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**A QUANTITATIVE PERSPECTIVE ON THE IMPACT OF THE  
GENERAL EDUCATION STUDENTS' ACADEMIC ACHIEVEMENT  
AND MEMBERSHIP IN AN INCLUSION CLASS AT THE HIGH  
SCHOOL LEVEL USING NEW YORK STATE REGENTS EXAM  
SCORES**

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A QUANTITATIVE PERSPECTIVE ON THE IMPACT OF THE GENERAL  
EDUCATION STUDENTS' ACADEMIC ACHIEVEMENT AND MEMBERSHIP  
IN AN INCLUSION CLASS AT THE HIGH SCHOOL LEVEL USING NEW YORK  
STATE REGENTS EXAM SCORES.

A dissertation submitted in partial fulfillment  
of the requirements for the degree of

DOCTOR OF EDUCATION

to the faculty of the

DEPARTMENT OF ADMINISTRATIVE AND INSTRUCTIONAL LEADERSHIP

of

THE SCHOOL OF EDUCATION

at

ST. JOHN'S UNIVERSITY

New York

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Date Submitted \_\_\_\_\_

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## ABSTRACT

### A QUANTITATIVE PERSPECTIVE ON THE IMPACT OF THE GENERAL EDUCATION STUDENTS' ACADEMIC ACHIEVEMENT AND MEMBERSHIP IN AN INCLUSION CLASS AT THE HIGH SCHOOL LEVEL USING NEW YORK STATE REGENTS EXAM SCORES.

Michelle Kwon-Pineda

With the increased diversity in our world, the needs of our students are also just as diverse. “Currently, more than half of the K-12 students with special needs are being placed in general education classrooms, demonstrating that the inclusion movement is alive and well in our nation’s public schools” (U.S. Dept. of Ed. 2010). There is a lack of focus on the general education students who also participate in these inclusive settings.

The purpose of this study is to investigate to what extent a high school general education student’s participation in an inclusion class impacts their educational needs using the New York State Regents exam scores. The participants who will be studied will be high school students from a suburban high school and his/her New York State Regents exam scores in English, Algebra 1, Living Environment, Global History and United States History.

A quantitative descriptive comparative research design will be used that, “describes differences between groups, but does not try to explain why the differences occur” (Lodico et al., 2006, p.212). A comparative research study will be used because the exams were already taken by the students and scores released. This ex post facto study is not a random selection study. Cohen et al., (2013) states that ex post facto research, “...refers to those studies which investigate possible cause- and- effect

relationships by observing an existing condition or state of affairs and searching back in time for plausible causal factors” (p. 303).

Inclusive settings are becoming more popular and the ideas of open enrollment are creating more classroom environments where diversity and differentiation have become more challenging. There is not enough research, especially on the secondary level, showing evidence that inclusion is an effective model for the general education student in these diverse classrooms where the laws and supports are mandated not for the general education student, but more for the special education population in the classroom.

## **DEDICATION**

I dedicate this work to my family for your unwavering confidence in me. To my husband Marni, thank you for being Mr. Mom. You represented both of us at all of the birthday parties, playdates, and soccer games with your whole heart. Your encouragement and love for me and my passion motivated me to see that all of your work would not be in vain.

To my two beautiful daughters Azn and Aria for understanding when I could not spend time as a family so I could continue to write. Your patience and understanding motivated me to get to the finish line. Daddy and I wanted you to see that as strong, minority women, we can accomplish anything!

## ACKNOWLEDGMENTS

“Great discoveries and improvements invariably involve the cooperation of many minds.” Even though I am the proud author of this dissertation, this quote by Alexander Graham Bell reminds me of the fact that I did not accomplish this alone. The support I received throughout this journey allowed me to navigate through the challenges successfully.

I would like to acknowledge Dr. James Campbell for being a mentor who believed in my passion and commitment throughout the entire process. Thank you for being as excited about my research as I was. Thank you also to Dr. Robert Bernato and Dr. Anthony Annunziato for teaching me and motivating me to complete my research.

Thank you to my amazing cohort, co-workers, and friends for being such vocal and excited to see that I completed the journey with all of you. When I created gaping holes of doubt, all of you continued to fill my doubt with encouragement.

Alexander Graham Bell is recognized for inventing the telephone which naturally brought people together. I hope to continue to collaborate to bring educators, parents, and children together to take greater ownership in his/her education.

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## CHAPTER 1

### Introduction

“Inclusion of students with disabilities in general education contexts has emerged as a major issue throughout the world” (Hagiwara et al., 2019, p.3). As our classrooms increasingly represent the significant diversity of our world, understanding how inclusive settings impact not only the special education students, or the students who have laws to support the equity of his/her education, but how the general education population who may share in that inclusive setting is impacted is a facet of inclusion we cannot ignore.

#### **Purpose of the Study**

The purpose of this study is to investigate the extent to which a high school general education student’s participation in an inclusion class impacts their educational needs using the New York State Regents exam scores in English, Math, Science, and Social Studies which encompasses Grades 9-11. There is an abundance of research on the qualitative aspects of inclusion: teacher, student, parent, administrator perceptions focused more on the elementary school level. There is a need to look more closely at inclusion at the high school level because of the challenges of more individualized education. “Inclusion appears to be not something that simply happens, but rather something that requires careful thought and preparation. The focus must not simply be on access to general education, but rather the assurance that when inclusion is deemed appropriate, it is implemented with proper attitudes, accommodations, and adaptations in place” (Fuchs & Deno, 1994; King-Sears, 1997; Scott, Vitale, Masten, 1998).

Much of the quantitative data on the impact of inclusion is based on the elementary and middle school level using state exams or grade assessments. There is a

lack of data on New York State high school students using New York State Regents exam scores. Passing grades on New York State Regents exams are required for graduation, yet they have not been used to analyze the impact of inclusion. Since students cannot opt-out of the Regents exams, the data set would have a large and effective sample to analyze. Inclusion is a term we hear often, but the No Child Left Behind Act of 2001 or The Individuals with Disabilities Education Act of 2004 do not specifically state what inclusion is defined as or that it is the strategy to use for working with general education and special education students in a classroom. IDEA states that students with disabilities should be, “educated in the least restrictive environment.” One of the purposes for Public Law 94-142 is the idea of “expanding the opportunities for educating children with disabilities in the least restrictive environment” (U.S. Dept. of Education).

It seems as though a step towards giving special education students appropriate supports to mainstream with the general education population includes making sure all of our general education students are being served in an inclusive setting as well. It is necessary to investigate the impact of this setting on the general education students because the laws support special education students in an inclusive setting, not the general education students.

### **Theoretical Framework**

Vygotsky’s theory of social cognitive development and the zone of proximal development are significant beliefs in inclusive education. Doolittle (1997) states that Vygotsky believes all students learn what and how to think through culture and through problem solving experiences shared with others and that language is the tool for students

to access knowledge. The zone of proximal development is the belief that what a child can do on his/her own is different from what a child can do with the help of a support system. Using this theory, curriculum should be based on collaboration and interaction amongst the students and teachers. The instruction should have strategies, such as scaffolding, to help students go through their zone of proximal development (see Figure 1.1), and students should be assessed by their actual and potential development.

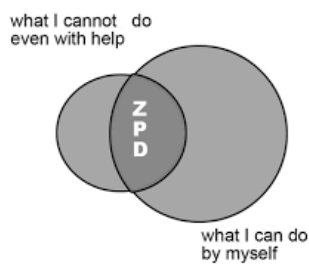


Figure 1.1. The zone of proximal development after teaching has occurred.

There are three levels of Vygotsky's theory.

- (1) The Zone of Actual Development – where the student currently is in terms of his/her development
- (2) The Zone of Potential Development – where the student could/should be in terms of his/her development
- (3) The Zone of Proximal Development – where the student could/should move from the Zone of Actual Development to the Zone of Potential Development with assistance (Estep, 2002, p.155).

According to Vygotsky, learning is more than just attaining and retaining information, but, “learning is a social process” (Knapp, 2019, p. 522). The zone of proximal development, “focuses on learning as development via interaction” (Murphy et al., 2015, p. 286) and acknowledges the importance of learning through the shared thoughts of

others in the classroom or community. “Vygotsky came to believe that for a person to learn concepts, they must experience them and socially negotiate their meaning in authentic, complex learning environments” (Allen, 2005, p. 324).

Based on this sociocultural perspective of education, the environment students are learning in is significant. The situative/sociocultural perspective, “places a stronger emphasis on the social interaction of the learning environment and promotes the idea that the social setting itself is crucial to the learning process” (Allen, 2005, p. 324). This is especially true in an inclusive setting, because the special education students are purposefully put into the class, while the general education students are filtered in afterwards. General education students should also be chosen to be in inclusive classrooms in a purposeful manner to assure that the interactions amongst the students and the teachers will support the growth of all students and not only the special education students who are protected by the law.

The social aspect of learning in Vygotsky’s zone of proximal development supports the idea of students helping students to engage, to learn, and to move into his/her Zone of Potential Development. “Vygotsky recommended a social context where a more competent child would be paired with a less competent one, so that the former can elevate the latter’s competence” (Jaramillo, 1996, p. 139). If this is the case, the higher functioning general education students would find challenges in his/her growth. “...inclusive practices may contribute to different rates of achievement gains for general education students. Students who had lower academic skills before the restructuring appeared to benefit academically when inclusive practices were implemented school-wide, while students with higher skills lost ground” (Huber et al., 2001, p. 503).



Not only is there a possibility that higher functioning students may not find adequate learning supports, but there is also the possibility for the special education students as well. “Full-time placements in the general education setting will prevent some disabled students from concentrated and individualized instruction (Andrews et al., 2000, p. 31).

### **Conceptual Framework**

The conceptual framework (see Figure 1.2) represents the elements needed to create a more effective learning environment for all students in an inclusive setting. The goal for the inclusion classroom should be to allow every child, general education and special education, to succeed and even surpass what the teachers and students may feel are limitations. Mehta (2013) states that, “A conceptual framework is used in research to outline possible courses of action or to present a preferred approach to an idea of thought” (p. 290).

For all students in an inclusion class to have the opportunity to show growth in his/her learning, the co-teaching partnership will need time to plan and collaborate together to not only discuss and plan the goals of the special education students, but also to discuss and plan the goals for the general education students. The support from the school leadership/administration is a significant aspect of giving teachers the opportunity to plan together and share resources.

The double-sided arrows represent the idea that the process is a team effort. General education student support, special education student support, collaborative co-teacher planning, and the administrative support must all help each other and work together to support every child in an inclusive classroom. When all four components

work well together by effectively communicating and reflecting throughout the process, then growth in learning for all students can occur. Each component has a significant influence on every child in an inclusive classroom.

