase students' opportunities to respond, the provision of study guides and class notes, the provision of additional explanations or assistance as students worked on class activities, or the activation of background knowledge.

Table 9

Practices that Teachers Report Using Most Frequently

Rank	Item	Category	Rating average on a 5-point scale
1 (tied)	Provide frequent opportunities for students to respond during class time	Support for learning course information	4.57
1 (tied)	Provide additional assistance for students as they work	Support for learning course information	4.57

Table 9 (cont'd)

Rank	Item	Category	Rating average on a 5-point scale
1 (tied)	Utilize options other than the textbook to cover the content	Supporting struggling readers and writers	4.57
4	Provide study guides or other study tools	Support for learning course information	4.43
5 (tied)	Provide direct assistance to help students activate prior knowledge and make connections to their lives	Support for learning course information	4.29
5 (tied)	Provide students with class notes if needed	Support for learning course information	4.29
5 (tied)	Read assignments together in class or read assignments to the students	Supporting reading skills of struggling readers	4.29
8	Provide additional explanation of difficult concepts	Support for learning course information	4.14
9 (tied)	Provide models for students of desired product (e.g., examples of good notes or an effective persuasive essay)	Support for learning course information	4.0

Table 9 (cont'd)

Rank	Item	Category	Rating average on a 5-point scale
9 (tied)	Make audio versions of required textbooks or novels available	Assistive technology	4.0
9 (tied)	Read tests to students who struggle with reading	Assessment	4.0
9 (tied)	Rephrase test questions if necessary	Assessment	4.0

It is interesting to note that most or all of the practices that were reported to be used most frequently by co-teachers (see Table 9) seem to be practices that many teachers utilize during the course of normal instruction and, therefore, may not reflect unique additions or innovations made possible because the class is co-taught.

Next, the lowest ranked items (average frequency-of-use rankings 2.0 or below) were examined. Co-teachers reported using 19 of the 82 items (23%) *seldom* (once per month) or *rarely* (one per semester or less). The lowest-ranked items come from five different categories including Learning-to-Learn Strategies, UDL, Assistive Technology, Supporting Vocabulary Development, and Motivation for Learning. These results are presented in Table 10.

Table 10

Practices that Teachers Report Using Least Often

Rank	Item	Category	Rating Average
1	Teach students to use text-to-speech software to assist them as they revise and edit	Learning-to-learn strategies	1.0
2	Provide opportunities for students to interact through reading/writing (Book Clubs, blogs, wikis, small group discussions)	Motivation for Learning	1.29
3	Develop behavior plans if necessary	Classroom / behavior management	1.4
4 (tied)	Provide variety and choice in reading materials	Motivation for Learning	1.43
4 (tied)	Provide opportunities for students to demonstrate their learning through oral presentations	UDL	1.43
6 (tied)	Provide opportunities for students to demonstrate their learning through other forms of writing	UDL	1.57
6 (tied)	Create opportunities for students to represent their learning in multiple formats	UDL	1.57
6 (tied)	Teach students a process for revising their writing	Learning-to-learn strategies	1.57

Table 10 (cont'd)

Rank	Item	Category	Rating Average
9	Teach students a process for editing their writing	Learning-to-learn strategies	1.67
10 (tied)	Use computer technology to teach new words	Supporting vocabulary development	1.71
10 (tied)	Provide additional opportunities for students to practice new strategies, techniques, or skills before they are required to demonstrate independent use	Learning-to-learn strategies	1.71
12 (tied)	Teach students how to use text-to-speech software to help students with reading challenges	AT	1.86
12 (tied)	Teach students how to use text-to-speech software to help students with reading challenges	Supporting reading skills for struggling readers	1.86
12 (tied)	Teach students to assess their writing using rubrics	Learning-to-learn strategies	1.86
12 (tied)	Teach students a number of ways to plan their writing including but not limited to brainstorming or making lists, developing outlines, and using graphic organizers	Learning-to-learn strategies	1.86

Table 10 (cont'd)

Rank	Item	Category	Rating Average
16 (tied)	Utilize digital texts (if available)	UDL	2.0
16 (tied)	Teach morpheme patterns that are related to the content vocabulary that students will need to learn for the class	Supporting vocabulary development	2.0
16 (tied)	Teach students to use strategies flexibly	Learning-to-learn strategies	2.0
16 (tied)	Use rubrics to assess writing	Learning-to-learn strategies	2.0

Five of the lowest rated items involved teaching learning-to-learn strategies for writing while three additional items also entailed reading or representational practices from the Learning-to-Learn category. As a category, therefore, the Learning-to-Learn Strategies contained items with some of the lowest average rankings and lowest reported use by co-teachers.

Other practices that were used less frequently included those that required more time to implement putting them in direct competition with the need to cover more content in a limited time. For example, teachers assigned low ratings to teaching content vocabulary (e.g., teaching morpheme patterns that are related to the content vocabulary that students need to learn for class), as well as to technology practices that required that they incorporate or

utilize unfamiliar technologies that might support students' access to the content (e.g., teaching students to use text-to-speech software to help them as they revise and edit or utilizing digital texts). One item from Classroom and Behavior Management (e.g., develop behavior plans if necessary) and two items from the Motivation for Learning category (e.g., provide opportunities for students to interact through reading/writing and provide variety and choice in reading materials) also appeared on the list of least-used practices. This may indicate that teachers felt less comfortable in their abilities or willingness to attend to the motivational and social qualities of their co-taught lessons, or it might mean that these were not viewed as significant areas of concern.

Next, the individual categories along with specific items in each category were examined more closely. The responses to Likert-like questions are reported in two ways in the tables below. The tables (Tables 11-19) illustrate how teachers responded when they were asked *how often* they utilized each practice to support students' access to the curriculum. These tables show how many teachers selected each frequency category for each item and also show (with shading) the frequency category selected by the most teachers in the study (the mode). The last column of each table shows the average frequency-of-use rating for each item based on a 5-point Likert-like scale. This representation of the data shows the average frequency-of-use rating across all

teachers who responded to each question. By representing the data in two ways, the researcher could gain a more complete picture of which practices co-teachers use, how often those practices are used, and how many teachers utilize practices than if only the average frequency-of-use rating was reported.

Support for learning course information. The survey category with the highest average frequency rankings overall and greatest reported use by co-teachers was Support for Learning Course Information (see Table 11 below). The data in Table 11 illustrates that most co-teachers (at least five of seven co-teachers) reported utilizing most of these practices *fairly often* (once weekly) or *frequently* (two or more times per week) with average rankings from 2.86 to 4.57 on a 5-point scale. Seven of the 12 items had average frequency ratings of 4.0 (once weekly) or higher, while 11 of the 12 items had average frequency ratings of at least 3.0 (once every two weeks).

Table 11

Support for Learning Course Information

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
provide direct assistance to help students activate prior knowledge and make connections to their lives	14.3% (1)	0.0% (0)	0.0% (0)	14.3% (1)	71.4% (5)	4.29
provide models for students of the desired product (e.g., examples of good notes, an effective persuasive essay, or a complete answer to an essay question)	0.0% (0)	28.6% (2)	0.0% (0)	14.3% (1)	57.1% (4)	4.00
split the class into smaller groups for instruction	14.3% (1)	28.6% (2)	14.3% (1)	28.6% (2)	14.3% (1)	3.00
reteach difficult information	14.3% (1)	0.0% (0)	14.3% (1)	71.4% (5)	0.0% (0)	3.43
provide frequent opportunities for students to respond during class time	0.0% (0)	0.0% (0)	0.0% (0)	42.9% (3)	57.1% (4)	4.57
provide study guides or other study tools	0.0% (0)	0.0% (0)	14.3% (1)	28.6% (2)	57.1% (4)	4.43
conduct extra review sessions before tests	0.0% (0)	14.3% (1)	0.0% (0)	71.4% (5)	14.3% (1)	3.86

Table 11 (cont'd)

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
provide students with class notes if needed	0.0% (0)	0.0% (0)	14.3% (1)	42.9% (3)	42.9% (3)	4.29
teach strategies to help the students learn the information	0.0% (0)	28.6% (2)	42.9% (3)	28.6% (2)	0.0% (0)	3.00
use graphic organizers that will help students organize the information and make connections with previous units of study	28.6% (2)	14.3% (1)	14.3% (1)	28.6% (2)	14.3% (1)	2.86
provide additional explanation of difficult concepts	14.3% (1)	0.0% (0)	0.0% (0)	28.6% (2)	57.1% (4)	4.14
provide additional assistance for students as they work	0.0% (0)	0.0% (0)	14.3% (1)	14.3% (1)	71.4% (5)	4.57

Overall the survey indicated that practices from the category Support for Learning Course Information were tools that co-teachers utilized frequently to bolster their students' learning of content required in the course. This was

further evidenced in responses to the open-ended questions on the survey, interviews, and observations as the co-teachers shared multiple examples of the ways in which they provided support for learning course information such as class notes, study guides, response opportunities, or commitment to measuring and reteaching difficult concepts.

Several co-teachers stated that they modeled note-taking and provided course notes and PowerPoint presentations on the general education teachers' course website. This practice has increased in recent years as more teachers in the building are utilizing course websites to support instruction.

In addition, teachers monitored students' performance on a frequent basis and retaught difficult concepts. Ms. Carey, Ms. Gregg, and Ms. Russell, all special educators, provided examples of how they provide support for content learning in their co-taught classrooms. Ms. Carey explained, "as students work independently, we will circulate the room, checking for understanding, and correcting/reteaching as necessary." Ms. Gregg reported that direct assistance was provided by both of the co-teachers in class as students worked on seatwork or in labs. I observed this on two occasions when I observed in the class where Ms. Gregg co-teaches. As students worked with partners in labs, Ms. Gregg and Ms. Patrick moved from group to group answering questions and providing additional explanation. It was clear to me as I observed that without

two teachers in the classroom, many questions would have gone unanswered. Ms. Russell reported that the general education science teacher with whom she works “does quick checks to see if students understand new concepts and reteaches those that are not mastered.” This researcher observed many of these supports in action in their co-taught classrooms.

Ms. Armstrong reported another example of the use of reteaching on the survey:

The need to reteach has occurred several times. For example, early in the year we followed the district's mandated method for teaching students how to write a persuasive essay. It was a dismal failure, as I suspected it would be. Later in the year we retaught this skill using a more tried and true approach, and this produced a better result. As another example, we taught the rules for punctuation several times, giving repeated exercises and drills and testing the same skills on several occasions in the hope that repeated review would develop competence.

In some cases, additional support was provided or was made available outside of the general education classroom. Ms. Russell explained, “I take students out of the class any time there is time for students to [work independently] such as reading a novel, working on vocabulary or writing a paper.” Ms. Gregg offers review sessions after school two times a week, and

Mrs. Pine mentioned that after school study sessions are available in the library for all students at Central High School.

Of the 12 individual items in this section of the survey, only one item had an average frequency rating below 3.0. That item, using graphic organizers that will help students organize the information and make connections with previous units of study, received an average ranking of 2.86 on a 5-point scale (indicating reported use between once per month and once every two weeks). Only three teachers reported that they *fairly often* (once per week) or *frequently* (two or more times per week) use graphic organizers while three teachers report using them *seldom* (once per month) or *rarely* (once per semester or less). Ms. Pine is one teacher who utilizes graphic organizers to support content learning. In one lesson I observed, Ms. Pine drew the outline of a tree with branches to illustrate the phyla that they had studied thus far, the phyla that they had skipped because of time constraints, and the phyla yet to come. She explained to me that she did this to help students make connections and build understanding of the big picture. Her goal was to give students a complete picture of all living organisms that could be covered in a biology course, review with students the phyla that they had covered thus far and where those phyla fit into the big picture of living organisms, and to show them what was yet to come. Ms. Russell reiterated Ms. Pine's use of graphic

organizers explaining that Ms. Pine frequently uses visuals such as this to increase students' understanding and make connections to previous and future learning.

Although practices from this category were reported to be utilized frequently by co-teachers in this study to support access to the general education curriculum, I was unable to determine whether these practices were utilized more frequently in co-taught classes than in classes that were not co-taught. It is possible that these practices were utilized by these teachers throughout their school day and are not unique to the co-taught setting.

Learning-to-learn strategies. As reported previously, the Learning-to-Learn category contained items with some of the lowest average frequency-of-use rankings and lowest reports of use by co-teachers. The average frequency-of-use ratings for 17 of the 24 items were 2.0 or above, but closer examination of the number of co-teachers who reported using each practice shows how little these practices are utilized by co-teachers (see Table 12). For 22 of 24 items in this category, the most frequently selected response (the mode) was *sometimes* (once every two weeks), *seldom* (once per month), or *rarely* (once per semester or less). The items in this category are underutilized in co-taught classes. The survey results for the other two items did not show a clear pattern. Responses for these two items were not similar to the other 22

items. These two items, making writing a regular part of instructional activities in the class and having students write to learn, had multiple modes with the most frequently selected responses distributed across *rarely* (once per semester or less), *seldom* (once per month), *sometimes* (once every two weeks), or *fairly often* (once per week).

On the higher end of use, only three of the 24 items (integrating text comprehension strategies into instruction, teaching students critical analysis and reasoning skills, and teaching students ways that they can monitor their comprehension) were reported to be used *frequently* (two or more times per week) by any of the co-teachers. No teachers reported that they used any of the other 21 items frequently.