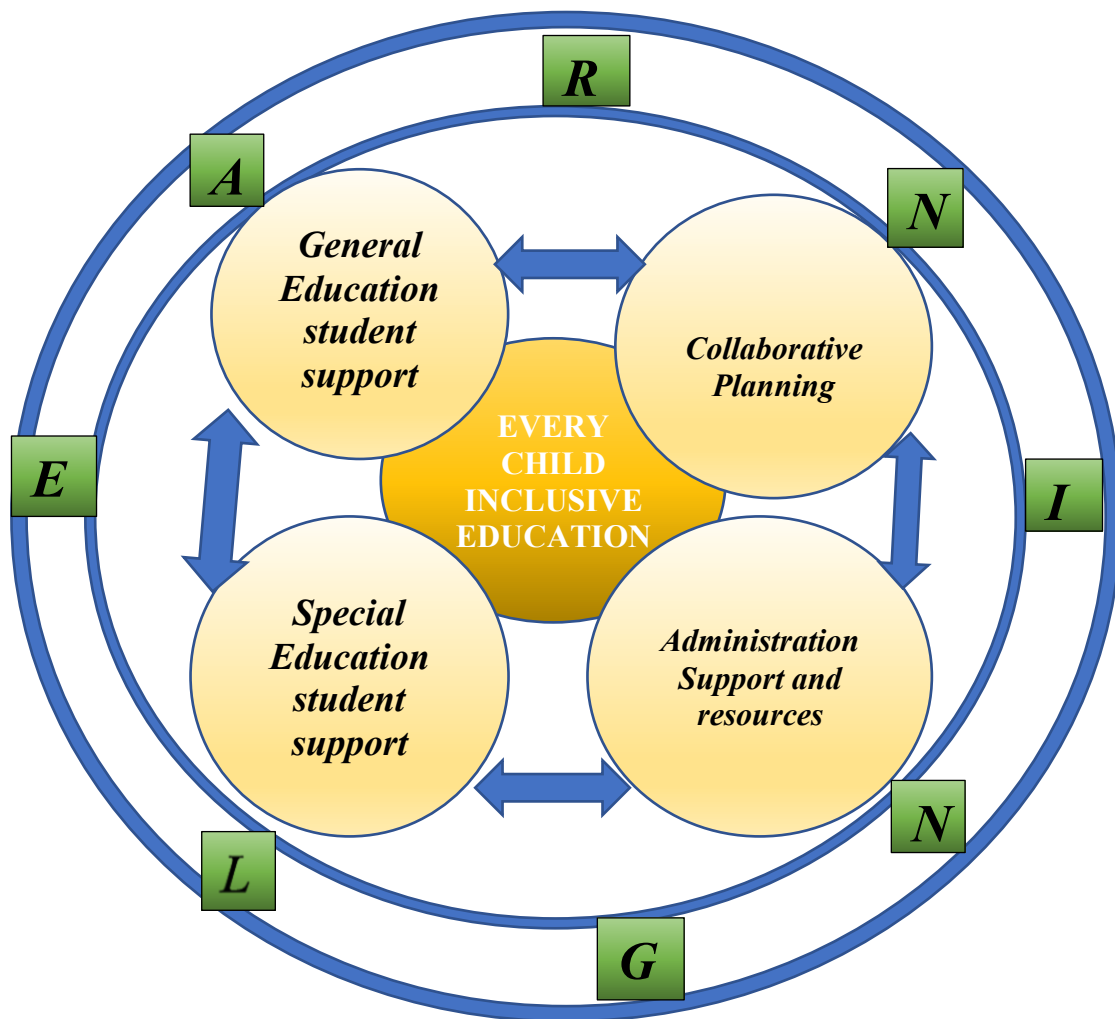


Figure 1.2. Flow chart for effective learning in an inclusion setting.

### Significance of the Study

As our student population becomes increasingly diverse, and educational laws such as Public Law 94-142, IDEIA, and FAPE, continue to support special education students to be integrated in the general education classrooms. The laws support the

special education students in the inclusive setting, but do not clearly define how the needs of the general education students in the inclusive setting are being met.

“Inclusion is an instructional mode through which special education teachers and general education teachers work collaboratively to meet the needs of all of the students in the general education classroom” (Sharpe, York, & Knight, 1994). As the number of inclusion classes increase and the number of co-taught classrooms increase, districts and parents need to clearly understand not only how inclusion impacts the special education student, but also how it impacts the general education students.

There is little qualitative research about the impact of inclusion on the general education students at the high school level and even less quantitative research on how inclusion impacts the general education students participating in the inclusive settings. This study would be able to fill a gap in the research literature using New York State Regents Exams scores to analyze and discuss a different perspective on the inclusion debate.

### **Research Questions**

1. What is the influence on New York State Regents Exam scores of general education students' in co-taught inclusive classrooms, compared to general education students in a purely general education classroom?
2. What is the effect of inclusion classes on the academic achievement of general education students?

## **Definition of Terms**

*New York State Regents Exams* – Required exams that students in New York State take in English, Math, Social Studies, and Science. Students must pass these exams to be allowed to graduate high school and receive his/her diploma.

*Inclusive Setting*- Special Education students in a class with General Education students and a special education and general education teacher in the classroom at all times.

*Co-teaching*- Two teachers, generally a special education teacher and a regular education teachers working together to provide instruction to all students in the classroom (Dieker & Murawski, 2003).

*Mainstreaming* – A special education student who spends a part or majority of his/her day with a general education class environment.

*General Education student*– A student who does not have an Individual Education Plan (IEP) for a 504 plan and can be placed in a general education class or an inclusion class. The general education student does not have any disabilities or special needs.

*Special Education student* – A student who has an Individual Education Plan (IEP) and is support by special education laws to experience an inclusive classroom setting.

*Least Restrictive Environment* – An environment a special education student would experience in a class with students who do not have disabilities for the maximum effective amount of time. This is a requirement of the Individuals with

Disabilities Act (Nichols et al., 2010)

## CHAPTER 2

### Review of Related Research

#### History of Special Education Inclusion Practices

To understand how inclusive education is impacting the general education population and to understand how inclusive education can effectively support all students, understanding the foundations of inclusion is necessary.

The origins of special education students being included in a class with general or regular education students traces back to 1973 (Kavale & Forness, 2000, p.279) with Section 504 of the Rehabilitation Act of 1973. This act was designed to protect the rights of individuals with disabilities, to protect them from any type of discrimination, and to give them access to equal opportunities. It was “designed to protect the civil rights of individuals with disabilities” (Section 504 of Rehabilitation Act of 1973).

Section 504 of the Rehabilitation Act of 1973 would have been difficult to achieve without the historical 1954 Brown vs. the Board of Education court case which brought about equal protection under the law for minority populations. The primary purpose of the case was “to guarantee equal educational opportunity for all American children” (Smith & Kozleski, 2005, p.273). Chief Justice Earl Warren stated, “We conclude that in the field of public education, the doctrine of separate but equal has no place. Separate educational facilities are inherently unequal.” (Smith & Kozleski, 2005, p.273). Chief Warren’s statement clearly showed that public education violated the 14<sup>th</sup> Amendment which protects the equal rights of all citizens.

Soon after, the Civil Rights Act of 1964 recognized that racial segregation in schools was illegal (CRA, P.L. 88-362) and the Elementary and Secondary Act of 1965, under President Lyndon B. Johnson, sent a message across the United States that education for all children was a priority. This act accomplished, “establishing general federal aid for the cause of education” (Smith & Kozleski, 2005, p.273).

Another significant year in the fight for education for all students occurred in 1971. The Pennsylvania Association for Retarded Children (PARC) v. The Commonwealth of Pennsylvania case piggybacked on the Brown vs. Board of Education case by stating that Pennsylvania’s laws supported the exclusion of children with disabilities from being included in schools with other children and that it violated their rights. The creation of the Education for All Handicapped Children Act of 1975 (IDEA; Hehir & Gamm, 1997) was a direct result of the PARC’s success in this court case.

In 1975, the Education for All Handicapped Children Act (EHA) was founded, then renamed as the Individuals with Disabilities Education Act in 1990 (IDEA) and once again changed in 2004 to the Individuals with Disabilities Education Improvement Act (IDEIA). The act “mandated that students with disabilities be provided an appropriate education designed to meet their unique needs in the least restrictive environment” (Kavale & Forness, 2000, p. 281). The EHA stated that, “ To the maximum extent appropriate, children with disabilities...[should be] educated with children who are not disabled, and that special classes, separate schooling, or other removal of children with disabilities from the regular educational environment occurs only when the nature or security of the disability is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily” (EHA 175, sec 1412).

Supporters fought for this act because during the mid 1970s, “one million children with disabilities remained at home or were institutionalized rather than included in the public school system” (National Association for State Boards of Education, 1992).

Throughout the history of special education and inclusive reform, there were significant court cases following *Brown v. Board of Education*. In 1989, *Daniel R.R vs. State Board of Education*, parents of Daniel, a six-year-old boy with Down Syndrome, wanted their son to be mainstreamed in a pre-kindergarten setting. The law sided with the Board of Education because, “it is more important to ensure that the child receives a free, appropriate education than to ensure an inclusive placement” (*Daniel R.R. v. State Board of Education*, 1989). *Hartmann v. Loudoun County Board of Education* 1997 was another case where the law sided with the school and not the parent. An 11-year-old child with autism who was fully included was separated out of the inclusive setting because of disruptive behavior. Her parents did not want her to be removed, but the courts sided with the school.

There have also been many court cases that have been in favor of the parents. In *Greer v. Rome City School*, parents of a 10-year-old girl with Down Syndrome felt that their daughter was not given the opportunity to be in the least restrictive environment. The courts found in favor of the parents. Similarly, in *Oberti v. Board of Education of the Borough of Clementon School District*, an 8-year-old boy with Down Syndrome was taken out of a regular classroom and placed in a special education class. The courts ruled in favor of the parents. Lastly, the court case of *Sacramento City Unified School District v. Holland*, parents fought to have their 11-year-old mentally disabled child in a full-time

regular education class placement instead of a split placement. Once again, the courts were in favor of the parents.

Even with some wins and losses there does not seem to be a clear winner in terms of whether to include special education students in the regular education classroom or not. “As a result of different standards that are used by federal circuit courts, the extent to which courts show a preference toward including children with disabilities with their nondisabled peers varies greatly” (Palley, 2006, p. 229). Pally (2006) also states that since the cases were not class actions, “the decisions will not necessarily lead to structural changes in the overall system...” (p. 230).

During the 1980s, the Regular Education Initiative (REI) was created to combine the regular education and special education programs into a unified system that would make the effort to support all students (Teacher Education Division, 1986). This movement, “possessed the larger goal of reducing special education...” (Gartner & Lipsky, 1989, p. 271). According to Kavale & Forness (2000) REI is based on five foundational assumptions:

- (1) Students are more alike than different.
- (2) Good teachers can teach all students.
- (3) Even without special education categories all students can learn
- (4) General education classrooms can manage all students
- (5) Physically separating students is discriminatory and inequitable (p. 281).

Supporters of REI believe that, “the current separation of regular education and special education is an infringement of basic civil rights” (D’Alonzo & Boggs, 2010, p.



18) while opponents believe that, “Separateness may be required for equality of opportunity when separation is based on criteria directly related to teaching and learning” (Kauffman, 1989, p. 256).

In 1983, President Ronald Reagan published *A Nation at Risk: The Imperative for Educational Reform*, and stated, “the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and a people” (U.S. Department of Education, 1983).

Public Law 94-142 stated that special education students should be placed in the least restrictive environment (Spence, 2010, p. 41). No Child Left Behind in 2001 stated that all children were considered general education students (Sailor & Roger, 2005, p. 504) and the Individuals with Disabilities Education Improvement Act (IDEIA) in 2004 stated that public schools needed to provide students with disabilities with a free and appropriate education (FAPE) in a least restrictive environment (LRE) “to the maximum extent possible” (ODEA, P.L. 108-446).

IDEIA continued to make a strong statement about keeping special education students with general education students. It stated that, “the education of children with disabilities can be made more effective by having high expectations for children and ensuring their access to the general education curriculum in the regular classroom, to the maximum extent possible” (IDEIA, sec 601).

The history of special education has been supported by passionate parents advocating for their children with disabilities, by law makers, by the court system, and even by presidents. As our special education population’s education is impacted in what many believe in a positive manner by integrating more closely with the regular education

student population, the majority of the history does not take into account the impact these supports have had on the regular/general education population. “School leaders have access to an abundance of research on the influence of inclusion classes on classified students when making decisions. However, they have minimal access to literature addressing its influence on students without disabilities” (Daniel & King, 1997; Gattuso, 2008; St. John & Babo, 2015; Brown & Babo, 2017).

### **Support for Inclusion**

The debate about inclusion does not seem like it is going away. The challenges of increased diversity of the student population on the secondary level are different from the elementary level because schedules for secondary level students are more individualized and students spend shorter amounts of time with the content specialized teacher.

Within this inclusion debate there are many who do support inclusion. “Inclusion is a movement seeking to create schools that meet the needs of all students by establishing learning communities for students with and without disabilities, educated together in age appropriate general education classrooms in neighborhood schools” (Ferguson, 2008, p. 11).