Interestingly, there were differences between the frequency-of-use ratings that teachers assigned to strategies related to writing and reading. The frequency ratings for writing-related practices ranged from 1.0 to 2.57 with more teachers reporting that they *rarely* (once per semester or less) used these practices. On the other hand, the frequency ratings for reading-related practices ranged from 2.29 to 3.29 with most teachers reporting utilizing these practices *sometimes* (once every two weeks) or *seldom* (once per month). Thus, while co-teachers in this study do not report frequent use of learning-to-learn strategies as a whole, it appears that the co-teachers in this study were

more likely to utilize learning-to-learn strategies directly related to reading than those related to writing.

Table 12

Learning-to-Learn Strategies, Enhancing Comprehension of Course Texts, Developing Writing in Your Course

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
integrate text comprehension strategies into instruction (e.g., connecting to background knowledge, generating questions, monitoring comprehension, summarizing text, understanding various text structures, use of graphic and semantic organizers)	0.0% (0)	42.9% (3)	14.3% (1)	14.3% (1)	28.6% (2)	3.29
teach students critical analysis and reasoning skills	0.0% (0)	42.9% (3)	28.6% (2)	0.0% (0)	28.6% (2)	3.14

Table 12 (cont'd)

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
use direct, explicit instruction to teach comprehension strategies	14.3% (1)	14.3% (1)	42.9% (3)	28.6% (2)	0.0% (0)	2.86
model (think aloud) for students to show them how to use comprehension strategies	0.0% (0)	28.6% (2)	57.1% (4)	14.3% (1)	0.0% (0)	2.86
talk with students about how to use strategies in combination	0.0% (0)	50.0% (3)	50.0% (3)	0.0% (0)	0.0% (0)	2.50
teach students to use strategies flexibly	28.6% (2)	42.9% (3)	28.6% (2)	0.0% (0)	0.0% (0)	2.00
teach students ways that they can monitor their comprehension	28.6% (2)	42.9% (3)	14.3% (1)	0.0% (0)	14.3% (1)	2.29
use direct instruction to teach writing (writing strategies)	57.1% (4)	0.0% (0)	14.3% (1)	28.6% (2)	0.0% (0)	2.14
make writing a regular part of the instructional activities in our class	28.6% (2)	28.6% (2)	14.3% (1)	28.6% (2)	0.0% (0)	2.43

Table 12 (cont'd)

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
have students write to learn	28.6% (2)	14.3% (1)	28.6% (2)	28.6% (2)	0.0% (0)	2.57
give students many opportunities to engage in authentic writing tasks	42.9% (3)	0.0% (0)	42.9% (3)	14.3% (1)	0.0% (0)	2.29
model aspects of the writing process for students (planning, writing, editing, revising)	42.9% (3)	14.3% (1)	28.6% (2)	14.3% (1)	0.0% (0)	2.14
talk with students about the ways in which writing will be useful to them in and out of school	57.1% (4)	0.0% (0)	14.3% (1)	28.6% (2)	0.0% (0)	2.14
use rubrics to assess writing	28.6% (2)	57.1% (4)	0.0% (0)	14.3% (1)	0.0% (0)	2.00
teach students to assess their writing using a rubric	42.9% (3)	42.9% (3)	0.0% (0)	14.3% (1)	0.0% (0)	1.86

Table 12 (cont'd)

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
teach students a number of ways to plan their writing including but not limited to brainstorming or making lists, developing outlines, and using graphic organizers	28.6% (2)	57.1% (4)	14.3% (1)	0.0% (0)	0.0% (0)	1.86
teach students a process for editing their writing	50.0% (3)	33.3% (2)	16.7% (1)	0.0% (0)	0.0% (0)	1.67
teach students a process for revising their writing	57.1% (4)	28.6% (2)	14.3% (1)	0.0% (0)	0.0% (0)	1.57
teach students to use text-to-speech software to assist them as they revise and edit	100% (7)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	1.00
teach strategies for test-taking	42.9% (3)	42.9% (3)	14.3% (1)	0.0% (0)	0.0% (0)	1.71

Table 12 (cont'd)

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
provide additional opportunities for students to practice new strategies, techniques, or skills before they are required to demonstrate independent use	57.1% (4)	28.6% (2)	0.0% (0)	14.3% (1)	0.0% (0)	1.71
model (think aloud) as you teach students how to perform a new strategy	0.0% (0)	57.1% (4)	28.6% (2)	14.3% (1)	0.0% (0)	2.57
teach students different ways to organize information to facilitate understanding or remembering (e.g., Venn diagrams, notetaking, graphic organizers)	14.3% (1)	14.3% (1)	42.9% (3)	28.6% (2)	0.0% (0)	2.86
prompt students to use previously learned strategies in new situations	14.3% (1)	42.9% (3)	28.6% (2)	14.3% (1)	0.0% (0)	2.43

Although the survey suggested that the learning-to-learn practices were utilized infrequently in co-taught classrooms, co-teachers offered robust examples of their use of learning-to-learn strategies in their co-taught classes. Both Ms. Carey and Ms. Gregg described their work on reading strategies in the courses that they taught. Ms. Carey said that in order to help students monitor their comprehension, they have students highlight as they read and write questions, summaries, and important details in the margins. “We also model this for them as we read the text in class.” Earlier in the year in the science class co-taught by Ms. Gregg, “we did some reading strategy lessons to help them better comprehend their Biology textbooks.”

Regarding teaching writing strategies, Ms. Armstrong recounted the process that she and her co-teacher have used to help their students understand grammar:

When we taught grammar, we taught students to walk through the thinking process they needed to follow to uncover the components of a sentence. First, find the verb. [Next] cross out any prepositional phrases and ignore them. Then (to find the subject) ask who or what does that verb. Is it an action or a linking verb? If it is action verb, does it transfer its action onto an object?

Ms. Pine reported that when she and Ms. Russell co-taught together previously, Ms. Russell taught the *Test-Taking Strategy* (Hughes, Schumaker, Deshler, & Mercer, 1988) to help students improve their test-taking skills and the *LINCS Vocabulary Strategy* (Ellis) to teach them a strategy to learn vocabulary. Ms. Pine explained, “We taught our students the PIRATES Test-Taking Strategy and emphasized the strategy to plan essay answers responses.” Ms. Pine and Ms. Russell first taught these strategies seven or eight years ago in a class that they co-taught; they would like to be able to teach these strategies again in the future because they feel that they were valuable to their students. Ms. Pine said she hopes that they can again include instruction in these valuable strategies in their co-taught class, but it will have to wait until they are more comfortable with the new curriculum.

Ms. Pine and Ms. Russell also worked to teach students critical analysis and reasoning skills in the science class that they co-teach. Ms. Russell explained, “Students do at least one or two labs per week where they are required to [answer] a variety of questions [covering all levels of] Bloom's taxonomy. They need to write out their findings and analyze why they think something to be true. Lab directions are specific and guided step-by-step.”

Ms. Russell, who co-teaches with two different teachers who participated in this study, cited the lack of opportunity to teach more strategies in the

classes in which she co-teaches. “The only time we have done these strategies is when there has been extra time in the curriculum where I can use the strategies while reading.” She was disappointed that she has not been able to teach strategies for writing.

Although the co-teachers in this study provided compelling examples of their use of learning-to-learn strategies in the classroom, these examples may be isolated incidents. Their reported use of these practices on the *Supporting Access to the General Education Curriculum Survey* indicate that these are not frequently used practices. Increased use of practices in the Learning-to-Learn category may prove beneficial for students in co-taught classrooms.

Although practices in the Learning-to-Learn Strategies were reported to be utilized least often by co-teachers in this study, practices included in the categories Supporting Vocabulary Development, Motivation for Learning, and Classroom/Behavior Management were also reported to be used less frequently.

Supporting vocabulary development. The third category was Supporting Vocabulary Development. Average frequency-of-use ratings for items in this category ranged from 1.71 to 3.14 on a 5-point scale (see Table 13). Not one of the seven practices in this section of the survey was reported as utilized *frequently* (two or more times per week) by any of the co-teachers, and only four items were reported as used *fairly often* (one time per week) including providing opportunities for multiple

exposures to new words during instruction (three teachers), helping students connect new vocabulary with their background knowledge (two teachers), using direct instruction to teach difficult vocabulary (one teacher), and preteaching difficult vocabulary (two teachers). The highest rated item, provide opportunities to learn new vocabulary through multiple exposures to new words during instruction, was reported to be used *fairly often* (one time per week) by three teachers and *sometimes* (once every two weeks) by three teachers.

The other six items related to the implementation of direct instructional practices that support vocabulary learning -- teach morpheme patterns that are related to the content vocabulary that students will need to learn for the class; pre-teach difficult vocabulary; use direct instruction to teach difficult vocabulary; help students connect new vocabulary with their background knowledge; utilize word maps, concept maps, or similar visual devices; and use computer technology to teach new words. These items earned an average frequency of 2.71 or below, which indicated that for this group of co-teachers, these practices are utilized less frequently than some other practices.

Although teaching morpheme patterns was a practice that was reported to be used less frequently than others (frequency-of-use rating 2.0), it is a practice that is regularly used by Ms. Pine and Ms. Russ. Ms. Pine explains,

Ms. Russ has a great background in word parts so when it comes to breaking down these very scientific words [in biology], she's got the background that she can help the students see why the words fit together the way they do and how. When they come up against a word that they don't know, they start to break down the word parts and can have a fighting chance to figure it out.

In addition, Ms. Russell systematically teaches word parts to students in her reading and instructional support classes using materials she developed in collaboration with this researcher. Because generalization of this strategy to their general education courses is built into each week's instruction, Ms. Russell feels that she is increasing her students' knowledge of word parts in a way that will support their understanding of vocabulary in a way that will support content learning.

Table 13

Supporting Vocabulary Development

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
teach morpheme patterns (word parts) that are related to the content vocabulary that students will need to learn for the class (e.g., hetero- and homo- in biology)	42.9% (3)	14.3% (1)	42.9% (3)	0.0% (0)	0.0% (0)	2.00
pre-teach difficult vocabulary	14.3% (1)	57.1% (4)	0.0% (0)	28.6% (2)	0.0% (0)	2.43
use direct instruction to teach difficult vocabulary	14.3% (1)	57.1% (4)	14.3% (1)	14.3% (1)	0.0% (0)	2.29
provide opportunities for multiple exposures to new words during instruction	14.3% (1)	0.0% (0)	42.9% (3)	42.9% (3)	0.0% (0)	3.14
help students connect new vocabulary with their background knowledge	14.3% (1)	28.6% (2)	28.6% (2)	28.6% (2)	0.0% (0)	2.71

Table 13 (cont'd)

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
utilize word maps, concept maps, or similar visual devices	14.3% (1)	28.6% (2)	57.1% (4)	0.0% (0)	0.0% (0)	2.43
use computer technology to teach new words (online dictionaries, hyperlinks in online textbooks, websites related to the content-area)	57.1% (4)	14.3% (1)	28.6% (2)	0.0% (0)	0.0% (0)	1.71

Given that vocabulary knowledge is critical to both content learning and increasing reading comprehension, it is concerning to see how infrequently teachers reported using specific instructional practices to support vocabulary development. The six practices in this category that received the lowest frequency rating involved direct instruction to support vocabulary learning, practices supported by research. These practices may be underutilized because of the time that they take away from the requirement that teacher “cover” all

aspects of the curriculum. The pressure placed on teachers to “cover the curriculum” was addressed by a number of teachers in interviews with the researcher. This will be discussed in greater depth in the reporting of results for Research Questions 2 and 3.

Motivation for learning. A fourth category of practices that co-teachers reported using relatively infrequently related to strategies to enhance students’ motivation for learning. The frequency-of-use ratings range from 1.29 to 2.86 (see Table 14). Five of the seven co-teachers reported that they *rarely* (once per semester or less) provided variety and choice in reading materials or provided opportunities for students to interact through reading and/or writing in small groups (see Table 14). On the other hand, guiding students to focus on their own improvement was a practice that these co-teachers utilized more frequently, with three teachers reporting that they *sometimes* do this (once every two weeks) and three teachers reporting that they *seldom* implemented the practice (once per month).

Table 14

Motivation for Learning

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
guide students to focus on their own improvement	0.0% (0)	42.9% (3)	42.9% (3)	0.0% (0)	14.3% (1)	2.86
provide variety and choice in reading materials	71.4% (5)	14.3% (1)	14.3% (1)	0.0% (0)	0.0% (0)	1.43
provide opportunities for students to interact through reading/writing (e.g., Book Clubs, small group discussions, blogs/wikis)	71.4% (5)	28.6% (2)	0.0% (0)	0.0% (0)	0.0% (0)	1.29

Practices related to motivation played a very limited role in the survey, but in hindsight, this area should have been explored in more depth. Co-teachers at the high school level frequently work with students who struggle to meet the demands of the general education curriculum for a number of reasons (e.g., past failure, fear of failure, inadequate academic preparation, disabilities). Motivation may be a key variable that influences or is influenced by students' success or lack of success with challenging

curriculum. In fact, student motivation (or lack of motivation) was discussed frequently in interviews and was a source of concern and/or frustration to several of the co-teachers. It seemed that the co-teachers in this study felt that student motivation played a critical role in students' success and was closely related to their ability as co-teachers to facilitate and support content learning. While it appeared that the teachers underutilized teaching strategies and practices to bolster student motivation, that may be because the strategies and practices that co-teachers use to support motivation were not included in the survey.