Support for inclusion seems to have several layers. A majority of educators, parents, and students do support the idea of inclusion. “Early on, general education teachers expressed some negative attitudes, especially feelings of inadequacy in dealing with students with disabilities, although they remained generally positive about the concept of integration” (Ringlaben & Price, 1981; Stephens & Braun, 1980). Whether or not educators felt the inclusive setting was the best setting for all of the students involved was dependent on the amount of support.

There is generally a positive feeling toward inclusion, but there are concerns about how effectively students can handle challenges in a general education classroom. These challenges represent another layer that needs to be recognized for there to be long term support for inclusion. “The general public has also been found to possess positive attitudes about integration, but less positive if the students in question were likely to encounter difficulty in the general education classroom” (Berryman, 1989; Gottlieb & Corman, 1975). A majority of parents also support the idea inclusion, but they have concerns and reservations on how inclusion can most benefit his/her child/children with disabilities, and parents with general education students in the class (Lovitt & Cushing, 1999, p. 140).

Many times, deciding whether inclusion would work better than a more self-contained environment would depend on the general education teacher who was most likely more of an expert on the content of the class, while the special education teacher was more of the expert of individualized skills support. “...a major factor in the success or failure of a policy such as mainstreaming is the attitudes of the general education teachers” (Sarason, 1982).

Those who support inclusion also state that there are significant positive social aspects to inclusion. In 1996 1137 middle and high school students without disabilities were surveyed and that results showed that, “students without disabilities were willing to form friendships with their peers with severe disabilities and believed that inclusion facilitated the development of such friendships” (Salend & Duhaney, 1999). Similarly, in 1989, 166 high school students without disabilities were surveyed and they stated, “...they perceived their friendships with students with disabilities as beneficial in terms

of increased personal growth, acceptance of others, and human diversity” (Salend & Duhaney, 1999, p.113).

Advocates for inclusion believe that inclusion does not have a negative effect on students without disabilities “with respect to the amount of allocated and engaged instructional time, the rate of interruption to planned activities and the students’ achievement test scores and report card grades” (Salend & Duhaney, 1999, p.113).

Peltier (1997) stated throughout his literature review on the impact of inclusion on non-disabled children he believes that, “inclusive education does not negatively affect typical students’ academic growth” (p.234). Salend and Duhaney (1999) stated that the placement of students without disabilities in inclusion programs, “do not appear to interfere with their academic performance” (p. 114).

The belief is that inclusion is not just about focusing on students with disabilities in a general education setting, but that inclusion is about having a different philosophy about how all students are educated.

### **Concerns about Inclusion**

“Although questions about the integration of students with disabilities should no longer be controversial, passionate discussion about inclusion continues to escalate not only because its philosophy focuses on students with disabilities of any type and severity level, but also because it seeks to alter the education of all students and hence general education” (Kavale & Forness, 2000, p.279).

The concerns about inclusion on the secondary level are valid concerns because of the structure of secondary education itself. “Reviewed research from the past fifty years shows fewer positive attitudes continue to exist at the secondary teaching level” (Scruggs

& Mastropieri 2013, p.64). At the high school level, students meet with possibly eight or nine different teachers in a class for about 40 minutes a day, compared to an elementary school class, where a majority of one class would stay with their teacher for most of the school day. The schedules for high school students are also much more individualized and students have more choice in what his/her schedule would look like. This is a challenge for inclusion because of variety of classes, needs, and specific requirements for credits, for graduation, and for education and careers after high school.

One of the greatest concerns in terms of inclusive education on the secondary level is the possible change in the general education curriculum. On the high school level, courses are more content specific. “Historically, the concept of including students with disabilities at the secondary level was often challenged due to the strong ‘academic’ nature of the high school curriculum” (Thousand et al., 1997, p.274). There is an expectation for basic skills in “reading, writing, computation, and science. This rigid focus is only one of several potential barriers that may actually impede inclusive education on the secondary level” (Michael & Trezek, 2006, p.311). Depending on the high school, the structure of the students’ schedule can also make inclusion on the secondary level challenging. This is because “...the frequency and duration of contact between students and educators is different...” (Weiss & Lloyd, 2002, p.61).

Even though some researchers believe that attention does not decrease for the general education students in the inclusive setting and that “...inclusion can improve the academic performance of both students with ID and their peers without disabilities” (Cushing & Kennedy, 1997; Shulka & Kennedy, Cushing 1998) there is still a concern about the amount of attention a general education student could lose in an inclusive

setting because of the focus on the supports backed up by law, that the special education student needs to receive. Bateman (1994) states, “Students without disabilities suffer because too much time and attention is focused on the needs of the few included students” (p. 510). Smith (2019) also believed that, “...the presence of students with severe disabilities in general education inhibits the academic progress of their peers without disabilities” (p. 300).

Not only is the structure of the secondary level courses and the level of academic content a concern, but there are also concerns from parents of general education students. Parents of general education students are concerned about whether his/her general education child(ren) will receive less attention than the special education students who share the class. “A further concern is that if general education teachers give students with special needs the attention they require, the teachers may not be able to meet the social and academic needs of other students” (Vaugh et al., 1998). They are concerned about a possible decrease in “academic progress,” and whether or not his/her general education child(ren) will learn behaviors from special education students that are inappropriate” (Peck, 1995, 36).

Another challenge that general education students may face in an inclusive setting is the possible lack of continuous rigor of the curriculum. Making sure there is rigor in a high school level course is significant for college and career readiness. Evidence shows that, “inclusion is not merging well with the general education curriculum” and there is a concern that, “The inclusion classes require so much repetition that only the basic concepts could be taught” (Kozik et al., 2009; Watkins et al., 2008).

Rigor and depth of skills and content on the high school level are key components to college and career readiness. When rigor is only considered in the perspective of the special education student, the general education student in that same setting may have less access to rigor and depth. “The limited complexity of what the students were exposed to in the inclusion classroom could also be reducing the students’ abilities to develop higher-order thinking skills. It promotes a form of learned helplessness due to the students not having to challenge themselves by developing problem solving and critical-thinking skills” (Kozik et al., 2009).

### **Qualitative Research for General Education**

“The focus of most of the research to date has been on the students with a disability and how an inclusive service delivery approach supports or advanced the educational progress of that child” (Korenich & Salisbury, 2006). There is an obvious gap in the research on the impact of the inclusive setting on the general education population. According to Spence (2010), there is a lack of research on the “academic performance of regular education students in an inclusive setting.” Most of the research is based on the performance of special education students and how effective the implementation of inclusion is in a school or a district.

Most of the qualitative research comes with mixed results, with a lack of research for the secondary level. Kavale and Forness (2000) saw “conflicting conclusions” when they researched the arguments on inclusion. In this study, they focused on the general education teacher and the general education students and could not come to a clear result on the effectiveness of inclusion for the general education teacher and student.

There were some positive qualitative research results from a suburban high school in southwestern US and in two southern California school districts. Burnstein et al., (2001) and Keffem and Moore (2004) both made conclusions that inclusion benefitted general education students because of the individualized help and modifications used for the students in the classroom in a co-taught environment. General education teachers stated that all outcomes were positive for both general education and special education students in their class. The studies also showed that the general education students appreciated the opportunity to become leaders and started to appreciate the differences in people in a more positive manner.

There is still a lack of research to make a conclusion either way. Zigmond (2001) stated that, "...the research based for co-teaching is virtually nonexistent" (p. 71). The inclusion debate has been in the forefront since 1997 as IDEA changed its focus from, "access to special education, but rather on access to general education" (Zigmond, 2001, p.71). It is now the year 2020, and so inclusion has been a hot topic for almost fifty years and the lack of research that really analyzes the impact of inclusion on education is weak and inconclusive. More definitive research is necessary as these mandates continue to impact all students.

### **Quantitative Research for General Education**

It is evident that there is a lack of consistent qualitative data, but there is even more of a need for quantitative data. Even with the inclusion debate focused more on the special education students, there is still a lack of quantitative data on the impact of inclusion on the special education population. Unfortunately, there is even less



qualitative and quantitative data on the general education population on the secondary education levels.

Research on the quantitative perspective is also very mixed at this point.

Korenich and Fox (2006) partnered with the U.S. Department of Education and the University of Illinois-Chicago and analyzed data from three school districts in Illinois, Missouri, and Pennsylvania. All students were in grades 3-5 who were general education students in an inclusive setting. This study showed that there were “no negative effects on instruction due to the presence of students with disabilities.”

Castro (2007) analyzed the Terra Nova tests for two years for all students in a northern public-school district in New Jersey. Castro analyzed the scores of first and second graders and compared students in inclusion sections and students who were not in inclusion sections. In this study the general education students in the inclusion sections did “significantly better” than the general education students who were in an inclusion section. This seems to be a successful result on the elementary level. The study completed by Neugebauer (2008) showed the opposite result in the high school setting. Students’ scores from inclusive and non-inclusive settings were analyzed using The Texas Assessment of Knowledge and Skills in Science and Social Studies. In this study the results showed that general education students in a purely general education classroom scored higher than the general education students in the inclusive setting.

The lack of quantitative data has made it challenging to determine the validity of these studies. It seems as though when one quantitative study supports inclusion, there is another study that refutes those findings. “Limited conclusive empirical evidence exists to either confirm or refute whether non-disabled students’ academic achievement is

affected by the addition of a special education co-teacher in the inclusive classroom” (Trabucco, 2001, p.11).

Seeing that the studies on the elementary level and the secondary level showed opposite results where the elementary general education students were more successful in an inclusive setting and the secondary general education students were less successful in an inclusive setting, may be a significant finding. More quantitative studies need to be completed to see if this is actually the case. The lack of quantitative data is the issue.

### **Studies**

Whenever inclusion is discussed, the focus usually is with the needs and concerns of the special education students, their success or failure rates, and their perception of the teachers, parents, and educational leadership. There is a lack of qualitative and quantitative data that focuses on the impact of the inclusive setting on the general education population. Even though the focus has been more on the special education population, there is still a lack of consistent research for that population as well. With the number of students participating in inclusion ever increasing with the popularity of the co-teaching model and the ideas of collaboration, creating, and analyzing these studies are even more significant.

There are a few qualitative studies and fewer quantitative studies that may shed some light on the impact of the inclusive setting on the general education population. The qualitative studies surrounding the impact of the inclusive setting on the general education student have resulted in inconsistent results. In Tables 2.1 and 2.2, the results of the studies show that even though the perception and idea of inclusion is positive and

supported by teachers, students, and administrators, the expectation of reaching success for all students in an inclusive setting is low.

The majority of teachers believe that inclusion is a significant and important concept and classroom structure, but many do not feel prepared to deal with the challenges of reaching so many students who have a variety of skill levels. Social skills seem to be discussed more when discussing the positive effects of the inclusive setting. The relationships between the general education students and the special education students were positive and the general education students learned more about empathy and support.

Table 2.1. Qualitative studies that show the inclusive setting does not benefit the general education student population.

Study	Results
Schumm & Vaughn (1995)	The results showed the general education teachers did not feel prepared to teach special education students. The general education teachers also felt that they did not have enough time to collaborate with their special education partner.
Taylor, Richards, Goldstein, & Schilit (1997)	The results of this study showed that a majority of educators and students of education did not believe that special education students should not be taught together in the same classroom or in a co-teach setting.
Vaughn, Elbaum, Schumm, & Hughes (1998)	The results showed that the expectations of students in an inclusive setting were low even though there was support for the co-taught setting.

Table 2.2. Qualitative studies that show that the inclusive setting is a positive experience for general education students.