Although some categories of practices were reported to be more universally used (e.g., Support for Learning Course Information) or not used (e.g., Learning-to-Learn Strategies and Supporting Vocabulary Development), wide discrepancies were seen in the remaining categories (e.g., Supporting Struggling Readers and Writers, Use of Assistive Technology, Universal Design for Learning (UDL), Assessment Practices, and Principles of Classroom and Behavior Management). That is, while some teachers reported using practices within these categories *fairly often*, others reported using the same practices *rarely* or *seldom*. In the following section, I will discuss the remaining categories for which discrepant results were seen. Wide variations were reported on individual items in the three closely related categories of Supporting Struggling Readers and Writers (frequency-of-use reported ranged from 1.86 – 4.57), Use

of Assistive Technology (1.86 – 4.0), Principles of UDL (1.43 – 3.86), and in Assessment Practices (1.57 – 4.0) and Principles of Classroom and Behavior Management (1.40 – 3.29).

Supporting struggling readers and writers, use of assistive technology, and principles of universal design for learning (UDL).

Wide variations were seen in the use of practices in three closely related categories: Supporting Struggling Readers and Writers (see Table 15), Use of Assistive Technology (see Table 16) and Principles of UDL (see Table 17). For the category Supporting Struggling Readers and Writers, frequency-of-use ratings ranged from a low of 1.86 for teaching students how to use text-to-speech software to a high of 4.57 for utilizing options other than the textbook to cover the content (see Table 15). At least four of the seven co-teachers reported that they *frequently* (two or more times per week) provide books on tape, CD, or DVD so that students can listen to required reading for the course; read assignments together in class or read to the students; utilize options other than the textbook to cover the content (five teachers); and use technology to enhance access to the general education curriculum. On the other hand, it is significant to note the number of teachers who reported that they *rarely* (one time or less per semester) used three of the practices in this category. Three of the seven teachers stated that they *rarely* identify websites that supplement

the course content for students, five said that they *rarely* teach students to use text-to-speech software, and four reported that they *rarely* post PowerPoints of course presentations or upload course notes to the course website.

Table 15

Supporting Reading Skills for Struggling Readers, Assistive Technology

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
provide books on tape, CD, or DVD so that students can listen to required content for this course	0.0% (0)	28.6% (2)	14.3% (1)	0.0% (0)	57.1% (4)	3.86

Table 15 (cont'd)

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
read assignments together in class or read assignments to students	0.0% (0)	0.0% (0)	28.6% (2)	14.3% (1)	57.1% (4)	4.29
allow students to read assigned readings with partners	14.3% (1)	42.9% (3)	14.3% (1)	14.3% (1)	14.3% (1)	2.71
utilize options other than the textbook to cover the content (videos, class discussion, etc.)	0.0% (0)	0.0% (0)	14.3% (1)	14.3% (1)	71.4% (5)	4.57
use technology to enhance access to the general education curriculum for students in my co-taught classes (e.g., PowerPoint presentations, blogs, wikis)	28.6% (2)	0.0% (0)	0.0% (0)	14.3% (1)	57.1% (4)	3.71

Table 15 (cont'd)

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
identify websites that supplement the course content for students	42.9% (3)	28.6% (2)	0.0% (0)	0.0% (0)	28.6% (2)	2.43
teach students how to use text-to-speech software to help students with reading challenges	71.4% (5)	0.0% (0)	14.3% (1)	0.0% (0)	14.3% (1)	1.86
post PowerPoints of content presentations or course notes on the course website so that students can access this information from home (if applicable)	57.1% (4)	0.0% (0)	0.0% (0)	0.0% (0)	42.9% (3)	2.71

Several teachers who utilize more AT practices to support struggling readers and writers provided additional explanations of their efforts in this area. Ms. Pine and Ms. Russ reported that the text for their course is available online to all students. Ms. Pine explained, “The kids can actually go online and it will

read the text to them. It's amazing all the bells and whistles that come with a new textbook series nowadays." If reading is required in class, they read the text to the students. Critical content from each chapter is presented using PowerPoints which are posted on the course website for all students along with related websites. In addition, the department has compiled an extensive video/DVD library to support course content which is used to illustrate course concepts. Ms. Carey's comments further illustrate what some co-teachers are doing in this area to support access to the general education curriculum. She explained,

We've used wikis and blogs for kids to discuss and post information about what we are studying class. We have used books on CD and podcasts to support reading novels. We are always using the document camera, SmartBoard, and projector to put websites, pictures, and other information that connects to what we are teaching.

In some cases, supports for struggling readers are provided by the special education teacher outside of the classroom. Ms. Russ explains, "When reading a novel, I take students out to read with me where I can model the strategies. The rest of the class stays with the general education English teacher." In this case, only the students with identified disabilities are benefiting from this support.

Results for practices in the Assistive Technology category also vary significantly with some practices used *frequently* by nearly half or more of the teachers, while others are used *rarely* by half or more of the teachers (see Table 16). Frequency-of-use ratings ranged from a low of 1.86 (teaching students to use text-to-speech software) to a high of 4.0 for making audio versions of required text available. (This category should have been combined with Supporting Struggling Readers and Writers as the items appeared in both categories with similar responses from the teachers.) Practices that are used *frequently* (two or more times per week) by three or more teachers include using technology to enhance access to the general education curriculum (five teachers), making audio versions of required texts available (four teachers), and posting PowerPoint presentations or course notes on course websites (three teachers). These data confirm survey responses in the Supporting Struggling Readers and Writers category.

Table 16

Assistive Technology

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
use technology to enhance access to the general education curriculum for students (e.g., PowerPoint presentations, blogs, wikis)	28.6% (2)	0.0% (0)	0.0% (0)	0.0% (0)	71.4% (5)	3.86
identify websites for students that supplement the course material	42.9% (3)	28.6% (2)	0.0% (0)	0.0% (0)	28.6% (2)	2.43
teach students how to use text-to-speech software to help students with reading challenges	71.4% (5)	0.0% (0)	14.3% (1)	0.0% (0)	14.3% (1)	1.86

Table 16 (cont'd)

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
make audio versions of required textbooks or novels available	0.0% (0)	14.3% (1)	28.6% (2)	0.0% (0)	57.1% (4)	4.00
post PowerPoint presentations on the course website	57.1% (4)	0.0% (0)	0.0% (0)	0.0% (0)	42.9% (3)	2.71
post class notes on the course website	14.3% (1)	42.9% (3)	0.0% (0)	0.0% (0)	42.9% (3)	3.14

In the category Practices related to Universal Design for Learning (UDL), reports from teachers on the practices they used showed much variation across teachers. Frequency-of-use ratings ranged from 1.43 (between *rarely* and *seldom*) to 3.86 (between *sometimes* and *fairly often*) (see table 17).

Table 17

Universal Design for Learning (UDL)

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
talk together about upcoming lessons to determine what components might be problematic for some students	0.0% (0)	0.0% (0)	42.9% (3)	28.6% (2)	28.6% (2)	3.86
modify our plans for upcoming lessons to increase accessibility for students	14.3% (1)	14.3% (1)	42.9% (3)	0.0% (0)	28.6% (2)	3.14
utilize multiple formats to present lesson information (e.g., combining lecture, small group discussion and use of a graphic organizer in a lesson)	14.3% (1)	14.3% (1)	14.3% (1)	28.6% (2)	28.6% (2)	3.43

Table 17 (cont'd)

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
mention the same information in a number of different ways (e.g., say it, show it, model it, use of different forms of media)	14.3% (1)	14.3% (1)	0.0% (0)	42.9% (3)	28.6% (2)	3.57
utilize digital texts (if available)	66.7% (4)	0.0% (0)	16.7% (1)	0.0% (0)	16.7% (1)	2.00
provide opportunities for students to represent their learning in multiple formats using presentation and graphics software (e.g., PowerPoint presentations, iMovie)	71.4% (5)	14.3% (1)	14.3% (1)	0.0% (0)	0.0% (0)	1.43

Table 17 (cont'd)

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
provide opportunities for students to demonstrate their learning through oral presentations (e.g., small groups, whole class presentations, group presentations, a demonstration)	57.1% (4)	42.9% (3)	0.0% (0)	0.0% (0)	0.0% (0)	1.43
provide opportunities for students to demonstrate their learning through other forms of writing (e.g., a children's story, a poster, a model)	42.9% (3)	57.1% (4)	0.0% (0)	0.0% (0)	0.0% (0)	1.57
offer flexible means of engagement (e.g., students who are not working toward a MMC diploma may study a smaller number of concepts or complete just a portion of an assignment)	42.9% (3)	14.3% (1)	0.0% (0)	42.9% (3)	0.0% (0)	2.43

On the high end, all of the co-teachers who responded to the survey reported that they talked together about upcoming lessons to determine what components might be problematic for some students either *sometimes* (three of seven teachers), *fairly often* (two of seven teachers), or *frequently* (two of seven teachers). Five of the seven reported that they modified their plans for upcoming lessons to increase accessibility for students either *sometimes* (three teachers) or *frequently* (two teachers). In contrast, two teachers reported that they *seldom* (once per month) or *rarely* (once per semester or less) modified plans for upcoming lessons to increase accessibility. This infrequent modification of lesson plans may reflect concerns expressed by some teachers in the study about the pressure to cover the curriculum. Ms. Armstrong reported, “The school district has locked us into a curriculum we are expected to cover during the year. This curriculum is so full and moves at such rapid speed that we have no time at all for any of the alternative strategies listed above.”

In addition to concerns about covering the curriculum, teachers expressed the need for common planning time in order to accomplish these tasks. Ms. Russ reported that she and her co-teacher had no common planning time during the second semester during the year in which the study took place. “When we do chat, the lessons are planned out ahead of time by the general education

teacher. Sometimes input is used to teach and differentiate the curriculum but not often.”

When teachers do make modifications to instruction to meet the needs of students, two items on the survey were reported to be used by the largest number of teachers. More than half of the teachers (four of seven) reported that they utilize multiple formats to present lesson information and five of seven teachers reported that they mention important information in a number of ways. Ms. Pine reported that concepts usually are taught first using a lecture accompanied by a PowerPoint. An activity, possibly a video, and then a lab follow this. Ms. Carey reported that she and her co-teacher have created wikis and blogs to support access to the curriculum and increase student interaction with course material.

The use of multiple ways to present information was observed by this researcher in at least two lessons presented by two different teams. In one lesson, Ms. Russell, the special education teacher, labeled a graphic organizer drawn in the shape of a tree while the science teacher, Ms. Pine, reviewed content they had covered earlier in the semester (e.g., digestive system, respiratory system, reproduction) and previewed upcoming topics. By using this graphic organizer, they were able to show where the current topic fit within the other topics covered in the course. This appeared to be a helpful

organizational tool for the students and seemed especially important in this case because there were a number of topics traditionally covered in an introductory biology course that would not be covered in this course because they were not topics tested on the MME. Ms. Pine explained, “We are skipping the fungi branch and the plant kingdom. Yes, those could be dead parts of our tree because we won’t be talking about them.” By showing where these topics fit in their “Tree of Life,” the students could view the bigger picture and see where the topics fit within the bigger picture. In a second case observed by this researcher, Ms. Patrick used a PowerPoint to cover introductory information on worms. She embedded photographs illustrating important characteristics and examples of each organism within the PowerPoint. In addition, she designed a table that the students used to record important information about each type of worm as she discussed it. The table contained partial notes with space for students to fill in information shared during the lecture; the table also contained space for students to draw diagrams or examples. The structure provided by the notes helped students follow along and assured that their notes contained all relevant information. In addition, if students missed something, they were better able to ask a specific question to obtain the information they missed. When asked if Ms Gregg, the special education teacher, had created the table the students used when taking notes, Ms. Patrick explained that, “no,” she

created that table based on her previous experiences co-teaching and had shared it with Mrs. Gregg.

In addition, Ms. Gregg explained that she had been teaching students how to take notes all year. Earlier in the year Ms. Gregg reported that she “modeled” the notetaking process on the overhead as Ms. Patrick lectured. She said that at this point in the year, the students were becoming more proficient at notetaking without her model.

Other UDL practices on the survey were reported to be used less frequently with frequency-of-use ratings of 2.43 or less. These included (in descending order) offering flexible means of engagement (2.43), utilizing digital texts (2.0), providing opportunities for students to demonstrate their learning in other ways (1.57), and providing opportunities for students to demonstrate their learning through oral presentations or using presentation software (1.43).

It is of concern that two teachers reported that even though they talked with their co-teacher about upcoming lessons to determine what might be problematic for their students, they *rarely* (once per semester or less) or *seldom* (once per month) modified their plans for upcoming lessons to make them more accessible for their students. As mentioned above, this may be the result of a number of factors including pressure to cover the curriculum and lack of planning time to implement alternatives. Also of concern is that frequency-

of-use ratings for five of nine practices were 2.43 or below. It may be that the co-teachers in this study have less understanding of what they can do to support struggling readers and writers through the use of assistive technology and how the three components of UDL, representation, expression, and engagement, can be used to increase access to the general education curriculum.

Assessment. Within the category of Assessment, reported frequency-of-use ratings fall into three bands (see Table 18). Co-teachers in this study report that they *frequently* read tests to students who struggle with reading (4.0), rephrase test questions if necessary (4.0), use observation to assess student progress (3.71), and analyze student work to better understand their progress (3.57). Practices in the middle band include modifying tests for students who are not working toward a MMC diploma (3.0), use of formative assessments to monitor student learning (2.71), use of a variety of types of questions on assessments (2.71), and use of summative assessments and common assessments (both 2.57). The lowest rated item addressed creating opportunities for students to represent their learning in multiple formats (1.57); this confirmed low frequency-of-use ratings in the UDL category.

Table 18

Assessment

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
use formative assessments (assessments for learning) to understand and monitor students' understanding	0.0% (0)	42.9% (3)	42.9% (3)	14.3% (1)	0.0% (0)	2.71
use summative assessments (assessment of learning)	14.3% (1)	28.6% (2)	42.9% (3)	14.3% (1)	0.0% (0)	2.57
use a variety of types of questions on assessments	0.0% (0)	28.6% (2)	71.4% (5)	0.0% (0)	0.0% (0)	2.71

Table 18 (cont'd)

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
use observation to assess students' progress	14.3% (1)	14.3% (1)	0.0% (0)	28.6% (2)	42.9% (3)	3.71
create opportunities for students to represent their learning in multiple formats (e.g., PowerPoint presentations, posters, iMovie, children's story)	57.1% (4)	28.6% (2)	14.3% (1)	0.0% (0)	0.0% (0)	1.57
administer common assessments utilized by other teachers of this course	14.3% (1)	42.9% (3)	28.6% (2)	0.0% (0)	14.3% (1)	2.57
analyze student work to better understand student progress	14.3% (1)	0.0% (0)	42.9% (3)	0.0% (0)	42.9% (3)	3.57

Table 18 (cont'd)

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
utilize results of diagnostic assessments, common assessments, or other available assessments to understand students' strengths and weaknesses and plan future instruction	28.6% (2)	14.3% (1)	28.6% (2)	28.6% (2)	0.0% (0)	2.57
read tests to students who struggle with reading	0.0% (0)	0.0% (0)	14.3% (1)	71.4% (5)	14.3% (1)	4.00
rephrase test questions if necessary	0.0% (0)	0.0% (0)	16.7% (1)	66.7% (4)	16.7% (1)	4.00
modify tests for those students who are following a modified curriculum (not working toward a MMC diploma)	28.6% (2)	0.0% (0)	28.6% (2)	28.6% (2)	14.3% (1)	3.00

Individual responses to each practice generally clustered together in a fairly narrow range with the exception of the responses to the item *modify tests for those students who are following a modified curriculum (not working toward a MMC diploma)*. It appears that co-teachers are struggling with how to differentiate for students who are not working toward a MMC diploma as two co-teachers reported that they *rarely* (once per semester or less) modify tests, two co-teachers reported that they *sometimes* (once every two weeks) modified tests, two teachers reported that they *fairly often* (once per week), and one teacher reported that frequent modifications (two or more times per week) are made.

Overall, co-teachers in this study reported utilizing assessments in a fairly traditional way to evaluate student learning. Testing accommodations are provided as needed (e.g., reading tests to students and rephrasing questions), generally by the special educator. These accommodations, if stated in the student's IEP, would be provided whether the student was in a co-taught class or not. Co-teachers in this study reported that they were less likely to utilize alternative means of assessment or use assessments to guide instruction. It is unclear why the co-teachers in this study handle assessment in this way. This is an area in which future study may lead to a wider understanding of teachers' assessment practices.

Classroom and behavior management. The survey contained only two items in this category (see Table 19) below. Four of seven co-teachers report that they utilize principles of positive behavior support to support student learning *sometimes* (at least every two weeks) while three of the seven report that they *seldom* (once per month) utilize these techniques. Four of five teachers report that they *rarely* develop behavior plans.

Table 19

Classroom and Behavior Management

Questions	Rarely (1 time or less per semester)	Seldom (once per month)	Sometimes (once every 2 weeks)	Fairly often (1 time per week)	Frequently (2 or more times per week)	Frequency-of-use Average
use principles of positive behavioral support (e.g., frequent feedback, targeted feedback that specifies behavior being reinforced, frequent engagement in positive reinforcement) to support student learning	0.0% (0)	42.9% (3)	14.3% (1)	14.3% (1)	28.6% (2)	3.29
develop behavior plans if necessary	80.0% (4)	0.0% (0)	20.0% (1)	0.0% (0)	0.0% (0)	1.40

It may be that the co-teachers in this study do not have the need to develop behavior plans. The district has a large alternative education program where

students who struggle to comply with classroom rules at their home (traditional) high school are encouraged to enroll.

Summary. Co-teachers in this study reported utilizing many individual practices to support access to the curriculum. The individual practices utilized most frequently (based on frequency-of-use ratings) seem to be focused on modifications and teaching practices that enable access to and coverage of the curriculum (see Table 9). These teaching practices may promote access and coverage (e.g. Alexander's mentioning the curriculum, 2007) over understanding and learning. In addition, the most frequently used practices seem to focus on modifications that many teachers may utilize in their teaching rather than practices that may be unique to co-teaching. There was little reported use of practices recommended to support academic literacy instruction such as strategy instruction, discussion-oriented instruction, motivational context, and strategies to teach essential content (Kamil, 2008; Kosanovich et al., 2010; Torgesen et al., 2007). Instead, co-teachers in this study report utilizing teaching practices that enable coverage of the curriculum more frequently teaching cognitive strategies (Conley, 2006, 2007, 2008).

Wide variations were seen in the frequency with which co-teachers reported utilizing specific categories of practices. Co-teachers in this study reported utilizing practices from three categories most often. Reported

frequency-of-use ratings for Support for Learning Course Information, Supporting Struggling Readers and Writers, and Assistive Technology ranged from *sometimes* (once every 2 weeks) to *fairly often* (once per week). In contrast, co-teachers reported using practices from the Learning-to-Learn and Motivation for Learning categories least often with a frequency-of-use average rating of 2.13 for Learning-to Learn (*seldom* [once per month]) and 1.86 (*seldom* [once per month or less]) for Motivation for Learning.

Research Questions 2 and 3

In this section I will discuss the results for the final two research questions.

2. What factors support or constrain the use of co-teaching as a way to support access to the general education curriculum?
3. How can these results be explicated in terms of school change theory?

Primary data sources for this section derived from the interview data and extended responses on the survey; classroom observation data was used to triangulate findings across multiple data sources.

Because co-teaching is a complex endeavor with many confounding factors, the mere presence of two teachers in the classroom does not guarantee increased access to the general education curriculum. A number of factors may facilitate or hinder the effectiveness of co-teaching as a way to support students' access to challenging curriculum. As I read and reread the

interview transcripts, field notes, and results of the survey, several themes emerged from the data that helped to answer the research questions above.

The following themes illustrate factors that supported or constrained the use of co-teaching to support students' access to the general education curriculum. I will present four themes that seem to best illustrate factors that the co-teachers in my study reported as influencing their co-teaching practice. The first theme is the perceived need for co-teaching and benefits to co-teachers and students. The second theme that emerged was the role and impact of policy on what co-teachers in this high school do in their classrooms to support access to the general education curriculum. The third theme I will explore is the importance of shared purposes, goals, and expectations for the partnership and for the students. Clarity and the role of compatibility between co-teachers will be addressed as a part of this theme. Fourth, I will discuss the role that planning plays in what co-teachers do to support access to the curriculum. Finally I will comment briefly on the implementation of co-teaching as viewed through a lens of school change.

Need for co-teaching and benefits to co-teachers and students. All of the co-teachers in this study affirmed the need for co-teaching and responded positively when asked about the benefits of co-teaching in their setting. Each co-teacher in the study taught a course required

for graduation under the recently implemented MMC. The implementation of the MMC and realignment of district curricula resulted in an increase in rigor in each of these courses. Concurrent changes in requirements for HQ status for special education teachers resulted in a change in service delivery for students with disabilities at this high school. Because special education teachers could no longer teach courses required for graduation within special education, students who may have taken those courses in the past were now taking those courses in general education, often in co-taught classes. According to the co-teachers in this study, this resulted in increased academic diversity and students with greater academic needs in general education courses. Similar concerns were expressed by all of the teachers in the study.

When the school district realigned the curriculum with the new HSCEs, Ms. Pine's biology course was moved from tenth grade to the ninth grade. Ms. Pine said, "I definitely think it's a great thing to be able to have two teachers in the classroom. We have 30 students that we pack into these science classes and when you do have students of multiple abilities, you really do need two people ... to support the students that need it, the inclusion students." When asked what academic challenges students in her course faced, Ms. Pine felt that the content of the course is even more challenging for freshmen than sophomores. Ms. Pine shared that the number of scientific words that are unfamiliar to

students presents a significant challenge. She compared the number of new words that students face to learning a foreign language. She explained that in addition to learning many vocabulary words unique to biology, “students must understand diagrams, all the parts that go with each diagram, and how they all interact to illustrate a concept.” She said they must understand “how they all go together to make up this idea. You know, it’s not just one vocabulary term, it’s a bunch that go together [to illustrate a scientific concept].”

Because the vocabulary inherent to biology is so difficult for the students, Ms Pine shared that it is of great benefit to the students that she and Ms. Russell co-taught the course. Many of the unfamiliar words in biology contain Greek and Latin words parts. She explained,

Ms. Russell has a great background in [teaching] word parts so when it comes to breaking down these very scientific words, she’s got the background so that she can help the students see why the words fit together the way they do and [then] when they come up against a word that they don’t know, they start to break down the word parts and can have a fighting chance to figure it out.

Ms. Carey also shared her concerns about the increasing needs of students in courses required by the MMC. She explained,

Now that it's the MMC and kids have to pass [the course in order to graduate], we're in there working with maybe even lower students who before would've been in a special ed reading course...so our range of kids has changed but [we are] still just trying to make sure that we're in there, accommodating, making modifications, helping the gen ed teacher with lesson [development] and making sure it's a best fit for every student.

Ms. Carey explained that reading comprehension and writing are especially difficult for students in the course she teaches with Mr. Ball. She felt that a significant benefit for both teachers and students was the time that she and Mr. Ball can spend offering individual assistance to students when they teach essay writing. She explained, "It would take a teacher forever to provide written feedback." Instead, they approach it in this way:

When we're writing an essay, they're lost, so we make a point to sit down and do an outline with everyone. You know, [a] very detailed [outline]. Here's your introduction, what's your attention getter gonna be? What's your thesis? This is your thesis statement. Explain what your paper is all about. Your first body paragraph. What's the topic? What resources are you going to use? Let's go through your research. Let's highlight. Let's take notes. Okay, so what could you use from your research that could go in this paragraph to support this topic? And going through that with

them, before they start their paper and having a very detailed [outline to work from], you can't do that with one teacher in the room. You can't. You just can't.

Her co-teacher, Mr. Ball, offered similar comments. He said,

For me there's a huge benefit because just having another teacher in the room is just tremendously helpful in so many ways...to have another person....It's funny cuz initially when I knew I was gonna co-teach, it was a little bit like ugh, you know, it's kinda my room. You know, it's my room, and I have my way. You know what I mean? But I have no thoughts like that anymore. I mean...the benefits far outweigh the one semi-negative of it's not my room and ... all the assistance with organization and grading and everything else. Being able to target the kids that need additional help. Benefit after benefit.

Ms. Patrick reported benefits to both teachers and students. Ms. Patrick agreed that the concepts taught in biology are difficult for students. She said that having a co-teacher who possesses background knowledge in biology is helpful. "I like it just because then there's another body to circulate and answer all those questions because when it's just me, I can't, I can't get to all of them. I can't help them all and get all the questions I need to get." She further explained that it is beneficial to have someone to share ideas with and say,

“Hey, what do you think? Will this work? Or I know that this is a hard topic and kids are gonna have a hard time with this...Do you think if we do it like this it’ll work or if we do it like that? You know, to have somebody to bounce ideas off of.” She also shared that Ms. Gregg knows how to make modifications for students’ needs better than she does. She felt that both Ms. Gregg and the co-teacher she worked with previously possessed knowledge and could offer suggestions about how they might teach concepts or content that is typically difficult for students. She said, “They know the tricks of the trade and then I can say yeah, that works with this content material or that kinda thing. I like having somebody that knows those tricks.”

Working with students in smaller groups is another benefit that Ms. Patrick and Ms. Gregg utilized more during second semester. Ms. Patrick explained that Ms. Gregg could work with a smaller group and cover the content at a slower pace than the rest of the class while she worked with the other students. She felt that was a benefit to both the teachers and the students.

Although Ms. Armstrong also shared benefits of co-teaching for both teachers and students, many of her observations addressed the failure to maximize the potential benefits of co-teaching. Because this was her first experience co-teaching and her first year working with Ms. Russell, Ms. Armstrong had many unanswered questions about co-teaching. Her questions

about co-teaching and the sometimes conflicting responses and directives she received from administration were a source of frustration to her and may have resulted in a reduction in benefits to herself and her co-teacher and students, opportunities lost, and diminished the effectiveness of their work together.

Many of her concerns addressed a lack of clarity about co-teaching. Her questions included: What *is* co-teaching at our high school? What is our goal in co-teaching this course? Is the co-taught class supposed to teach exactly the same content as the other course? Is this a separate prep? What if we have no common planning time? She had been told that the expansion of co-teaching came about because of changes in HQ; students with disabilities could no longer receive content area instruction from a special educator who was not HQ in that content area. As a result, her class would now be co-taught. She explained, “We were never given any direction about how this person [the co-teacher] was to function. As a matter of fact, we were told that was for us to figure out which in a sense is good because then it allows you to do your own planning and to kind of create the class around your style. I think that’s wonderful. But on the other hand, what is it? What is this co-teaching?” These concerns regarding clarity will be discussed further below in the section that addresses developing shared purposed, goals, and expectations.