Study	Results
Biklen, Corrigan, & Quick, 1989	The results of this study showed a positive experience for general education students in terms of understanding a variety of social skills, such as acceptance of differences.
Murray-Seegert, 1989	The results of this study showed a positive social experience for general education students in an inclusive setting.
York, Vandercook, Macdonald, Heise-Neff, & Caughey, 1992	In this study 181 middle school general education students were asked about being in a class with special education students. These students thought inclusion was a good idea especially in terms of the social relationships in the class.
Helmstetter, Peck, & Giangreco, 1994	In this study, 166 high school general education students were interviewed about their perception on the inclusive setting. These students believed their friendships with the special education students in their class were beneficial for their own growth.
Staub, Schwartz, Gallucci, & Peck, 1994	In this study, 4 elementary general education students, and 4 elementary special education students were interviewed, and they believed that inclusive settings were positive for all students because it supported all student social-emotional needs.
Phillips, Sapona, & Lubic, 1995	In this study, four co-teaching partnerships, two of the partnerships were able to overcome challenges and enjoy their partnership through positive communication and solving problems together.
Henderickson, Shokoohi-Yekta, Hamre-Nietupski, & Gable, 1996	In this study, 1137 middle and high school general education students were asked about the inclusive setting. They believed that the inclusive setting created positive friendships.

Minke, Bear, Deemer, & Griffin, 1996	In this study 64 special education teachers and 69 general education teachers in inclusive settings were surveyed about the inclusive setting. These teachers believed that working in a collaborative relationship created more satisfaction as teachers compared to just the general education classrooms.
Villa, Thousand, Myers, & Nevin, 1996	In this study 587 general education teachers, 102 special education teachers, and administrators were asked about their perception of inclusion. The results showed that a majority of those interviewed supported the inclusive setting.

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The inconsistencies in results continues because of the limited amount of quantitative studies that show the impact of the inclusive classrooms on the general education student. Tables 2.3 and 2.4 list studies that show that the impact of the inclusive setting on the general education student has a negative impact, even stating that prolonged participation in an inclusion class may have an increased negative impact, while other studies show the opposite and reveal that the inclusive classroom has a positive impact on the general education student.

Table 2.5 shows studies that have resulted in either no negative impact, mixed impact, and a neutral impact on the general education student population in an inclusive setting. The idea of “no negative impact” does not mean that there was growth for the general education student. This signifies the fact that the general education student did not experience a negative effect, but the general education student also did not show any growth. The studies presented in Table 2.5 represent the idea that general education students in an inclusive setting have almost no impact on the general education student.

Table 2.3. Quantitative studies that show the inclusive setting does not support the academic education of general education students.

Study	Results
St.John, 2015	This study showed that general education students in Grades 6-8 scored lower on their ELA and Math NYS Exams when they were placed in a co-taught inclusive setting scored lower than general education students who were not in a co-taught inclusive setting.
Brown & Babo, 2017	<p>The data in this study showed that general education students who were taught in an inclusive setting had lower assessment scores than general education students who were in purely general education class.</p> <p>The results also showed that general education students who spent less time in the inclusive setting performed better on their language arts assessments.</p>

Table 2.4. Quantitative studies that show the inclusive setting does support the academic education of general education students.

Study	Results
Manset & Semmel, 1997	This study showed that the inclusive structure was a positive experience for general education students' academic achievement.
Saint Laurent, Dionne, Giasson, Royer, Simard, & Pierard, 1998	This study showed that there was positive effect on general education students in an inclusive setting in reading and mathematics compared to a purely general education classroom.

Table 2.5. Quantitative studies that show no negative, mixed, or neutral results for general education students in an inclusive setting.

Study	Results
Hunt, Staub, Alwell, & Goetz, 1994	This study of elementary school classrooms showed that the inclusive setting did not have a negative impact on the general education students on math assessments.
Sharpe, York, & Knight, 1994	This study showed that general education students did not show a decrease in standardized test scores or in report grades.
Banerji & Dailey, 1995	The results of this study showed that the general education students made similar progress in reading and writing as the special education students in the class.
Daniel & King, 1997	This study showed that elementary general education students' academic performance had no consistent pattern.
McDonnell, Thorson, Disher, Buckner, Mendel, & Ray, 2003	The study showed that the Reading/Language Arts and Math assessment scores for general education students in an inclusive setting did not show any difference compared to general education students in a purely general education class.

### **Educational Leadership and Inclusion**

For any initiative to be successful in a school, or in a district, all stakeholders need to be on the same page and stakeholders must buy-in to the initiative. “How the leadership at each school site chose to look at LRE was critical to how, or even whether, much would be accomplished beyond the status quo” (Hazani et al., 1994, p.504). For inclusive education to work effectively the administration of the building and/or district

need to make the faculty, especially the co-teaching partnerships, parents, and students feel supported. There could be many significant challenges that would need to be resolved to benefit our students who would be educated in an inclusion class. “Many educators question whether inclusion classes are beneficial to all students, including those who do not have a disability; however, school leaders must determine the appropriate placement for all students with and without a disability” (Brown & Babo, 2017, p.3). Creating a system that is built by all stakeholders and a commitment to long-term growth will be necessary to balance the significance of a united belief system about the importance of growth and ownership in his/her education and the challenge of actually placing and implementing the system.

One of the major obstacles for an effective inclusion program is differing views between the teachers at the school leadership. Cook et al. (1999) believe that there is a difference in the perception of inclusion between principals and special education teachers because principals are not directly involved in the inclusive classroom in the way special education teachers are. “These conflicting attitudes among principals and special education teachers may then explain the paradoxical simultaneous expansion and disappointment associated with inclusion reforms” (Cook et al., 1999, p. 200).

To effectively place students in an inclusive setting, a plan must be created by all stakeholders to have clear steps put in place for an inclusive program. “...administrators also need to collaborate with teachers to develop guidelines related to emerging and evolving job responsibilities in inclusive schools” (Thousand et al., 1997, p.273).

With such a variety of stakeholders involved in the inclusion process, getting everyone to work towards common short and long-term goals will take time, will take



consistent reflection, and will take follow through. Action plans that are sustainable are key to have continued support. “Not all schools are ready to make decisions on restricting for inclusion” (Mamlin, 1999, p.4).

### **Equity in Education**

The belief that no matter what the needs of the students may or may not be, all students deserve equity in education. It drives the motivation in understanding effective co-teaching strategies. As Wade and Zone (2000) state, “We need a redefinition of the professional relationship among general and special education teachers so that both children and teachers receive the necessary supports and services” (p. 8).

With all of the challenges students and teachers face, it seems to be even more challenging to bring equity in education for each student in any type of classroom. Proponents of inclusive education feel that any variation of inclusion is the answer to more equity and individualization in education. No matter which class a teacher is in front of, he/she is teaching students who vary greatly in ability, culture, language, and background. Ultimately educators want to be doing what is best for all of their students. Just as students need as much support as possible, teachers also need support.

Murphy et al., (2015) states that:

Coplanning, copractice and coevaluation require coteachers to share knowledge and expertise; to work also to individual strengths as appropriate; to support each other in developing their practice to a higher level and evaluating their progress after each lesson such that future coplanning and copractice is improved. The essential elements of the conceptual framework promote joint focus oneself,

mutual, and student learning at all stages of coteaching... (p. 9)

Salisbury (1995) also states that separating students does not allow students to experience “normalized social contexts” (p. 129). If they are not prepared in school how are they going to be prepared for society? How are the general education students going to learn compassion and understanding? Working in an inclusive setting allows students to also experience a variety of social situations. Learning to work with others who may be skilled in different areas is a significant part of succeeding in the classroom community.

Equity in education has less to do with the word equal, and more to do with helping to bring all students to a level where they have a chance to succeed in meeting and even surpassing their expectations. Bringing equity to students in their education is not only about making sure the students have the same textbooks, notebooks, pens, and pencils. Equity in education may not mean the same thing for each student. Certain students may need more supports than other students, or different kinds of support for equity to occur. Because of this fact, teachers need to help students, students need to help teachers, and they also need an opportunity to help each other. Some students are given this opportunity and others are not.

Castelli, et al. (2012) looks at equity in a more targeted manner:

- a. horizontal equity - equality of treatment for those who start at the same point
- b. vertical equity - series of compensatory measures directed towards minority groups or towards groups at risk of disadvantage (such as, for example, women, ethnic minorities or the less affluent social classes)

- c. equal education opportunity - the series of initiatives designed to ensure that everyone has the same opportunities for success, starting from different conditions and resources. (p. 6)

Looking at equity in education in a focused manner is a benefit to co-teaching. This is another way to plan effective instruction through collaboration and co-planning. Discussing and executing plans to enrich students' lives and having them experiencing concepts they might not usually have access to and planning lessons which allow students to identify and relate concepts is significant.

### **Collaboration and Co-Teaching**

Effective collaboration and co-teaching in an inclusive setting is valid in a special education setting.

Attinasi (1994) states:

In an educational setting equity is a state in which all children-minorities and non-minorities, males and females, successful students and those who have fallen behind, and students who have been denied access in the past have equal opportunities to learn, to participate in challenging programs, and to have equal access to the services they need in order to benefit from that education. (p. 40)

Attinasi believes in equity because all students should have the opportunity to succeed on the same level. Even if students had equal access to services equity may not necessarily be achieved because some students may need more guidance with these services than others.

Salisbury (1995) states, "...having restrictive environments do not prepare people for more integrated settings" (p. 128). He also states that for students with and without disabilities, the best strategy for them is to be able to apply these types of skills in everyday and even more challenging situations. They need to be familiar with and experience these situations in "normalized social contexts" (p. 129). By working with another person, the challenge of creating "normalized social contexts" for the students can be shared, and we can be a model example for the students of how people can work together effectively.

Wade and Zone (2000) state that, "Inclusive education is where all students despite differences in language, culture, ethnicity, economic status, gender, and ability, can be educated with their peers in a regular classroom in their neighborhood schools" (p. 19). She believes that this system can end the practice of labeling and segregated classrooms while keeping and increasing the necessary supports and services (Wade, 2000, p.20). These inclusive classrooms use group work strategies such as cooperative groups, peer tutoring, and community responsibility (Key, 2000, p.25).

Inclusive classrooms have positive results for students. Klinger (1999) conducted a study which investigated how students perceived inclusive education in their classroom. Twenty studies were conducted with 4,659 students. Seven hundred sixty of these students had disabilities ranging from kindergarten to the twelfth grade. The study showed that a majority of students wanted everyone to be treated the same, which meant that they did not want to have a watered-down curriculum or different goals. But, the students in the studies also understood that some have different learning needs and may not be able to be treated equally. The students believed that being treated differently

meant that the types of resources and supports did have to be modified so that students with disabilities could understand concepts and may need more assistance to complete tasks. There is a sense that all of the students may need support in one way or another. They believed that instructional supports and adaptations were acceptable, but they felt that the one thing that should remain equal was homework. This point shows that students with disabilities also want to be challenged, supported, be given high expectations, and feel a sense of fairness.

Students with disabilities want equal treatment and want to be in more activity-based learning. To support the motivation, Klinger concludes that all students and teachers can become a support system by adapting or accommodating to allow students with disabilities to be part of the general community. Her research shows that, “The problem for students with learning disabilities in a general education classroom is the lack of appropriate instructions which yield progress” (p. 27).

Having teachers work together in a co-teaching format can have its advantages. Davis-Wiley et.al (1998) state the definition of co-teaching as, “...the arrangement where two or more teachers plan, instruct, and evaluate in one or more subject areas using a variety of techniques for teaching and learning” (p. 5). This team needs to, “look beyond the usual” (Key, 2000, p.11) where the co-teaching team can come up with unique and creative ways to stimulate students and work together effectively to make a positive impact.

Davis-Wiley (1998) states that co-teaching gives teachers time to observe each other, what is going on in the classroom, and provide feedback for each other to make the necessary improvements. These situations can also be positive for the students because

they get to experience different perspectives at the same time. This allows students to observe their teachers and see how professionals work together in times of agreement and disagreement. Children learn how to act positively through the conflicts in the group (p.7).

If equity is not seen as a means to support raising standards to meet a global job-market, then equity can become detrimental. Some people may feel that equity is represented by the fact we have, "...constructed an educational system so full of inequities that it actually exacerbates the challenges of race and poverty, rather than ameliorates them. Simply put, we take students who have less to begin with and give them less in school too" (Education Trust, 1996, p.1). Even though it may seem to be more challenging, teaching all students at a high level and coming together creatively to figure out how we can accomplish this will at times, surprisingly, help students meet those standards because the students sees their teachers striving for the same goals and not giving up.