The role and impact of policy on what co-teachers do in the classroom. In this study, the impact of policy requirements at the federal, state, and local levels played a significant role in what co-teachers did in their classrooms. At the federal level, NCLB and IDEA 2004 have pushed schools to increase student achievement through the use of evidence-based practices.

At the state level, a recent change in graduation requirements for all students and regulations governing highly qualified (HQ) status for teachers resulted in changes in the way instruction is delivered to students with disabilities high schools in this state. The Class of 2011 was the first class to go through high school under the requirements of the Michigan Merit Curriculum (MMC). The MMC dictates 18 of the required 22.5 credits required for graduation from a Michigan high school while substantially increasing requirements in mathematics, sciences, and social studies. At the local level, the high school this research study recently changed from a full continuum of special education services to a service delivery model focused primarily on co-teaching in general education in responses to the policy mandates discussed above. This change was instituted for two reasons: (1) some students experienced difficulty passing courses required for graduation under the new graduation requirements adopted by the State of Michigan, and (2) changes in requirements for HQ status of special education teachers at the high school

level meant that none of the special education teachers in the building were considered highly qualified to teach content-area subjects.

In this high school, some co-teachers shared that they felt constrained by the amount of content that must be covered in their courses and by the reading and writing demands of the course content. Ms. Patrick explained that the number of new vocabulary words and concepts and the amount of reading present a significant challenge to freshmen taking their biology course and that students need to learn how to read a science textbook. “It’s technical reading, you know; it’s not enjoyable reading. It’s not stories. It’s just factual reading...and then just the magnitude of the material is, there’s so much stuff that they have to cover. I think they have a hard time grasping all those different concepts at the speed that we end up doing it.”

Ms. Carey and Mr. Ball shared their concern that because of the change in the curriculum and the limitations imposed by special education teachers lack of HQ status, students who in the past could take a reading and writing strategies class in which they can develop strategies to help them meet the demands of the general education curriculum are no longer able to take those classes. Also, students who may have taken some of their classes required for graduation from a special education teacher are now placed in general education courses. This results in an even broader range of student abilities and needs in each class

and increases the need for co-teachers to work together to make modifications and accommodations and work together to plan instruction that will be result in “a best fit for every student.”

As a result of changes in requirements at the state level, this district realigned its course offerings and developed curriculum guides to guide classroom instruction in some courses. Ms. Armstrong shared concerns about the constraints the district curriculum places on co-teachers’ ability to make adjustments in the sequence of instruction. She explained that a group of teachers (including herself) worked together the previous summer to develop the curriculum guides so that each of the 90+ High School Content Expectations (HSCEs) would be covered. The curriculum guides lay out the sequence of instruction for each unit including reading selections, the approximate amount of time that should be spent on each topic, the types of writing to be included in the unit, writing prompts, and rubrics for scoring student writing. Teachers know what is to be included in each lesson, and “we don’t have the time [to do anything different]...even if we were allowed a little bit of creative input in our own lessons. They’ve packed it so full, you have to cover this, this, this and this, that you can’t move, you can’t breathe.” As a result, there is little flexibility as co-teachers plan for instruction. Her co-teacher, Ms. Russell, echoed her concern.

As a result of this tightly packed curriculum, Ms. Armstrong said that she feels there is no time in her co-taught course to slow down and teach strategies that may be beneficial to struggling readers or writers. When discussing differentiating instruction in her co-taught class she said,

...that's ideally what you would do. You would customize the way you present the material, but unfortunately, we've got this curriculum inflicted on us and it doesn't have any room for any...it doesn't stretch or give or accommodate any differences. You march right through it. It's very prescribed and you don't have any choice and the timeframe is very, very short...and we're marching through this material at warp speed and every tenth grade teacher will tell you this. There's way too much to do and way too little time.

She concluded by asking, "Tell me how you can differentiate and customize for a class where there are students who need some adaptation? It's almost impossible to do."

Ms. Russell, the special education co-teacher, confirmed that the breadth of the curriculum significantly limited their flexibility to make adjustments or provide additional support for students who were struggling to master the curriculum. She explained that she suggested using exit cards to assess whether students understood the material presented in a given lesson. Her co-

teacher explained, “You can’t do that because there’s too much more I have to do. I have to move on to the next thing, and I don’t have time for you to take those kids that didn’t get it and take them in another room and discuss it again because they’re going to lose valuable time.”

Ms. Armstrong shared that she felt that they were unable to realize the potential of the co-teaching partnership because of the constraints they operated under. She said, “I’ve been told I have to observe this curriculum and it’s... it’s not anything that flexes. It’s step by step; you have to do this, this week, and that [during] that week. They give us our paper assignments. They give us the rubrics for everything.” As a result, she feels that she and her co-teacher have little flexibility in the use of practices that could enhance access to the general education curriculum. She felt that Ms. Russell, her special education co-teacher, is underutilized under these conditions. She speculated whether a well-trained teaching assistant could read tests to students and/or clarify questions when needed at a much lower cost. She concluded with, “Ms. Russell’s a joy to work with. She’s very enthusiastic and kids miss her when she’s not in the classroom. She really puts a spark of life in things. But...”

Ms. Pine shared similar concerns about the constraints of the biology curriculum. She explained that in the past when she and Ms. Russell co-taught science courses, Ms. Russell taught the Test-Taking Strategy (Hughes et al.,

1988) or other strategies that would be helpful to students in mastering the required content. She said that they hope to be able to do that again when they become more familiar with the new content, standards, and textbook for the course. “We just haven’t had time this year....I’m hoping to get to a point where we can go back and do that because all the students, whether they’re special ed or not, can use strategies to help them in class.”

This is in contrast to the flexibility that co-teachers reported having in previous years. Ms. Randall, the co-teacher with whom I co-taught history for five years, explained that we tried to do things in different ways including doing projects that would support understanding of the course content. “Flexibility in planning was integral to our practice. We told the kids we would include many types of learning activities, some that would be comfortable and familiar to them and others that would be new or would push them to try something different, but we’d try to include their favorite style every week.” The special education co-teacher (me) explained, “We never got quite as far in the curriculum as the other teachers teaching the same course, but no one was watching us, so it was OK.” Because of the constraints of the MMC and the district enactment of that curriculum, that type of flexibility is no longer exists and limits what co-teachers can do in their classrooms to support access to the curriculum. The willingness and desire to meet the needs of students seems to

be there, but the constraints imposed by the curriculum limit what co-teachers can do. Anything that will take time away from the next thing that must be taught is likely to be met with reluctance because it will put them behind others teaching the same course.

The importance of purposes, goals, and expectations. The definition and negotiation of shared purposes, goals, and expectations for the partnership and for student learning lays the foundation for what the co-teaching team will work toward in the classroom and what they can and will do to support access to the curriculum. Fullan (Fullan, 2001a) speaks extensively about the complexity of change. Integral to understanding the complexity of change and the development of shared purposes, goals, and expectations is clarity.

What teachers do to support access to the curriculum in one classroom may be very different from what co-teachers do in other settings to support access to the curriculum and should be related to decisions they made as a team as they defined their purposes, goals, and expectations. Ms. Randall, my co-teaching collaborator and partner in the Michigan Co-Teaching Project, reiterated the importance of shared purposes, goals, and expectations to our partnership.

We talked a lot about it being like a marriage. Planning together...that you couldn't just have one person be the special ed person and one person be the general ed person or the content person, but really you were both teachers in the classroom, and that a lot of time had to be spent on the front end deciding who was good at what, changing roles, who's gonna do some of the lecturing because we were a history class, who's gonna do the research, deciding what we liked and didn't like, and then going really unit by unit.

Really, we were partners. I suppose technically, I was the curriculum-giver, and you were the special ed person, but that became so muddled very quickly. We were the history teachers, and we really both did everything. I learned a ton from you, and hopefully you learned some from me.

Developing shared purposes, goals, and expectations may be even more critical when faced with increased demands for accountability and pressure to increase students' achievement while assuring that they master the content and pass the courses required of the MMC.

Clarity plays a role in the development of shared purposes, goals, and expectations. Lack of clarity about a new innovation is one aspect of change that can be examined through the lens of school change theory. According to

Fullan, the more factors that are working in support of the change or innovation, the more likely it is that changes in practice will occur. Likewise, if one or more factors are working against the process, implementation will be less successful or effective (Fullan, 2001b). Clarity regarding any innovation is a critical factor in the success of any innovation.

Ms. Armstrong talked extensively about her concerns with the lack of clarity about the co-teaching situation. (See additional discussion regarding clarity in the section on the need for co-teaching and benefits above.) After our initial interview, she returned several times to speak with me about co-teaching. She continued to ask questions about the details, policies, and practices involved in co-teaching. She had many unanswered questions that appeared to be slowing down their implementation of co-teaching. This could be perceived by some as reluctance or resistance to co-teaching, but by examining the new innovation, co-teaching, through the lens of school change, it appears to me that lack of clarity may be the pivotal issue.

The philosophy that Mr. Ball and Ms. Carey share may reflect the time and effort that they have expended developing shared purposes, goals, and expectations. Mr. Ball explained,

Yeah, but we're...just not very demanding. You know, if we were to write a paper in class, which we did five times this year, we give lab time.

[When] we go down [to the computer lab], we go paragraph by paragraph. Today [we write the] intro, next day is body [paragraph] one, [the next day] body [paragraph] two. We just work at a pace that I think is very fair for the co-taught kid. And when we read novels...[we tell them to] go home and read 12 pages, and we read 15 pages in class. And some of the kids come back and say, you know, that took me three hours to read those 12 pages. And then, you know, front row kid over there is probably reading it in communication break in six minutes....So that, that is a big struggle, I think, in this type of class....You saw Naquandra up front. [She] read four lines in ten minutes, and people in the back were ready to start answering questions.

Ms. Carey shared some of what she has learned from Mr. Ball that has helped to build their partnership as co-teachers and their co-teaching practice.

Mr. Ball's a great teacher. I've learned a lot from him. I started working with him my third year...so I was a new teacher still. Just learning how he develops relationships with kids. I've always been a relationship-based teacher. It's always been my big thing. But I've learned a lot from him, too....He's amazing....He has a great rapport with students. How he interacts and deals with stuff on a daily basis is great and I've learned a lot from him in that [way. He is] just real easy going, you know, but has

that love and passion for kids to learn, to really learn...to not just memorize stuff and regurgitate the information.

These comments reflect what I interpret to be the shared purposes, goals, and expectations that these two co-teachers who have worked together for five years share. According to James, one of their students in English 10,

They are the best co-teachers I've ever had. I don't know if they plan it that way, or if it just happens, but it works. Mr. Ball and Ms. Carey are good together because they "fit." Mr. Ball is really crazy, but Ms. Carey is crazy too, but she settles it. If Mr. George goes off on a topic that you don't know how it fits, Ms. Carey brings it back around and makes it fit, and they both collaborate and finish it off so it makes sense. Then you say, "OK, cool, I get it."

This student comment exemplifies the impact of shared purposes, goals, and expectations and clarity in the work of co-teachers.

The role of planning in instruction and supporting access to general education curriculum. The *Frameworks for Maximizing Co-Teaching Self-Reflection Guide* (Patriarca et al., 1997b) provides a way for co-teachers to understand, analyze, and examine the various aspects of co-teaching. One of the dimensions of the *Frameworks* addresses planning. The *Frameworks* tool asks co-teachers to analyze their planning behavior by reflecting on and

discussing the following four questions: (1) How often do you plan together? (2) How would you describe the way that you typically plan? (3) How comprehensive in scope is your planning? and (4) How would you characterize your planning? The first question asks if co-teachers plan together rarely, monthly, weekly, or daily. Question 2 addresses who does the planning for instruction. Variations on the continuum include one co-teacher planning alone, both co-teachers planning separately, both co-teachers planning together but one co-teacher is in control of the planning, and both co-teachers share in planning and control. The third question asks co-teachers to examine the comprehensiveness of their instructional planning. Do they plan mostly at the lesson level, at the unit and lesson level, or does the team develop a year-long curriculum plan from which units and lessons will be planned? Question 4 asks co-teachers to appraise the content of their planning using a continuum from mostly routine planning activities (e.g., who will carry out what portion of the lesson, who will make the copies, gather the materials, and type the test) to some conceptual planning (e.g., redesigning units to better meet the needs of students, creating activities, designing assessments) combined with some routinized planning to a focus on conceptual planning with necessary routinized planning (e.g., decisions about which teaching practices and routines will be used; discussion of necessary adaptations and modifications). In hindsight, the

Frameworks would have been a useful tool for each team to use to analyze their co-teaching practice. The purpose of this tool is not evaluative. Instead each co-teacher individually rates the team on each factor. After both members of the team individually rated the team, the two co-teachers meet and compare their ratings.

Absent that, I referred to the planning portion of the *Frameworks* document as I focused on the planning practices of the co-teaching teams. Keeping in mind the questions above, the interview transcripts were analyzed for comments about the planning practices of the co-teaching teams.

When asked about how she and her co-teacher plan for instruction, Ms. Armstrong referred back to our discussion of the district curriculum guide. She shared that she plans for instruction based on the curriculum guide and has not involved her co-teacher in much planning. “Because it’s so content oriented, she [her co-teacher] just can’t do anything with the content.... so it doesn’t function like true co-teaching could or should, and a lot of that is the lack of planning, the lack of flexibility in that we’re told what we have to cover and how we have to cover it.” She also expressed concern that during the second semester of that school year, she and her co-teacher had no common planning time during which they could discuss what was planned for the day and week. The previous semester they usually talked for 10 minutes or so during lunch,

but this semester that has not been possible. Ms. Armstrong felt that the lack of joint planning time increased tension between the two of them.