Having two teachers working together can have benefits if all the necessary pieces are present. Honigfeld and Dove (2012) stated that having an effective partnership can create more team learning. If not, there could be conflicts. Hunt et al., (2003) state that supporters of this type of inclusive education believe all children can learn. They have the right to be educated in heterogeneous classrooms in their own community. The school community has the responsibility to support the diverse educational needs of the students, because it can also benefit the students who do not have disabilities. The process can also help these students learn to be more sensitive, accept human differences and have empathy for students who may have struggles other students may not have

experienced (p. 316). Having a co-teaching community can allow equity to be created together in a supportive environment. These are life-long skills.

Planning for effective co-teaching takes a lot of planning and time. This can deter many teachers from using co-teaching strategies because of scheduling difficulties and because many teachers may not see obvious rewards. Some see different significance levels of the curriculum and one member may try to make up for the imbalance. There are also issues which may be less tangible, such as ethical beliefs and prejudice. If a teacher has different ethical beliefs or if at least one of the teachers has prejudices towards a certain group, it can be detrimental to the students. According to Pappamihel (2012), "...co-teaching is similar to an arranged marriage" and is difficult to do well because of the continued sense of "unequal power relationship given by the mainstream teachers..." (p. 6). Wade (2000) recorded the conflicts reading specialist Joan Baker experienced in trying to collaborate with teachers to help support different skills students needed. Joan Baker's experiences were with two high school Social Studies teachers. The teachers felt that the collaborating teacher was a separate entity from the regular classroom. Joan was looked at more like a teacher's aide or a substitute teacher. The general education teachers also assumed that the co-teaching partners were not interested in being a part of the group but preferred working with smaller groups.

The greatest difficulty Joan experienced was the lack of communication. Teachers would not communicate any changes which were made, and in the end the students would suffer the most. There was also difficulty scheduling meetings and motivating teachers as co-teaching is supported more and more Wade

(1992) suggests that, “Collaborative teaming is a vehicle for unifying the historically dual system of general and special education” (p. 203).

Through their research of how effective the collaborative teaming process is, Hunt, et al. (2003) states that there are three components which promote collaborative teams. The first component is flexibility in teaching assignments so that collaboration may work. Second, careful design of teaching teams and third, to redefine the jobs of the educators. Redefining the job is crucial for collaboration to be successful because the educators involved must clearly understand what compromises or alterations may be made. The school leadership must help to create opportunities for teachers to plan and support the teams with the necessary resources. The positive feelings teachers would experience from supportive administration is similar to what students would feel from supportive teachers.

One of the most important ways co-teaching educators can feel the support of the educational leaderships in the district is through district supported professional development opportunities in co-teaching. Through these meetings educational leaders can be a part of the conversations and help to create more time for teachers to plan together. The professional development opportunities and time given to plan are the answers to effective co-teaching but the process. By creating a continuous process with reflection and continued collaboration the motivation to continually grow in the co-teaching environment will be sustained.

### **Challenges of Co-Teaching**

“In many respects, there was more consensus about the problems that co-teaching participants encountered than there was about the benefits they reported” (Thomas, 1997,



p. 402). To many this may seem that co-teaching is ineffective in the classroom, but it was more about the frustrations with the co-teachers were feeling. They wanted to make it work but similar challenges kept coming up. According to Thomas having enough planning time was a major problem especially in the elementary and high school levels. The middle school level was easier because of the middle school framework where students are given more independence but supported by a collaborating team of teachers. These teachers have more time to work together.

Many of the other similar challenges stem from the amount of administrative support. “Many participants reported that the principal’s role in this effort was critical. His or her attitudes about scheduling seemed to influence the actions and attitudes of other staff members” (p. 403). Principals have great influence on scheduling and creating a more collaborative school culture. Without administrative support the co-teaching model does not seem it could work successfully. Scruggs et al., (2007) states that, “It was concluded that co-teachers generally supported co-teaching, although a number of important needs were identified, including planning time, student skill level, and training; many of these needs were linked to administrative support” (p. 392). When the necessary foundation is not set through the educational leaders and all of the stakeholders involved, the balance of student needs in a class may not be conducive to effective co-teaching. “Poor program planning undermines future efforts because teachers, parents and other administrators hear about the problems that are inevitable in classrooms where there are too many low achieving students and limited professional support” (p. 403).

Being able to pick the right partner can also be a challenge. For the partnerships to have a better chance to be successful they need to be created with input from the

teachers themselves. “Many investigations included some reference to co-teaching as a marriage, that is, requiring effort, flexibility, and compromise for success” (Scruggs, 2007, p. 405). Teachers who do not see themselves as equals will struggle more than teachers who see themselves as equals.

Many school cultures have become comfortable with different variations of one teacher being the main teacher and the other acting as the assistant. Westberg & Jason (2001) represented this lead teacher and assistant teacher role when he stated, “The general education teacher was most frequently the lead teacher, while the special education teacher usually moved about the classroom and interacted as necessary with individual students, although not necessarily classified students” (p.70). Because of this type of culture there could be a type of power struggle between the teachers will be evident through their actions and their conversations. Students will be able to pick up on these negative cues and it will affect the respect and motivation in the class.

Giving the teachers who would like to be involved in a co-teaching partnership an opportunity to see if they would be compatible is important because they would have an opportunity to see if their personalities, educational philosophies, commitment, and teaching styles will complement each other to reach the goals of the partnership.

Stark (2015) noted that:

...two teachers with the same degree, but different teaching styles were not good examples for co-teaching. There has to be a balance between both teachers to be effective in a classroom and they also have to have close to or the same type of teaching style for the teachers to mesh” (p. 8).

## **Benefits of Co-Teaching**

Although there are some obvious challenges, there are also many positive experiences that show how effective and significant co-teaching can be for faculty and students. As much as the focus is on how co-teaching can benefit our students, it can have a great impact on the educators themselves. Because the teachers are working together, they are learning from each other and improving their own skills. Usually the general education teacher has the content knowledge and the special education teacher or the ENL teacher as the knowledge of what individualized skills the students may need. By working together in a consistent manner, the teachers all can learn and practice each other's strengths. Austin (2001) states that, "Special education co-teachers cited an increase in content knowledge and general education co-teachers noted the benefits to their skill in classroom management and curriculum adaptation" (p. 250).

Teachers who participate in co-teaching programs cannot only experience benefits for themselves as educators but others as well. When a school culture promotes leadership not only for the administrators but the educators themselves motivation and collaboration can increase. Thomas (1997) states that co-teaching educators experienced, "...increased professional satisfaction, opportunities for professional growth, personal support, and increased opportunities for collaboration" (p. 401). Because of the positive outcomes co-teaching can bring, educators seemed more willing to collaborate in general. Thomas (1997) states that educational leaders noticed that the idea of co-teaching and inclusion become a part of the general education teachers as well as the special education teachers (p. 402).

The type of co-teaching that seemed to be the most popular is have the general education teacher be the lead teacher with the content knowledge, and the special education or the ENL teacher acting as the assistant. In an effective co-teaching model, students would understand that both teachers are lead teachers even if they may not teach in a 50/50 manner. When teachers do not teach as team teachers an effective relationship is when one teacher teaches the lesson and the other assesses the lesson by walking around, assessing, and creating notes and records for students. One teacher can also pre-teach as the other teacher can give supportive information. If there is a large number of students in a room, which can be possible in many school districts, dividing the class into two groups and having each lead teacher teach the same lesson can also be effective because there are less students in each group. The idea is that there is no loss in effective education because each lead teacher is teaching the same material simultaneously.

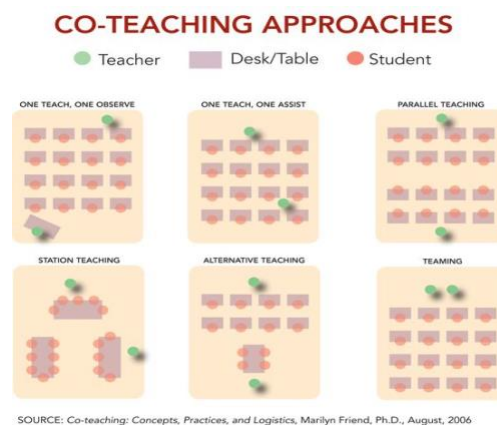


Figure 2.3. A visual model of the different approaches to co-teaching.

Having teachers and students work together in a cooperative manner will benefit students at all levels. Jenkins et al., (2003) state that one of the most important results of cooperative education can be the sense of security students can achieve by being

surrounded by their peers, even if the students are unmotivated because of the lack of cohesion. This is why having more than one teacher in the classroom can help groups work more effectively together. Teachers can reach more groups more of the time so they can help to model cooperation and the value of it. Modeling high academic performance and giving encouragement are key elements which teachers can use to help spark a group.

Communication is a key component that stays in the forefront of a class that participates in a co-teaching environment. Jenkins et al., (2003) states that cooperative learning allows for “kid talk” (p.280). Kid talk allows students to help each other clarify assignments by interpreting complex instructions in language the students might be more comfortable with. This in turn allows for higher rates of success because of clearer understanding of the expectations. Feedback can also be more productive in this way.

Students desire a type of inclusive classroom because they simply want to be treated in the same way. Wade (2000) stated that, “Development of positive social relationships and networks is an important and problematic goal for students with disabilities - they are most routinely segregated” (p. 10). The findings in the Klinger (1999) study of the perception of inclusive education in the classroom mirrored these findings. The resource room students also wanted to be treated equally and wanted a chance to meet the challenges of the classroom. 90% of the students believed that they would be able to meet the challenges.

A major goal for a co-teaching team would be to be able to take these skills and concepts which the students learned and be able to apply them in more challenging situations where everyone of all abilities could work together towards a

conclusion. Lessons and groups would need to be structured with the strategy of variation in instruction. Key (2000) stated that a collaborative team needed to look beyond what we already know and that we should work together to stimulate learners through unique and creative ways.

Lisa Delpit (2012) discusses the idea of educators being a “warm demander” and how this idea can help to bring equity for our students and bring our co-teaching partnerships together. Delpit states that being a warm demander is someone who has high expectations for his/her students in a structured and disciplined environment. Everyone works together to show students the intelligence they have and the intelligence that they have not yet realized. “Warm demanders expect a great deal of their students, convince them of their own brilliance, and help them to reach their potential in a disciplined and structured environment” (p.77). To be able to accomplish this task, collaboration is key and sharing experiences to create a supportive community like class that represents what society may like. If we think that education is only what happens in our classroom it will be difficult to reach our students. Education, learning, and wanting to take ownership of our education is a worldly endeavor and we need to represent this in our classroom.

Even with all of the controversy with the Common Core State Standards and the conflagration of opposition, the standards have a way of clarifying the high expectations and hopefully making sure that all of our students are not experiencing watered down and a more divisive curriculum. Creating a reflective culture is a significant component in becoming more effective teachers and seeing how partnerships can affect even our own philosophies as educators. Working together in a partnership allows educators to realize

that the credit for growth goes to “us” and not just “I.” Working closely with another professional can be a humbling experience because educators, students, parents, and other educational leadership can see the positive results of sharing leadership.

## CHAPTER 3

### Methods and Procedures

#### Research Questions/Hypotheses

1. What is the influence on New York State Regents Exam scores of general education students’ in co-taught inclusive classrooms, compared to general education students in a purely general education classroom?
2. What is the effect of inclusion classes on the academic achievement of general education students?

Null Hypothesis 1: There is no statistically significant relationship between placement in an inclusion classroom and general education students’ achievement on the 2019 New York State Algebra I Regents Exam.

Null Hypothesis 2: There is no statistically significant relationship between placement in an inclusion classroom and general education students’ achievement on the 2019 New York State Living Environment Regents Exam.

Null Hypothesis 3: There is no statistically significant relationship between placement in an inclusion classroom and general education students’ achievement on the 2019 New York State Global History Regents Exam.

Null Hypothesis 4: There is no statistically significant relationship between placement in an inclusion classroom and general education students’ achievement on the 2019

New York State United States History Regents Exam.