Lack of quality time for planning also resulted in tension for Ms. Pine and Ms. Russell. Ms. Pine explained that she said that she does most of the planning for the class they co-teach because they are “implementing new curriculum, new standards, new textbooks [with] all the new support materials....At this point, I didn’t know it, and she didn’t know it, so we had to kind of do our own thing.” She confirmed that they had common planning time daily, but said, “the amount of time that we have plus trying to get ready, we don’t get much time to sit down. We’re lucky if we get maybe 10 minutes, two, three times a week, just to kind of bounce off, you know, this is what we’re going to be doing this week. [These are] the worksheets we’re gonna work on.” She shared that when she and her co-teacher met to discuss upcoming instruction, she would have a tentative plan sketched out. Then her special education co-teacher served as a trouble-shooter. “She [special education co-teacher] takes them home [assignments for the week], reads the book and tries to do the worksheet so that she knows where she has questions and we can adjust it for the kids.”

When asked if she does most of the planning because she is the content teacher, she confirmed saying, “Right, you know, I’d love to be able to let her do more, and I think she will be more comfortable with that once she learns the

curriculum.” She expects that it will take two or three years before they “figure out what’s what” with the new curriculum, standards, and textbook.

Comments about planning from Ms. Gregg and Ms. Patrick were similar to those of Ms. Russell and Ms. Pine. Ms. Patrick explained that she has done most of the planning since she is familiar with the content. She teaches another biology class and an honors biology class, so she plans similar activities for each class. She sends notes, tests, and activities to Ms. Gregg in advance so that she can make necessary changes. They talk during class, and Ms. Gregg stops to talk with her during their common planning period. Ms. Gregg shared that she can anticipate in advance where problems may arise; when she identifies a potential problem in an upcoming lesson, she and Ms. Patrick try to devise a way to work around it or a different way to present the information. They also make changes “on the fly” if what they are doing isn’t working well.

Mr. Ball and Ms. Carey talked the most about planning in their interviews (seven coded entries for Mr. Ball and 19 for Ms. Carey). Their responses also exhibit the richest use of planning to guide instruction and contain more examples of higher levels of planning on the *Frameworks* continua. They both shared that they like to schedule a half-day for planning every quarter; during that time they plan units a couple months in advance. Recently they have been meeting during their lunch period. Ms. Carey said that they can’t get as much

sketched out during that time, but they can get a few weeks done and fill in the details later. She explained, “Ken and I have been doing it so long [five years] that we can see each other the day before or that morning, and I can say this is on the calendar tomorrow. What’s the plan?” She said that at this point, they very efficiently handle the routine details (e.g., making copies). In contrast, she explained that the planning process is very different with the other teacher with whom she co-teaches. This year they have included that second year teacher in their planning sessions as Ms. Carey also co-teaches with her.

Through the lens of school change. The implementation of co-teaching is a complex endeavor, and each of the teams I studied was in different places in the development of their co-teaching practice. When examining the implementation of co-teaching at this high school through the lens of school change, it is helpful to evaluate the implementation of co-teaching based on elements of the theoretical framework utilized by this researcher. Charter and Jones’ (Charter & Jones, 1973) levels of reality provides one lens through which implementation can be viewed. Data were not collected to answer this question, so I am unable to provide complete results; instead I will offer general results and one example from the data.

Administration at this school made the commitment to expand the use of co-teaching (*Level 1*). This decision addressed several concerns including the

increased rigor of courses required by the MMC and the loss of HQ status by secondary teachers. Necessary structural changes (*Level 2*) were put into place to facilitate co-teaching -- co-taught sections were added to the schedule, teachers were recruited for co-taught sections, and general education and special education teachers were paired up. Some teams were established teams and volunteered to continue to co-teach, others had co-teaching experience with other courses and teachers, while some teachers had never co-taught. However, there was no professional development, coaching, or additional planning time that was provided to the co-teaching teams. This is where formal implementation efforts by the administration ended.

The example that follows illustrates the progression of one co-teaching team beyond Charter and Jones' *Level 2*. Ms. Carey and Mr. Ball seem to have developed a deeper understanding of co-teaching and how it can be used to increase student learning (*Level 3*). They shared numerous examples of how they have modified their instruction to better meet the needs of their students. They talk about their students and the impact of what they do on students' success with the curriculum. They use co-teaching to refine their instruction so that student learning is enhanced (Gersten et al., 2000).

In order for an innovation to be considered fully implemented (*Level 4*), Charter and Jones discuss the need to consider changes in instruction and

learning from the students' perspective and emphasize the need for school leaders to "attempt to describe or measure the school's educational program as experienced and enacted by students" (p. 7). James, a tenth grade student in their co-taught English class, explained, "What they teach you kind of sneaks up on you. It seems a little ridiculous at first but then, cool, it makes sense. They are the best co-teachers I've ever had." From this student's perspective, what they are doing seems to be making a difference. (Other teams may also have progressed into Charter and Jones' Level 3 and 4, but those data were not collected.)

CBAM (Hall & Hord, 2006) is another research-based approach to support innovation and change in schools. It is likely that each co-teaching team would fall on a different place on Hall and Hord's Stages of Concern and Levels of Implementation (2006). Hall and Hord recommend the use of a one-legged interview to probe teacher concerns and evaluate the level of implementation. Professional developers and instructional coaches can use the one-legged interview to guide their work in supporting implementation efforts. Open-ended questionnaires or surveys can also be used to determine where an educator falls on the Stages of Concern. I did not utilize any of these tools in data collection for this study but will comment about the concerns expressed by co-teachers in this study.

The year during which this study was conducted was the first year that Ms. Armstrong and Ms. Russell co-taught together and the first year that Ms. Armstrong co-taught with anyone. Ms. Armstrong's concerns seem to center on Stage 1 (Informational), Stage 2 (Personal), and Stage 3 (Management). Ms. Armstrong shared many unanswered questions regarding how co-teaching works, the curricular requirements, and how this was impacted (or not) by co-teaching, and the parameters. She asked, "What *is* co-teaching at our high school?" She also shared her personal concern that she teaches the same components of the curriculum with her co-taught class that she covered in her other classes. She sought to maintain the integrity of the curriculum content rather than offering a watered down version of the course. Her concerns related to the Management Stage addressed how co-teaching should / could be integrated with the district mandated curriculum and pacing guides. She felt that English teachers were so locked into the mandated curriculum that they had little time and opportunity to incorporate teaching practices that might be utilized by co-teachers. In summary, many of Ms. Armstrong's concerns related to the content of the curriculum.

In contrast, Ms. Russell shared concerns that seemed to align most closely with Stage 3 (Management) and Stage 4 (Consequence). Because Ms. Russell had experience co-teaching with a number of different teachers in ELA, science,

and social studies, she had a more solid understanding of co-teaching and did not express concerns in this area. Her concerns were centered on how she and her co-teaching partner could adapt instruction to meet the needs of the struggling student. Because she was not the content expert in this course, she was less familiar with the content demands and, therefore, she was less concerned about the content-related issues expressed by Ms. Armstrong. She was most concerned with how to plan for instruction that would result in benefits to all students but especially for those students with disabilities or those at risk for failure. This difference in the nature of their concerns (content related vs. student related) may be problematic but may be one of the most common differences that a co-teaching team needs to negotiate. The focus of the content teacher naturally is content. Likewise, the special educator comes into the situation with the goal of improving academic outcomes for *her* students in particular. The co-teaching team needs time to share their viewpoints and listen to the viewpoint of their teaching partner in order to better understand the concerns of the other and work toward common purposes, goals, and expectations.

In contrast, the concerns expressed by the two teams of co-teachers who were teaching the new biology curriculum to a new grade level of students were fairly similar. Their concerns related more to the implementation of a new

biology curriculum than to implementation of co-teaching. They each expressed concern about how difficult the content was for ninth grade students and that they were needed to learn the new curriculum (Stage 3: Management and Stage 4: Consequence) before they could more effectively utilize co-teaching to support access to the curriculum. The general education biology teachers felt that they were scrambling to keep up as they learned the new curriculum and looked forward to the following year when they hoped to have more time to plan with and collaborate with their co-teachers.

The concerns shared by Ms. Carey and Mr. Ball aligned most closely with Stage 4 (Consequence), the impact on students; Stage 5 (Collaboration), working together to increase effectiveness; and Stage 6 (Refocusing). Mr. Ball shared that initially he was concerned about the impact of co-teaching on him (Stage 2: Personal) as he would have to share his classroom and talk with someone else about classroom procedures and instruction, but he found that the benefits outweighed any negatives. Now this team is focused on refining their implementation of the new curriculum and increasing the performance of their students.

Summary. In the section above I discussed four themes that best represented factors the co-teachers in this study reported to be influential in guiding their co-teaching practice. The first theme I discussed was the

perceived need for co-teaching and benefits to co-teachers and students. The co-teachers cited the increased academic diversity in their classes and the increased needs of students with disabilities as the more rigorous Michigan Merit Curriculum (MMC) was implemented. All of the co-teachers in this study agreed that co-teaching was needed and shared benefits for both students and the co-teachers involved. One teacher also shared her concerns about the failure to maximize the potential benefits of co-teaching. Many of the co-teachers' comments were related to the second theme, the role and impact of policy on what co-teachers in this high school did in their classrooms to support access to the general education curriculum. The co-teachers shared that they felt significant pressure from external policies to cover all components of the new curriculum and felt that these external requirements constrained, limited, and/or directed what they could do in the classroom. Each of the co-teaching teams dealt with these policy pressures in an unique manner which seemed to be related to their conception and development of shared purposes, goals, and expectations (the third theme) and the role of planning in their work (the fourth theme). The third theme, developing shared purposes, goals, and expectations, may be even more critical when faced with increased demands for accountability and pressure to increase students' achievement while assuring that students master the content and pass the courses required of the MMC. The importance

of shared purposes, goals, and expectations for the partnership and for the students appeared to play an important role in the development of a co-teaching team's practice. The importance of clarity about the practice of co-teaching and the role of compatibility between co-teachers was explored. Lack of clarity about co-teaching played a role in the development of shared purposes, goals, and expectations. Fourth, I discussed the role that planning played in what co-teachers did to support access to the curriculum. Each co-teaching team handled the demands of planning a little differently, but the common theme was that the broad curriculum, new texts and materials, and new standards and pacing guides impacted the frequency of planning, the way they planned, the scope of their planning (lesson, unit, or course-level planning), and the depth of their planning (conceptual planning vs. routinized planning). Finally I commented briefly on the implementation of co-teaching as viewed through the lens of school change.

Chapter 5

Conclusion and Implications

In this study, I attempted to learn more about the practices co-teachers report using to support access to challenging curriculum for students with disabilities and students at risk for academic failure. Specifically I was interested in determining the practices teachers reported to be using, how often they reported utilizing these practices, and in obtaining examples of how some of these practices are used to support access to the curriculum. I also sought to understand the factors that supported or constrained the use of co-teaching as one way to support access to and success in the general education curriculum. Careful analysis of the practices that co-teachers utilize to support access to the curriculum for students with disabilities and students at risk for failure can facilitate efforts to understand and improve co-teaching practice. I see this work as a step toward increasing the effectiveness of co-teaching as one special education service delivery option for students with disabilities.

Summary and Implications for Practice

This study provokes questions related to how co-teaching is currently used to support access to the general education curriculum. Questions are also raised about how we prepare teachers to co-teach both in

terms of their classroom practice but also in relationship to how two teachers can work together most effectively.

Insights into the instructional practices that teachers reported to use to support access to the curriculum. The co-teachers who participated in this study reported using a wide variety of practices to support students' access to challenging curriculum. Practices from the category, Support for Learning Course Information, were reported to be most frequently used, while practices from the Learning-to-Learn Strategies category were reported to be used least often. Teachers reported using practices from the other seven categories in varying frequencies with some practices being used fairly often while others were rarely used.

In general, the co-teachers reported using practices that may have required less effort, preparation, or change in their instruction. This may suggest that the co-teachers in this study relied more on generic teaching practices and/or commonly used modifications and accommodations than on specialized practices. It may also suggest that at a time when the amount of content in the curriculum has significantly increased, course standards have been raised, assessments have changed, new textbooks are in use, and classroom groups are more academically diverse, co-teachers are doing

everything they can to keep up with the curriculum and are not focused on seeking out alternative approaches.

The practices reported to be used, the number of practices co-teachers reported they utilized, and the frequency of use varied across co-teaching teams and did not seem to be related to the disciplinary subject. This variance may be related to the purposes, goals, and expectations established by co-teaching partners who had developed a common understanding of what they would do to support access to the curriculum, or it could be a consequence of the tendency of teachers to do what is familiar, comfortable, or has been successful in the past.