Null Hypothesis 5: There is no statistically significant relationship between placement in an inclusion classroom and general education students' achievement on the 2019 New York State English Regents Exam.

### **Research Design and Data Analysis**

The purpose of this study is to investigate if there is a positive impact, negative impact, or no impact of the inclusive classroom setting on high school students using the 2019 New York State Regents scores. The Algebra 1, Living Environment, Global History, United States History, and the English scores will be used in the study. In New York State, all high school students take Regents exams as a graduation requirement. A comparative research study was used because the exams were already taken by the students and the scores were released. There was no random selection for this study. According to Gall, Gall, & Borg (2007) a comparative research approach to a non-experimental quantitative study is effective when a researcher is analyzing the data to find a cause and effect relationship.

The independent variable for the study was the general education students' placement in an inclusive classroom and the general education students' placement in a non-inclusive classroom setting. The dependent variable for the study was the general education students' achievement scores on the 2019 NYS Regents Exams specifically analyzing passing rates and mastery rates.

Each students' NYS Regents exam scores were used to analyze the cause and effect relationship of general education students' scores in a purely general education class compared to general education students' scores participating in a co-taught



inclusion class. A t-test with the Regents scores as a covariate was used. “An independent samples t-test was used when the means of two independent groups are compared on a constant dependent variable” (Yockey, 2011, p.71). The Statistical Package for Social Sciences (SPSS) was used to organize and filter the quantitative data.

This study was carried out as an ex post facto research design because the groups were already set before the research began and groups, which are the independent variables cannot be altered. The ex post facto research design is a type of quantitative research where the results or causes are studied after the results are shared (Gall, Gall, & Borg, 2007).

### **The Sample and Population**

The sample for this study represents a student population from a middle class suburban high school in Suffolk County Long Island, New York.

Table 3.1. Enrollment Data

Total Number of Students Grades 9-12 1360		
Enrollment Category	Percentage	Number
Male	54%	735
Female	46%	625
American Indian/Alaska Native	0%	2
Black/African American	18%	241
Hispanic/Latino	24%	322
Asian/Native Hawaiian/Pacific Islander	12%	163
White	44%	603
Multiracial	2%	29
English Language Learners	6%	75

Students with Disabilities	15%	207
Economically Disadvantaged	48%	650
Homeless	1%	11

The samples from this study was prepared by purposive sampling. The samples are already set and easy to access (Gall, Gall, & Borg 2007). The total population of high school general education students assigned to inclusive classes that culminate in a 2019 NYS Regents Exam and the total population of high school general education students assigned to non-inclusive classes that culminate in a 2019 NYS Regents Exam. All of the data includes students from 9<sup>th</sup> grade, 10<sup>th</sup> grade, and 11<sup>th</sup> grade students.

This is an acceptable sample because in comparative research there should be at least fifteen participants in the study to make it a valid study (Gall, Gall, & Borg 2007).

Table 3.2. Sample and Population of General Education Students in General Education classes and General Education Students in co-taught inclusion classes.

Regents Exam	# of General Education Students General Education Classes	# of General Education Students in Co-Taught Inclusion Classes
Algebra 1	221	47
Living Environment	112	30
Global History	283	32
United States History	252	62
English	220	23

## **Instruments**

The 2019 New York State Regents Examinations in Algebra I, Living Environment, Global History, United States History, and English were used to measure general education student achievement in an inclusive setting and in a non-inclusive setting. According to the New York City Department of Education website, the purpose of the New York State Regents Examinations is to measure student achievement in specific high school courses. For students in New York to graduate from high school, they are required to pass at least, with a score of 65 or higher, five Regents exams in ELA, Math, Science, and Social Studies. Students also have the opportunity to earn an Advanced Regents Diploma if they pass an additional Regents exam in Math, Science, and a Foreign Language exam with a score of 85 or higher and an Advanced Regents Diploma with Honors Recognition with a score of 90 or higher.

## **Treatment and Interventions**

To begin organizing the data, all general education students who completed an Algebra 1, Living Environment, Global History, United States History, and English 2019 NYS Regents Examination were included. General Education students were organized by the Regents exam he/she completed and then organized by whether the general education student was in an inclusion class or a non-inclusion class.

The independent variable was the general education students' placement which cannot be altered. The dependent variable was the Regents exams scores. The scores of general education students in an inclusive classroom and the scores of general education students who were not in inclusive classrooms were compared to see if there is any significance in placement.

The multiple-choice portion of each NYS Regents exams is scored out of the schools and the short response and essay sections of the exams are schools by the teachers in each department. All teachers are trained to norm the answers and there are double and triple scoring measures for each response.

### **Procedures for Collecting Data**

Permission to use school data was granted by the superintendent of the school district and a letter of permission was shared with the superintendent. The content area department supervisors each shared their content area 2019 Regents exam scores using the data on the Eastern Suffolk BOCES BARS (BOCES Assessment Reporting System) reports. The data was shared using Excel spreadsheets with all student names deleted and replaced by numbers. The students' gender, indications of whether the students were general education students in a purely general education class or general education students in co-taught inclusion classes, and his/her Regents scores were shared.

## **CHAPTER 4**

### **Results**

The purpose of this study is to investigate to what extent a general education students' participation in a purely general education class or a co-taught inclusion class impacts his/her performance on the New York State Regents exams. Students' New York State Regents scores from a middle class suburban high school Grades 9-12 were used to examine the impact of inclusive education on general education students.

The scores from the Algebra 1 (Math) and the Living Environment (Science) Regents exams which are given in the 9<sup>th</sup> grade, the Global History Regents which is given in 10<sup>th</sup> grade, and the English and United States History Regents exams which are

given in 11<sup>th</sup> grade were analyzed using independent t-tests. Whether the general education student participated in an inclusion or not was the independent variable and the Regents scores were the dependent variable in this study.

The results of this study indicate that efforts are more focused on the special education student population and supporting them with opportunities to level the playing field with general education students. Just as much efforts needs to be shared with the general education student population who share in the inclusion experience. As the special education student population in the inclusion classes are given the opportunities towards success, the general education students need to be challenged to exceed any limitations.

### **Null Hypothesis**

Null Hypothesis 1: There is no statistically significant relationship between placement in An inclusion classroom and general education students' achievement on the 2019 New York Algebra I Regents Exam.

Null Hypothesis 2: There is no statistically significant relationship between placement in an inclusion classroom and general education students' achievement on the 2019 New York State Living Environment Regents Exam.

Null Hypothesis 3: There is no statistically significant relationship between placement in an inclusion classroom and general education students' achievement on the 2019 New York State Global History Common Core Regents Exam.

Null Hypothesis 4: There is no statistically significant relationship between placement in an inclusion classroom and general education students' achievement on the 2019 New York State United States History Regents Exam.

Null Hypothesis 5: There is no statistically significant relationship between placement in an inclusion classroom and general education students' achievement on the 2019 New York State English Regents Exam.

Table 4.1. New York State 2019 Algebra I Regents Exam Independent T-Test Results  
*Group Statistics*

	Student Category	N	Mean	Std. Deviation	Std. Error Mean
Numerical Score	not a member of inclusion class	221	71.23	10.276	.691
	participate in inclusion class	47	71.30	10.486	1.530

*Independent Samples Test*

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Numerical Score	Equal variances assumed	.147	.702	-.041	266	.968	-.067	1.656	-3.329	3.194
	Equal variances not assumed			-.040	66.13	.968	-.067	1.678	-3.418	3.284

An independent-samples t-test was performed to compare general education students' Algebra I Regents exams scores who were taught in a purely general education classroom to the scores of general education students who were taught in a co-taught inclusion class.

There is no significant difference between the average scores of general education students taught in a general education class (M=71.23, SD=10.276) and

general education students taught in a co-taught inclusion class (M=71.74, SD=10.486) conditions;  $t(266)=-.041$ ,  $p=.968$ .

These results suggest that general education students' participation in a co-taught inclusion class does not have an impact on their performance compared to general education students who are in a purely general education class on the Algebra 1 Regents.

Table 4.2. New York State 2019 Living Environment Regents Exam Independent T-Test Results

<i>Group Statistics</i>										
		Student Category	N	Mean	Std. Deviation	Std. Error Mean				
Numerical Score		not a member of inclusion class	112	70.47	13.591	1.284				
		participate in inclusion	30	70.03	13.652	2.493				

<i>Independent Samples Test</i>										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Numerical Score	Equal variances assumed	.001	.972	.157	140	.875	.440	2.797	-5.089	5.969
	Equal variances not assumed			.157	45.60	.876	.440	2.804	-5.205	6.085

An independent-samples t-test was performed to compare general education students' Living Environment Regents exams scores who were taught in a purely general education classroom to the scores of general education students who were taught in a co-taught inclusion class.

There is no significant difference between the average scores of general education students taught in a general education class (M=70.47, SD=13.591) and general education students taught in a co-taught inclusion class (M=70.03, SD=13.652) conditions;  $t(140)=.157$ ,  $p=.875$ .

These results suggest that general education students' participation in a co-taught inclusion class does not have an impact on their performance compared to general education students who are in a purely general education class.

Table 4.3. New York State 2019 Global History Regents Exam Independent T-Test Results

<i>Group Statistics</i>										
	Student Category	N	Mean	Std. Deviation	Std. Error Mean					
Numerical Score	not a member of inclusion class	283	79.49	17.533	1.042					
	participate in inclusion	32	65.41	15.992	2.827					

<i>Independent Samples Test</i>										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Numerical Score	Equal variances assumed	.077	.781	4.343	313	.000	14.081	3.243	7.701	20.461
	Equal variances not assumed			4.674	39.91	.000	14.081	3.013	7.992	20.171

An independent-samples t-test was performed to compare general education students' SS Global Regents exams scores who were taught in a purely general education



classroom to the scores of general education students who were taught in a co-taught inclusion class.

There is a significant difference between the average scores of general education students taught in a general education class (M=79.49, SD=17.533) and general education students taught in a co-taught inclusion class (M=65.41, SD=15.992) conditions  $t(313)=4.34, p=.000$ .

These results suggest that general education students' participation in a co-taught inclusion class does have an impact on their performance compared to general education students who are in a purely general education class.

Table 4.4. New York State 2019 United States History Regents Exam Independent T-Test Results

<i>Group Statistics</i>										
	Student Category	N	Mean	Std. Deviation	Std. Error Mean					
Numerical Score	not a member of inclusion class	252	86.75	13.148	.828					
	participate in inclusion class	62	75.68	16.987	2.157					

<i>Independent Samples Test</i>										
		Levene's Test for Equality of Variances			t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Numerical Score	Equal variances assumed	8.136	.005	5.588	312	.000	11.077	1.982	7.177	14.977
	Equal variances not assumed			4.793	79.88	.000	11.077	2.311	6.478	15.675

An independent-samples t-test was performed to compare general education students' SS US Regents exams scores who were taught in a purely general education

classroom to the scores of general education students who were taught in a co-taught inclusion class.

There is a significant difference between the average scores of general education students taught in a general education class (M=86.75, SD=13.148) and general education students taught in a co-taught inclusion class (M=75.68, SD=16.987) conditions  $t(312)=5.59, p=.000$ .

Table 4.5. New York State 2019 English Regents Exam Independent T-Test Results

*Group Statistics*

	Student Category	N	Mean	Std. Deviation	Std. Error Mean
Numerical Score	not a member of inclusion class	220	81.42	12.486	.842
	participate in inclusion class	23	74.43	12.784	2.666

*Independent Samples Test*

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Numerical Score	Equal variances assumed	.433	.511	2.547	241	.011	6.983	2.742	1.582	12.385
	Equal variances not assumed			2.498	26.58	.019	6.983	2.795	1.243	12.723

These results suggest that general education students' participation in a co-taught inclusion class does have an impact on their performance compared to general education students who are in a purely general education class.

An independent-samples t-test were performed to compare general education students' English Regents exams scores who were taught in a purely general education classroom to the scores of general education students who were taught in a co-taught inclusion class.