Co-teachers in this study did not report frequent use of research-based practices to support content learning that have been found to result in large effect sizes for students with learning disabilities such as learning strategies, graphic organizers, hands-on activities, computer-assisted learning, peer mediation, and mnemonic strategies (Scruggs & Mastropieri, 2010). This supports the findings of other researchers (e.g. Baker & Zigmond, 1995; King-Sears & Bowman-Kruhm, 2011; Pearl & Miller, 2007; Magiera & Zigmond, 2005; Scruggs et al., 2007; Scruggs et al., 2010; Weiss, 2004) who reported seeing little that was different or unique about instruction in co-taught classrooms. They reported that they did not find instruction that was specially designed to

meet the unique needs of students with disabilities. Instead instruction and modifications utilized tended to focus on the class as a whole. These researchers reported that co-taught classrooms looked a lot like solo-taught classrooms with the addition of another adult. Determining why co-teachers utilize certain practices and not others is an area in need of further investigation.

It may be beneficial for co-teachers to have the opportunity to meet together to discuss common concerns, brainstorm solutions, and share effective strategies and practices; this could be a valuable way to share ideas and strengthen co-teaching in this building. Several co-teachers in this study mentioned that administrators had proposed implementing something like this to support co-teachers, but it did not occur during the year this study took place. Also needed is extended time during which co-teaching teams can engage in the in-depth discussions necessary to develop common purposes, goals, and expectations for both the partnership and for student learning and use this shared understanding as they plan for instruction that will best meet the needs of diverse student groups.

The perceived need for co-teaching and benefits of co-teaching. The co-teachers in this study confirmed the need for co-teaching in this high school. Because of the increased graduation requirements

accompanied by the increased rigor of courses required for graduation, teachers are faced with a wider range of student abilities and needs within their classes. Co-teachers in this study felt that by working together they can better meet the needs of their increasingly diverse groups of students. Co-teachers shared examples of the ways in which co-teaching was beneficial to them and to their students. One co-teacher also shared concerns that she and her co-teacher are not able to maximize the potential benefits of co-teaching. Her questions about co-teaching and the sometimes conflicting responses and directives she received from administration were a source of frustration to her and may have resulted in a reduction in benefits to herself and her co-teacher and students, opportunities lost, and diminished the effectiveness of their work together. Her candid discussion of her concerns and the failure to make the most of co-teaching raised critical issues that need to be addressed if co-teachers are to make the most of co-teaching.

The role and impact of policy on the practices of co-teachers.

In this study, the impact of policy requirements at the federal, state, and local levels played a significant role in what co-teachers did in their classrooms. All teachers expressed concern about the breadth of the curriculum and the need to “cover” everything. Specifically Ms. Armstrong also shared concerns regarding the constraints imposed by the district curriculum / pacing guide and

the inability to make adjustments to meet the needs of various student groups. The willingness and desire to meet the needs of students seems to be there, but the constraints imposed by the curriculum and policy appeared to limit what co-teachers could do.

Co-teachers' efforts to cover everything in the curriculum, what Alexander (2007) refers to as "mentioning" the curriculum, may result in superficial coverage of a broad curriculum allowing little time for deep learning. This may result in mixed or competing priorities regarding what students with disabilities will be taught and can result in the appearance of access to the curriculum in contrast to substantive opportunities for learning (King-Sears & Bowman-Kruhm, 2010). Grossman and Thompson (2004) explain, "district policy can serve as a lens to focus new teachers' concerns, teaching them in effect what to worry about" (p. 296). I suggest that this is not just true for new teachers. Co-teachers in this study reported focusing nearly exclusively on getting through the curriculum dictated by state and local policy. They utilized the methods that they felt would best allow them to do this. Ms. Armstrong told me that my survey included some great practices and strategies that would be helpful to her students, but she just didn't feel that they had time to include anything like that. She felt that those practices and strategies would take time

away that she and her co-teacher needed to focus on getting through the required curriculum.

It may be beneficial for co-teachers in this building to be involved in professional development that would help them to rethink how content could best be covered to facilitate student learning. Teachers may not understand how research-based practices and strategies that have been shown to increase content learning in students with disabilities could support their coverage of the curriculum and enhance student learning (King-Sears, 2011). They may need to reframe their understanding of how they can incorporate research-based practices in a way that would help them *teach* the curriculum (J. Certo, personal communication, August 29, 2011).

These are topics worthy of further exploration by the instructional leaders in the building. Building administrators talked of providing time when all of the teams could meet together and share ideas, but unfortunately, time to do this was not scheduled during the year that the study took place. This may be helpful to co-teachers in this building. A forum such as that could provide a way for co-teachers to share ideas, successes, and strategies for more successfully negotiating the dense curriculum rather than leaving each team to work out solutions on their own. This topic connects directly to the importance

of shared purposes, goals, and expectations and the relationship between this and effectiveness of co-teaching teams.

The importance of shared purposes, goals, and expectations.

In a study by Tippet (in preparation), the two co-teachers she interviewed both stated separately that their primary goal and the way they assessed their effectiveness as a team was based on how many students passed the course. The general education teacher also stated that an additional goal for the co-taught class was that it would be taught in exactly the same way as his non-co-taught classes. These are ways that goals and success in co-teaching was defined and evaluated by one co-teaching team in Tippet's study. What seems to be most important is that the members of the team collaboratively negotiated purposes, goals, and expectations that would guide their practice (Patriarca, 1997). In the example above from Tippet's research (in preparation), the co-teachers each shared that the way they assessed their effectiveness as a co-teaching team was whether students passed their course; I do not know for sure, but this consistent response may be because the two teachers talked about how to evaluate their success and determined that this was one way to judge success. The general education teacher shared one additional criterion for success, that the co-taught section of the course would be taught in exactly the same way as his non-co-taught section of the course.

Given that co-teaching often involves changing or adjusting one or more aspects of instruction, this teacher's goal/criteria for success may be in conflict with the tenets of co-teaching and may express a purpose or goal that was not jointly negotiated with his special education co-teacher. It is this discrepancy between purposes, goals, and expectations that may be harmful to a co-teaching partnership and may limit what this team can accomplish.

Developing shared purposes, goals, and expectations may be even more critical when faced with increased demands for accountability and pressure to increase students' achievement while assuring that they master the content and pass the courses required of the MMC. Clarity plays a critical role in the development of shared purposes, goals, and expectations. Several times Ms. Armstrong asked, "What *is* co-teaching at our school?" Her many questions about what it meant to co-teach at this high school reflected her lack of clarity about this new instructional approach and thus, may prevent or slow down the development of shared purposes, goals, and expectations for their partnership and for their students.

In their recent book *Switch: How to change things when change is hard*, Heath and Heath (2010) explain, "what looks like resistance is often a lack of clarity" (p. 17). In their book, Heath and Heath discuss the critical importance of clarity. They feel that in order to successfully implement and sustain an

innovation, teachers need crystal-clear direction so that they know what they are expected to do and how they should do it. Heath and Heath use an analogy of a “Rider directing an Elephant” to describe the critical elements and process of school change. According to Heath and Heath, “If the Rider isn’t sure exactly what direction to go, he tends to lead the Elephant around in circles” (p. 15), but if the Rider and the Elephant are working together, change can come easily. In discussing how to achieve clarity, Heath and Heath (2010) suggest that school leaders (1) find the bright spots, (2) script the critical moves, and (3) point to the destination. Each of these could contribute to more effective implementation of co-teaching at this high school.

Some examples from the data suggest that the team who had worked together for five years, Mr. Ball and Ms. Carey, might be farther ahead than the others in dealing with the extensive requirements of the curriculum. Perhaps that is because they have worked together for five years and have figured out how to streamline the curriculum or perhaps it is related to clarity. After five years co-teaching together, Ms. Carey and Mr. Ball seem to quite clear about their purposes, goals, expectations for their partnership and their students. I didn’t ask them how they reached the point where they feel that they have it figured out. That omission was my error. Their responses would be helpful in guiding the development of future teams.

The role of planning. The *Frameworks for Maximizing Co-Teaching Self-Reflection Guide* (Patriarca et al., 1997b) provides a way for co-teachers to understand, analyze, and examine the various aspects of co-teaching. The *Frameworks* tool asks co-teachers to analyze their planning behavior by reflecting on and discussing the following four questions: (1) How often do you plan together? (2) How would you describe the way that you typically plan? (3) How comprehensive in scope is your planning? and (4) How would you characterize your planning? Although this tool was not used in this study, the four questions in the planning dimension are useful in looking at the planning practices of the co-teachers in this study. Three of the four co-teaching teams in this study spend relatively small amounts of time planning together. These are also the least experienced teams in the study. These co-teaching teams are dealing with new curricula and standards and felt that they were barely able to keep up with the demands of new curricula and standards. These co-teaching teams reported that typically the general education teacher took responsibility for most of the planning; once they developed tentative plans, the special education teacher made an effort to preview the plans and offer suggestions for modifications. This approach to planning was frustrating to each of these teams, and the co-teachers involved expressed the hope that with more experience with the curriculum their planning would become more collaborative.

The fourth team had co-taught together for five years and felt comfortable that they effectively planned for instruction, both at the lesson level, the unit level, and at the course level. They either blocked out a larger chunk of time (a half day each quarter) or meet regularly over lunch to plan.

The implementation of co-teaching through the lens of school change. The previous spring, administrators in this building made the decision that co-teaching would become the service delivery option of choice in this building. Reasons for the decision included the need to support the increasing number of students who struggled to pass courses required by the MMC and to comply with change in the law regarding HQ status of special educators in the building. The necessary structural changes were made including adding co-taught sections of required courses to the master schedule, establishing co-teaching teams, and scheduling target students into those sections.

Subsequent to that, the co-teaching teams were on their own to learn to work together and implement teaching practices that would result in improved student outcomes. No plan for professional development or coaching was developed to support the co-teachers in their implementation efforts.

Rather than expecting co-teachers to figure it out on their own, there is an opportunity here to develop co-teachers through predictable stages (e.g., Frede, 2003; Hall & Hord, 2006) through the use of professional development

and coaching. Teachers do not develop complex concepts or implement new programs or innovations all at once or in a linear fashion (Frede, 2003; Hall & Hord, 2006). I did not collect data that would allow me to compare the concerns expressed by co-teachers in this study with Hall and Hord's Stages of Concern (2006) or compare their level of implementation with Hall and Hord's Levels of Use (2006), nor did I ask the co-teaching teams to evaluate their practice using the *Frameworks for Maximizing Co-Teaching* (Patriarca et al., 1997). Even without these data, I can say that each of the co-teaching teams in this study was at a different place in the development of their practice. Frede explains, "During the process of mastering the curriculum, they [teachers] tend to reach certain plateaus or levels where their understanding is organizing in particular ways" (p. 5). It is at these points that professional development and coaching could help these co-teachers to move forward in the development of their practice.

Research has shown that effective professional development that includes follow-up support can serve as a bridge between research and practice (Desimone, Porter, Garet, Yoon, & Birman, 2002; Garet, Porter, Desimone, Birman, & Yoon, 2001). Although research substantiating the link between professional development and gains in student achievement is scarce, some research exists. Yoon and colleagues (Yoon, Duncan, Lee, Scarloss, & Shapley,

2007) reported in their meta-analysis that professional development in combination with follow-up support was effective in increasing student achievement. Of the studies that met their criteria for inclusion in their meta-analysis, those that utilized more than 14 hours of professional development showed a “positive and significant effect on student achievement from professional development” (p. 5). In all but one of the studies, follow-up sessions were utilized to support the initial professional development. In their review of studies that examined the impact of coaching on fidelity of implementation, Kretlow and Bartholomew (2010) reported that teachers generally preferred coaching to other forms of follow-up. In their study, Kretlow and colleagues (Kretlow, Cooke, & Wood, in press) found that all teachers improved their delivery of targeted strategies after attending professional development with an additional bump in growth after teachers participated in coaching. These studies point to the potential for changes in instruction with professional development and coaching.

One area of focus important to the development of co-teaching practice lies in facilitating the conversations necessary for co-teaching teams to develop purposes, goals, and expectations. Chapman and Hyatt (2011) explain that, “the secret to quality co-teaching is not so much the strategies or models the teachers were implementing, but rather the kinds of conversations they

engaged in. These conversations were what ultimately determined their success in working together” (p. 1). By investing the time up front on critical conversations that address purposes, goals, and expectations for both the partnership and for student learning, co-teachers can build the relationship that is necessary to work together most effectively. This could help co-teachers to clarify the strengths that each brings to the partnership and to collaboratively define critical elements of their practice. In discussing of the importance of conversations to organizational change, Wheatley (2005) says, “It takes courage to start a conversation. But if we don’t start talking to one another, nothing will change. Conversation is the way we discover how to transform our world, together” (p. 27). Through deep conversation about and examination of beliefs about teaching and learning, co-teachers can then become more intentional in their efforts. When planning, co-teachers can address not only what instructional practices they will utilize but how and why. With this, co-teaching has greater potential to be a tool that increases student achievement.

Challenges and Limitations

Several challenges and limitations related to this study are important to discuss. First, the sample size was very small; only four co-teaching teams were invited to participate in this study. Because of the small sample size, results may not be typical of or generalizable to other settings. Related to this is the

location in which the study took place. The study took place in one suburban high school in the Midwest, so what I saw may not be typical of other high schools in the Midwest or the country.

A second limitation was that the time available for data collection. Because IRB approval was not granted until the end of May, the time available to conduct classroom observations was extremely limited; only seven regular school days remained in the school year before semester exams began. I was able to observe two to three lessons in each co-taught class, but then the focus switched from instruction to review for exams. Because I conducted classroom observations so late in the semester, the instruction I observed might not have been representative of what these co-teachers did in the classroom throughout the semester. Additional observations may have allowed me to gain a more thorough understanding of the classroom practices utilized by these co-teachers.