There is a significant difference between the average scores of general education students taught in a general education class (M=81.42, SD=12.486) and general education students taught in a co-taught inclusion class (M=74.43, SD=12.784) conditions;  $t(241)=2.547$ ,  $p=.011$

These results suggest that general education students' participation in a co-taught inclusion class does have an impact on their performance compared to general education students who are in a purely general education class.

### Research Question #1

What is the influence on New York State Regents Exam scores of general education students' in co-taught inclusive classrooms, compared to general education students in a purely general education classroom?

Table 4.6. Influence of New York State Regents Exam scores of general education students' in co-taught inclusive classrooms, compared to general education students in a purely general education classroom.

Regents Exam	Null Hypothesis	T-test results
Algebra 1	#1 Accept	general education class (M=71.23, SD=10.276) co-taught inclusion class (M=71.30, SD=10.486) $t(266)=-.041$ , $p=.968$ .
Living Environment	#2 Accept	general education class (M=70.47, SD=13.591) co-taught inclusion class (M=70.03, SD=13.652) $t(140)=.157$ , $p=.875$ .
Global History	#3	general education class (M=79.49, SD=17.533)

	Reject	co-taught inclusion class (M=65.41, SD=15.992) t(313)=4.34, p=.000.
United States History	#4 Reject	general education class (M=86.75, SD=13.148) co-taught inclusion class (M=75.68, SD=16.987) t(312)=5.59, p=.000.
English	#5 Reject	general education class (M=81.42, SD=12.486) co-taught inclusion class (M=74.43, SD=12.784) t(241)=2.55, p=.011.

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Independent t-tests were run for each 2019 Regents Exam with the independent variables being whether the general education student participated in a purely general education class or the general education student participated in a co-taught inclusion class. The dependent variable was the Regents scores. All t-test results that had a p-value of .05 or less ( $p \leq .05$ ) rejected the null hypothesis and showed that the placement of general education student in a purely general education class or the placement of the general education student in a co-taught inclusion class had a significant impact on his/her Regents scores.

The results revealed that 9<sup>th</sup> grade general education students being placed in a co-taught inclusion class showed no significance for Math (Algebra I) and Science (Living Environment). 10<sup>th</sup> grade general education students in co-taught inclusion classes revealed a significant impact in Social Studies (Global History) and 11<sup>th</sup> grade general education students in co-taught inclusion classes revealed a significant impact in both Social Studies (United States History) and in English.

## **Research Question #2**

What is the effect of inclusion classes on the academic achievement of general education students?

An independent T-Test was run for each Regents exam to examine the possible association between Regents scores for general education students participating in a purely general education class versus the Regents scores for general education students participating in a co-taught inclusion class. The results of the t-tests indicate that a large discrepancy in the p-value scores between the Math (Algebra I) and Science (Living Environment) Regents exams,  $p=.968$  and  $p=.875$ , and the Humanities based Regents exams (Global History, United States History, English) Regents exams,  $p=.000 \times 2$  and  $p=.018$ .

This obvious discrepancy indicates that there are mixed results on the general education students' participation in a co-taught special education class, but there seems to be an association between the Math and Science and the Humanities content areas. The results show that the Algebra I and Living Environment Regents scores of general education students in purely general education classes and general education students in co-taught inclusion classes did not have a significant difference with passing the Regents exams. Even though the idea that a general education student's participation in his/her Algebra I and Living Environment class did not have a significant impact on the general education student, it does send a clear message that learning growth did not necessarily occur.

There is a significant impact on the placement of the general education student for the Global History, United States History, and the English Regents exam passing rate

with the general education students being instructed in a purely general education class achieving a higher passing rate than those general education students instructed in a co-taught inclusion class. This is a concern because students who attend high schools in New York are required to pass five Regents exams to be able to graduate. Not passing at-least five Regents exams means that graduation may not be possibility.

Even though there are mixed results on the passing rates of the Regents exams, the results relating to achieving mastery on the content of the Regents exams is more clearly in favor of general education students not participating in co-taught inclusion classes. The mastery percentages are significantly greater with all Regents exams scores except for the Living Environment Regents exam.

Overall, the null hypothesis for the Humanities based Regents exams (Global History, United States History, and English) were rejected which indicates that there is a significant impact of general education students' placement in a co-taught inclusion class. 10<sup>th</sup> and 11<sup>th</sup> grade general education students who were instructed in a co-taught inclusion class scored significantly lower and had lower passing rates than general education students who were instructed in a purely general education class.

The null hypothesis for the Math and Science based Regents exams (Algebra I and Living Environment) were retained which indicated that there is no significant impact on general education students who were instructed in co-taught inclusion classes. Even though the null hypothesis was accepted for the scores for Algebra I Regents exam, the mastery rate was 3% higher in the purely general education classes.

## **Mastery Results**

Passing New York State Regents Exams with at a score of 65 or higher is a requirement for students who attend New York high schools. Not only is passing significant, but mastery of the content on each exam is also important. Any score that is 85 and higher on the exams is considered mastery.

The mastery results for the five NYS Regents exams were organized by the percentage of general education students receiving mastery on each Regents exam based on whether they were in a purely general education class or if they were in a co-taught inclusion class. The results show that general education students who are not in co-taught inclusion classes achieved a higher percentage of mastery except for the Living Environment Regents exam. The humanities-based Regents exams: English, United States History, and Global History exams, had the highest percentage of general education students participating in purely general education classes achieving mastery.

## **CHAPTER 5**

### **Discussion**

The effective balance between supporting general education students and special education students in our high schools has been and will continue to be a necessary challenge. General education students placed in inclusion classes need to be given as much attention to their needs and their special education classmates. Understanding the skill levels of the general education students in the inclusion classes can clarify the goals for both populations in the class. As our student population continues to become more diverse, the supports necessary for our students are also becoming more diverse. “As schools are challenged to effectively serve an increasingly diverse student population, the

concern is not whether to provide inclusive education, but how to implement inclusive education in ways that are both feasible and effective in ensuring school success for all children...” (Baker et al., 1995, p.34).

This balance has been difficult to achieve on the high school level not only because of the more personalized education structure on the secondary level, but also because the laws that supported mainstreaming special education students and general education students focused on the successful integration of the special education student population and not necessarily the general education student population. Public Law 94-142, The Regular Education Initiative (REI) in the 1980s, No Child Left Behind (2001), and the 2004 Individuals with Disabilities Education Improvement Act (IDEIA) all believe in the idea that, “A school in which teachers group students heterogeneously allows all students to have equal access to the core curriculum, which the community has identified as important for future career and adult life success” (Thousand & Villa, 1992, p.274).

According to Villa et al., (2005), “more students with disabilities than ever before were being educated in a general education classroom” (p. 25). Supporters for inclusion believe that inclusive education is more effective for special education students rather than a self-contained environment because of the exclusionary practice of self-contained education (Shultz, 2001, p.19). Others believe that there would be too many challenges for the general education teacher to effectively differentiate instruction when the needs are too diverse. “...grouping children with similar abilities in a self-contained special education classroom can allow for more focused and intensive instruction” (Kauffman et al., 2005, p. 306).



Making sure all students are supported in inclusive classrooms does not take away from the fact that teachers will also need to be supported by the administrative leadership to work efficiently and effectively in a co-teaching environment. Even though the majority of teachers support the idea of inclusive education, "...both general and special educators found that they were frustrated with the placement of students with significant academic and behavioral discrepancies in the general classroom" (McGill & Robinson, 1989, p.50). There is an expectation for both the general education teacher and the special education teacher to plan and execute curriculum effective together. The challenges of preparing for a diverse group of students with specific goals set for the special education student population in the class suggests that that professional development is necessary and must be available for support and growth. "According to researchers, general education teachers are expected to be prepared to teach diverse groups of students, however many pre-service and in-service courses do not equip educators with the necessary knowledge and skills to do so" (Vaughn et al., 1998, p. 430).

The purpose of this study is to investigate to what extent a high school general education student's participation in an inclusion class impacts their educational needs using the New York State Regents exam scores. All high school students preparing to graduate from a New York high school must pass at least five Regents exams with a score of 65 or higher to do so. There is also an opportunity for students to receive a Regents Diploma with Advanced Designation by passing the required five and an extra Social Studies and an extra Science Regents exam. A Regents Diploma with Advanced

Designation and Honors Distinction can be achieved by students who receive a score of 90 or higher on each Regents exam.

In this study, 2019 New York State Regents exam scores in Algebra I, Living Environment, Global History, United States History, and English were used from a suburban high school in Suffolk County located in Long Island, New York were used. 9<sup>th</sup>, 10<sup>th</sup>, and 11<sup>th</sup> grade students were represented in the study. Ex-post facto Independent t-tests were run for each exam comparing the passing rates and the mastery rates of general education students based on their placement in a purely general education class or on their placement in an inclusion class.

The study revealed a mixed significance based on the particular placement of the general education student. With p-values being  $p=.968$  for Algebra I and  $p=.875$  for Living Environment, the null hypothesis was retained because the p-values were significantly over the  $p\leq.05$  mark. The mastery levels, which indicates Regents exam scores of 85 or higher, showed general education Algebra I students who were placed in a purely general education class received 3% more students achieving mastery. The mastery levels on the Living Environment Regents exam showed general education students in the inclusion class receiving 2% more mastery results.

The null hypotheses for the Global History, United States History, and the English Regents exams were all rejected. The p-values were  $p=.000$  for both the Global and United States History Regents exams, and  $p=.018$  for the English Regents exam. These p-values indicate that the general education student's placement in an inclusion class had a negative impact on the general education student's exam performance and that the passing rate was higher for general education students who were placed in the purely

general education class. Mastery rates on these exams were also significantly higher for general education students who participated in the purely general education class. The Global History mastery rate supported general education students participating in a purely general education class with a 42% difference of mastery in those classes compared to general education students in the inclusion class. Similarly, with the United States History, there was a 33% difference, and a 32% difference for general education students on the English Regents exam.

These results present the fact that the humanities-based exams showed more a significance in the placement of general education students than did the math and science Regents exams. The Algebra I and Living Environment Regents exams were taken by 9<sup>th</sup> graders, the Global History was taken by 10<sup>th</sup> graders, and the United States History, and English Regents exams were taken by 11<sup>th</sup> graders at the high school. By increasing the efforts to support the general education population in an inclusion class can also raise the expectations for all students in the class.

### **Implications of Findings**

The results of this study reveal that there are mixed results in terms of the placement of general education students in a purely general education class or the placement of general education students in an inclusion class based on the results of their 2019 Algebra I, Living Environment, Global History, United States History, and English Regents exam scores. The passing rates and mastery rates of the exam scores indicate that the placement of general education students is significant in Global History, United States History, and English Regents exams, and not significant on the Algebra I and

Living Environment Regents exams. The rate of mastery is significantly higher in purely general education classes versus the co-taught inclusion classes.

Table 5.1. Mastery Results for the 2019 New York State Regents Exams listed.

<b>Regents Exam</b>	<b>General Education Students General Education Classes % of Mastery</b>	<b>General Education Students in Co-Taught Inclusion Classes % of Mastery</b>
Algebra 1	7%	4%
Living Environment	11%	13%
English	45%	13%
United States History	67%	34%
Global History	48%	6%

This research is significant in filling a major gap in quantitative research on mainstreaming and inclusion education on the high school level. Inconsistent data results on inclusion education is partly a result of a lack of research in general and even less of a focus on the impact on the general education student population. “Generalizations about inclusion thus remain tentative, and it appears unwise to advocate for inclusion without ensuring that it is carried out effectively” (King-Sears & Cummings, 1996). Lev Vygotsky’s theory of social cognitive development and the zone of proximal development indicate that, “...for a person to learn concepts, they must experience them and socially negotiate their meaning in authentic, complex learning environments.” This indicates that, “...the social setting itself is crucial to the learning process” (Allen, 2005, p.324). This theoretical framework has a direct implication with the significance of the

placement of not only the special education student in a setting that would best promote this type of social learning, but also the best placement for a general education student.