Related to the limitation above, the building closed to all students, faculty, and administration after the last teacher workday in June for major construction. Access to class lists or other records (e.g., disability status of students in co-taught classes) was not available during the summer, so I was unable to obtain some of this data.

A third limitation is that much of the data in this study was based on co-teachers' self-reports of their use of instructional practices or strategies in their co-teaching practice. Without documentation to support their survey responses, the reliability of individual responses cannot be determined.

A fourth limitation is related to way questions were asked in the interview and the survey. The variance in practices reported to be used by co-teachers in this study could have been influenced by the way I worded questions in the interview and the survey. It was pointed out to me by one of the co-teachers in this study that by asking the co-teachers involved how they *modified* their teaching plans or assessment to support students' access to the curriculum, I may have missed valuable data that could further explain why co-teachers report using certain practices and not others. Asking co-teachers how they *modified* their teaching plans and assessment may have suggested that I was looking for ways that the co-teachers *changed* what they were doing. Had I asked the co-teachers what practices they *used* or *included* to support students with disabilities, a co-teacher may have shared that she "did not 'modify' because she felt that her usual plan included strategies to reach all students, and her usual approach did not need to be changed." I agree; by asking the question in a more neutral manner, I may have obtained responses that were

more complete, richer, and more representative of what co-teachers in this building do to support access to the curriculum.

A final limitation is related to the conceptual framework presented in Chapter 2. When I began this study, no theory was used to frame the study. Because several members of my committee urged me to seek out theory that could be used to explain the results of my study, I spent many months after I collected my data reading, questioning, comparing, and analyzing. This work eventually led me to theories of school change. The result of my efforts to integrate school change theories in a way that can be applied to the implementation of co-teaching was presented in Chapter 2. I feel that this 4-level conceptual framework holds promise for use in evaluating and guiding the implementation of an innovation such as co-teaching. It also can guide instructional leaders and coaches as they support educators in implementation. Each level of the framework offers guidance to instructional leaders as they consider an innovation, plan for that change, and then implement that change. Had this framework been in place when I designed the survey, developed the interview questions, and created the classroom observation protocols, each of those instruments would have included connections to the conceptual framework, and I would have collected that data that would have allowed me to better respond to the third research question. Because the instruments were

not connected in any way to the conceptual framework, I do not have the data necessary to fully answer the third research question.

Implications for Future Research

This study has added to the research base on co-teaching by providing information about what co-teachers do in the classroom to support access to the general education curriculum and the factors support or constrain the use of co-teaching as a way to support access to the general education curriculum.

Questions for future research include:

- Why do co-teachers support access to challenging curriculum in particular ways? Why do co-teachers utilize some practices and not others?
- What role does planning play in supporting students' access to the curriculum? How are the practices that co-teachers report they utilize decided upon? How much of what occurs is planned in advance? Do co-teachers make modifications “on-the-fly” as the need arises? Can co-teachers reduce the need to make modifications on the fly through the planning process?
- Given what we know about school change and the differential needs of participants in school change, especially Hall and Hord’s Stages of Concern and Levels of Use, what role could coaching play in the development of effective co-teaching practice?

Bright spots and missed opportunities. Co-teaching holds promise as one way to support the needs of students with disabilities and students at risk for failure in challenging curriculum. Additional research in co-teaching is needed to answer questions such as those listed above and to clarify how co-teachers can best support access to and success in challenging curriculum.

APPENDICES

Appendix A

Semi-Structured Interview Questions

Interview questions with additional prompts to be used as needed.

General questions

How many students are in this class? Additional prompts:

- Special education students?
- General education students?
- At-risk students?

Have you co-taught with anyone else in the past?

- Tell me a little about that experience.

Have you participated in any professional development on co-teaching?

- Tell me about that.

Why is this class co-taught?

- Purpose of co-teaching
- Goals of co-teaching (for students and for teachers)

What are the benefits of this co-taught class?

- For the teachers involved
- For the students involved
- How do students with disabilities benefit from their inclusion in this co-taught course?

Tell me about your co-teaching this year with _____.

- Describe a typical class for you and _____ (co-teacher).
- What is your major role in this class?
- What is the major role of your co-teaching partner?

Planning:

- Tell me what you and _____ have done to plan and prepare for this class over the last two weeks.
- Who does most of the planning for this class?
 - Why?
 - Was that a conscious decision?

- How much time are you able to spend together planning for the course?
- Who makes most instructional decisions for this class?
 - Why?
- How do you and _____ plan for instruction in this class? Why is planning handled in this way?
- How much time (if any) do you spend planning together each week?
- Are there times when you alter the plans for the day “on the fly”?
 - Why?
 - Who makes that decision?
 - Example?

Instruction:

- What academic challenges do your students face in this course (especially as related to literacy)?
 - How do the literacy skills of your students match with the demands of the course?
 - What is most challenging about this class for your group of students?
 - How much reading and writing is required for this class?
 - Is the required reading and writing challenging for students with disabilities?
- What do you do (if anything) to support students whose literacy skills make this course difficult?
- What, if anything, do you do differently in this class than in other sections of this course?
 - Is this hour different than _____ hour (a non-co-taught class)?
 - How?
 - In what ways have you adapted instruction to meet the needs of students with learning challenges (differences between general education and special education teachers)?
- What is the most challenging about this group of students for you as the teacher?

- What else would be helpful to support students whose literacy skills make this course a challenge?
- How are instructional duties divided?
 - Why do you divide things in this way?
- Can you think of a time this week when you used the specialized knowledge or skills acquired through your degree, major, or other training?
- Can you think of a time this week when your teaching partner used specialized knowledge or skills acquired through his/her degree, major, or other training?
- How (if at all) has working with _____ changed the way you teach?
- What teaching practices or strategies have you learned from _____ (co-teaching partner) that have helped you in your teaching (retrospective)?

Administrative support:

- What administrative supports are in place to facilitate co-teaching?
- What administrative supports are needed to better facilitate co-teaching?

Post observation questions (open-ended, emergent, clarification of questions that arise during observation or data analysis)

- Have you taught this lesson in the past?
 - If so, did you make changes to the way you taught the lesson this year?
 - What changes were made? Why?
 - Who made those changes?
- Who planned this lesson?
 - Together?
 - Separately?

- Why?
- What portions of the lesson does the district curriculum guide dictate?
- What did you add and why?

Exit interview (questions specific to accessing the general education curriculum, follow-up to completion of survey)

- Can you give me an example of a time when you

Appendix B

Supporting Access to the General Education Curriculum Survey

Likert-like Scale

- 5 – frequently, 2 or more times per week
- 4 – fairly often, 1 time per week
- 3 – sometimes, once every 2 weeks
- 2 – seldom, once per month
- 1 – rarely, 1 time or less per semester

Listed below are some things that you and your co-teacher may or may not incorporate into your co-taught class either during class time or in preparation for class. Please choose the most appropriate choice for each item.

1. SUPPORT FOR LEARNING COURSE INFORMATION

In the class that we co-teach, my co-teacher and I:

- provide direct assistance to help students activate prior knowledge and make connections to their lives
- provide models for students of the desired product (e.g., examples of good notes, an effective persuasive essay, or a complete answer to an essay question)
- split the class into smaller groups for instruction
- reteach difficult information
- provide frequent opportunities for students to respond during classtime
- provide study guides or other study tools
- conduct extra review sessions before tests
- provide students with class notes if needed
- teach strategies to help the students learn the information
- use graphic organizers that will help students organize the information and make connections with previous units of study
- provide additional explanation of difficult concepts
- provide additional assistance for students as they work

2. LEARNING-TO-LEARNING STRATEGIES INCLUDING ENHANCING COMPREHENSION OF COURSE TEXTS AND DEVELOPING WRITING IN YOUR COURSE

In the class that we co-teach, my co-teacher and I:

- integrate text comprehension strategies into instruction (e.g., connecting to background knowledge, generating questions, monitoring comprehension, summarizing text, understanding various text structures, use of graphic and semantic organizers).
- teach students critical analysis and reasoning skills.
- use direct, explicit instruction to teach comprehension strategies.
- model (think aloud) for students to show them how to use comprehension strategies.
- talk with students about how to use strategies in combination.
- teach students to use strategies flexibly
- teach students ways that they can monitor their comprehension
- use direct instruction to teach writing (writing strategies).
- make writing a regular part of the instructional activities in our class.
- have students write to learn.
- give students many opportunities to engage in authentic writing tasks
- model aspects of the writing process for students (planning, writing, editing, revising).
- talk with my students about the ways in which writing will be useful to them in and out of school.
- use rubrics to assess writing.
- teach students to assess their writing using a rubric.
- teach students a number of ways to plan their writing including but not limited to brainstorming or making lists, developing outlines, and using graphic organizers.
- teach students a process for editing their writing.
- teach students a process for revising their writing.
- teach students to use text-to-speech software to assist them as they revise and edit.
- provide additional opportunities for students to practice new strategies, techniques, or skills before they are required to demonstrate independent use.
- model (think aloud) as you teach students how to perform a new strategy.
- teach students different ways to organize information to facilitate understanding or remembering (e.g., Venn diagrams, notetaking, graphic

organizers).

- prompt students to use previously learned strategies in new situations.
- teach strategies for test-taking

3. SUPPORTING VOCABULARY DEVELOPMENT

In the class that we co-teach, my co-teacher and I:

- teach morpheme patterns (word parts) that are related to the content vocabulary that students will need to learn for the class (e.g., hetero- and homo- in biology).
- pre-teach difficult vocabulary.
- use direct instruction to teach difficult vocabulary.
- provide opportunities for multiple exposures to new words during instruction.
- help students connect new vocabulary with their background knowledge.
- utilize word maps, concept maps, or similar visual devices.
- use computer technology to teach new words (online dictionaries, hyperlinks in online textbooks, websites related to the content-area).

4. SUPPORTING READING SKILLS FOR STRUGGLING READERS / ASSISTIVE TECHNOLOGY

In the class that we co-teach, my co-teacher and I:

- provide books on tape, CD, or DVD so that students can listen to required content for this course.
- read assignments together in class or read assignments to students.
- allow students to read assigned readings with partners.
- utilize options other than the textbook to cover the content (videos, class discussion, etc.)
- use technology to enhance access to the general education curriculum for students in my co-taught classes (e.g., PowerPoint presentations, blogs, wikis)
- identify websites that supplement the course content for students.
- teach students how to use text-to-speech software to help students with reading challenges.
- post PowerPoints of my content presentations or course notes on the

course website so that students can access this information from home (if applicable)

5. ASSISTIVE TECHNOLOGY

In the class that we co-teach, my co-teacher and I:

- use technology to enhance access to the general education curriculum for students (e.g., PowerPoint presentations, blogs, wikis)
- identify websites for students that supplement the course material
- teach students how to use text-to-speech software to help students with reading challenges
- make available audio versions of required textbooks or novels
- post PowerPoint presentations on the course website
- post class notes on the course website

6. UNIVERSAL DESIGN FOR LEARNING (UDL)

In the class that we co-teach, my co-teacher and I:

- talk together about upcoming lessons to determine what components might be problematic for some students
- modify our plans for upcoming lessons to increase accessibility for students
- utilize multiple formats for to present lesson information (e.g., combining lecture, small group discussion and use of a graphic organizer in a lesson)
- mention the same information in a number of different ways (e.g., say it, show it, model it, use of different forms of media)
- utilize digital texts (if available)
- provide opportunities for students to represent their learning in multiple formats using presentation and graphics software (e.g., PowerPoint presentations, iMovie)
- provide opportunities for students to demonstrate their learning through oral presentations (e.g., small groups, whole class presentations, group presentations, a demonstration)
- provide opportunities for students to demonstrate their learning through other forms of writing (e.g., a children's story, a poster, a

model)

- offer flexible means of engagement (e.g., students who are not working toward a MMC diploma may study a smaller number of concepts or complete just a portion of an assignment)

7. MOTIVATION FOR LEARNING

In the class that we co-teach, my co-teacher and I:

- guide students to focus on their own improvement.
- provide variety and choice in reading materials.
- provide opportunities for students to interact through reading/writing (e.g., Book Clubs, small group discussions, blogs/wikis)

8. CLASSROOM / BEHAVIOR MANAGEMENT

In the class that we co-teach, my co-teacher and I:

- use principles of positive behavioral support (e.g., frequent feedback, targeted feedback that specifies behavior being reinforced, frequent engagement in positive reinforcement) to support student learning.
- develop behavior plans if necessary

9. ASSESSMENT

In the class that we co-teach, my co-teacher and I:

- use formative assessments (assessments for learning) to understand and monitor students' understanding.
- use summative assessments (assessment of learning).
- use a variety of types of questions on assessments.
- use observation to assess students' progress.
- create opportunities for students to represent their learning in multiple formats (e.g., PowerPoint presentations, posters, iMovie, children's story).
- administer common assessments utilized by other teachers of this course.
- analyze student work to better understand student progress.

- utilize results of diagnostic assessments, common assessments, or other available assessments to understand students' strengths and weaknesses and plan future instruction.
- read tests to students who struggle with reading.
- rephrase test questions if necessary.
- modify tests for those students who are following a modified curriculum (not working toward a MMC diploma).

Appendix C

Classroom Observation Form

Time	What is GE teacher doing/ saying?	What is SE teacher doing/ saying?	What are students doing/ saying?	Curriculum Supports – Facilitating Access to GE Curriculum	Literacy demands on the students (reading, writing)
Background information, context, current unit, demographics of class, etc.					

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