Seeing how the Global History, United States History, and English Regents exam scores indicated that general education students participating in an inclusion class had a negative impact on passing rates and mastery rates on exams that students must pass with at least a score of 65 or higher, could indicate that their “social setting” needs to more consideration. “Several major studies in the 1980s showed that it is difficult to classify children accurately and that the classification system for placing students in special programs are seriously flawed” (Reschly 1987, Wang et al., 1992, Ysseldyke, 1987). There is a possibility that opportunities for these students to receive a Regent Diploma with Advanced Designation or even Honors Designation with a score of 90 or higher on every Regents exam, could be out of reach for many students.

The core believe with Vygotsky’s zone of proximal development is that what a child can do on his/her own is different from a child can do with the help of a support system (Estep, 1999, p.15). The support system for all students, general education and special education, need to be considered in the same degree to allow for students to have an opportunity to surpass what may seem like obstacles for them.

### **Relationship to Prior Research**

The lack of qualitative and quantitative research focusing on the impact of inclusion on the general education student population is partly responsible for inconsistent research results and continuing to enable schools on the secondary level to focus energies on strategically placing special education students in mainstreamed

inclusion classes without a balanced effort to place general education students strategically in an environment where their learning growth is a priority.

Acronyms such as FAPE (Free and Appropriate Education) and LRE (Least Restrictive Environment) have crossed many laws throughout history. Public Law 94-142, the Regular Education Initiative (REI) during the 1980s, No Child Left Behind in 2001, and the Individuals with Disabilities Education Improvement Act (IDEIA) in 2004 all support special education students mainstreaming into general education classrooms to try and achieve equity in education. Research prior to this study indicate a variety of inconsistencies. The argument that, "...without access to general education teachers with expert content knowledge and opportunities to learn and practice communication and social skills with students without disabilities, it is impossible for students with disabilities to fully access the general education curriculum" (Ryndak & Wehmeyer, 2009, p.306) lacks the ability to be a conclusive statement because the research continues to contradict itself.

These contradictions in the research and the inconsistencies in this current study has given opportunities for those who do not support inclusion the believe that, "Separateness may be required for equality of opportunity when separation is based on criteria directly related to teaching and learning" (Kaufmann 1989).

Table 5.2. Contradictions for qualitative studies related to inclusion classes.

Positive	Negative
<p>Villa, Thousand, Myers, &amp; Nevin, 1996</p> <p>In this study 587 general education teachers, 102 special education teachers, and administrators were asked about their perception of inclusion. The results showed that a majority of those interviewed supported the inclusive setting.</p>	<p>Vaughn, Elbaum, Schumm, &amp; Hughes (1998)</p> <p>The results showed that the expectations of students in an inclusive setting were low even though there was support for the co-taught setting.</p>
<p>Minke, Bear, Deemer, &amp; Griffin, 1996</p> <p>In this study 64 special education teachers and 69 general education teachers in inclusive settings were surveyed about the inclusive setting. These teachers believed that working in a collaborative relationship created more satisfaction as teachers compared to just the general education classrooms.</p>	<p>Taylor, Richards, Goldstein, &amp; Schilit (1997)</p> <p>The results of this study showed that a majority of educators and students of education did not believe that special education students should be taught together in the same classroom or in a co-teaching setting.</p>

Table 5.3. Contradictions for quantitative studies related to inclusion classes.

Positive	Negative
<p>Saint Laurent, Dionne, Giasson, Royer, Simard, &amp; Pierard, 1998</p> <p>This study showed that there was a positive effect on general education students in an inclusive setting in reading and mathematics compared to a purely general education classroom.</p>	<p>St. John, 2015</p> <p>This study showed that general education students in Grades 6-8 scored lower on their ELA and Math NYS Exams when they were placed in a co-taught inclusive setting scored lower than general education students who were not in a co-taught inclusive setting</p>

Table 5.4. Neutral results for quantitative studies for general education students in an inclusive setting.

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Sharpe, York, & Knight, 1994

This study showed that general education students did not show a decrease in standardized test scores or in report card grades.

McDonnell, Thorson, Disher, Buckner, Mendel, & Ray, 2003

The study showed that the Reading/Language Arts and Math assessment scores for general education students in an inclusive setting did not show any difference compared to general education students in a purely general education class.

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The New York State Regents exams are an integral component for New York high school students because it is tied to graduation. The results of this study reject the null hypotheses for the Global History, United States History, and the English Regents exams, where passing rates and mastery rates for general education students were significantly lower for those general education students placed in inclusion classes compared to those general education students placed in purely general education classes. With these results, the administration in a high school can make effective changes to promote more learning growth for general education students participating in inclusion classes. “Administrators, because of their leadership positions were viewed as playing a significant role in the success or failure of mainstreaming” (Berryman, 1989, p.284). The support of the administration can impact co-teaching partnerships, student schedules, planning time, and professional development to support all students. Majority of educators who experience the co-teaching experience, have a positive attitude toward inclusion. Administration can influence these educators to be aware of the balance of attention given to the special education student population compared to the general



education population. The administration and educators need to be conscious and proactive about this balance.

Court cases, federal regulations, and studies that have contributed to the debate of inclusion during a time of increased diversity of people, beliefs, cultures, and academic expectations have been supporting special education students. The inconsistencies and the contradictions in our research findings will continue to support the idea of supporting the general education student experiences. “A significant part of the special education process was represented in the beliefs and action of general education. In an integrated system, special education cannot act independently as a separate system, but must formulate policy in response to the attitudes, perceptions, and behaviors of general education” (Gallagher, 1994, p.283). Balancing the focus on both general education students’ and special education students’ needs are necessary for the learning growth of all students.

### **Limitations of the Study**

Continuing the discussion about the effectiveness of inclusive classes is significant in supporting the growth of all students. One of the limitations is the fact that there is insufficient research in this area of education. The majority of the research is based on qualitative research on the social-emotional needs of special education students and not necessarily on their academic growth (Diamond, 1979; NIUSI, 2005; Staub & Peck 1995). There is even less research on how the inclusive classroom impacts the general education students’ academic growth especially on the secondary level.

“We need more research on inclusion, not less...simplification will only mislead us into adopting untried treatments without the possibility of disserving children”

(MacMillan et al., 1996). With most of the research focused on the elementary level and on the special education students, the research continues to be incomplete. General education students are also impacted in the inclusive setting and their academic growth in these settings also need to be recognized. Without having the complete picture, how we move forward with co-teaching and inclusion may have an adverse effect on all students.

Another limitation in this study is the fact that the data being analyzed only comes from one high school and the data comes from only one year of NYS Regents testing. Regents exams are only a requirement in New York State, so the content and skill level of the exams may not correlate directly with the testing expectations of other states and/or school districts. The results of the data may also not be applicable to other school districts with different school size and with different geographical areas.

School districts also have different protocols in place in terms of how they create their inclusion classes. They may be different protocols and expectations for how special education students are placed, how general education students are placed, and how co-teaching partnerships are created. Having different systems can create varying results in the Regents exam scores.

### **Recommendations for Future Research**

As the inclusion debate continues in the United States and all of the world, research on the impact of inclusion on the general education student population on the secondary level is crucial to not only bring equity to the special education student population, but also to bring equity to those general education students who are being educated in purely general education classes and inclusion classes. “With a growing number of students served and specific provisions in the amendments calling for more

access to the general curriculum for these students, research on inclusive practices is imperative to understand its effects and barriers to overcome” (USDOE, 2009). High school education is much more individualized for students who are trying to meet curriculum expectations and graduation requirements in preparation for their future endeavors. Research needs to continue to improve the support system for all students impacted by the inclusion setting.

The Independent t-test study that was completed using the 2019 Algebra I, Living Environment, Global History, United States History, and English scores comparing passing rate and mastery rates of general education students placed in purely general education classes and general education students placed in inclusion classes should be replicated every year for a longitudinal study to observe any patterns and trends that are positive, negative, or even neutral. Neutral results also make a huge impact because it means that there is no growth and students are performing at a plateau level. This study is simple, with almost immediate data that can produce effective reflection on practices and protocols in each high school. The results are also easy to share with other high schools so that a variety of schools can also work together in a Think Tank format to help each other come up with innovative ideas to support all students.

To add another layer to the study, analyzing gender, Socio-Economic Status, and ethnicity in correlation with the Regents scores can also reveal significant information. According to Sirin (2005), “...impact of SES on school achievement was much higher when the focus was on schools, not individual students” (p. 445). Having meaningful discussion about inclusion and the populations involved in this type of setting in combination while using research and data can help to close that achievement gap. SES

and ethnicity affect all students whether they are special education students or general education students.

As quantitative data is continually gathered in a longitudinal manner, the qualitative data on the impact of inclusion on the general education population should continue to be threaded through in a mixed method format. A mixed method format would work best with a balanced amount of quantitative data to complement it. The thoughts of students, teachers, parents, and educational leaders are a significant component to seeing the big picture.

### **Recommendations for Future Practice**

The passing rates and mastery rates of the 9<sup>th</sup>, 10<sup>th</sup>, and 11<sup>th</sup> graders on the 2019 New York State Regents exams in Algebra I, Living Environment, Global History, United States History, and English, in this study revealed a clear message. The Algebra I and Living Environment passing rates, a score of 65 or higher, for general education students in purely general education classes and general education students in inclusion classes had insignificant results, while on the Global History, United States History, and the English scores showed a significant negative impact on general education students. The mastery rate percentages send an even clearer message that general education students who are placed in inclusion classes are not as successful in achieving mastery, a score of 85 or higher, as general education students who are placed in purely general education classes. Students who attend high schools in New York must pass at least five Regents exams to be eligible to graduate.

The purpose of this study is to investigate the extent to which a high school general education student's participation in an inclusion class impacts their educational

needs using the 2019 New York State Regents exam scores in Algebra I, Living Environment, Global History, United States History, and English. The study indicates that there seems to be a gap in achievement depending on what type of class the general education student is placed in. “To reduce the gap between special and regular students requires both inclusion of special-needs students and effective educational methods for all students” (Baker et al., 1995, p.34).

To have the ability to start to close the gap of academic achievement for general education students who are placed in either purely general education classes or inclusion classes, there should be a collaborative effort to protocols and expectations in a few key areas. Technology will also be able to play an integral part in efficient and accurate communication.

**Table 5.5. Recommendations for Future Practice - Protocols**

Co-teaching Partnerships	<ul style="list-style-type: none"> <li>• A committee with all stakeholders involved can create a protocol for placing co-teaching partnerships in co-taught inclusion classes.</li> <li>• The committee can reflect on past experience and the pros and cons of past practices so set clear goals.</li> <li>• Co-teaching reflections at the end of the school year to see which partnership should/could work together and which partnerships need to be reworked</li> <li>• Prepare and collect research and reach out to other districts to bring together ideas and recreate ideas that would work for the culture of the school</li> </ul>
General Education student inclusion placement	<ul style="list-style-type: none"> <li>• A committee with all stakeholders involved can create a protocol for effective placement of general education students in inclusion classes</li> <li>• Special education representatives should be part of the committee to discuss successes and challenges in the inclusion setting.</li> </ul>

Curriculum Reflection:  
Passing vs. Mastery

- A committee with all stakeholders involved will reflect and discuss curricular expectations
  - Is the goal for our students to pass their Regents exams or to show mastery?
  - Reflecting on what is the true expectation for your students represented in our curriculum?
  - Are there any necessary curricular changes needed to meet the needs of all students?
- 

Using data and research to support any type of collaborative change will assist the teams to stay focused on the purpose and goals the teams will create together. “When the group evolved toward agreeing on their principles, they must both believe in and agree that these are aligned with their perception of the future needs of their school. Doing so enables them to agree on what their actual purpose is” (Bernato, 2016, p.20).

As the world continues to become more connected, so will how we educate all students. Creating an environment where our educational leaders, teachers, parents, and our general education and special education students can benefit socially and academically through a shared leadership and a shared purpose, we can all strive to not just pass, but to achieve mastery. To be able to achieve mastery, the efforts and discussions about student goals and student achievement must be balanced for both the general education student population and the special education student population. Without this balance, it is possible to underestimate the potential of all students placed in the inclusion setting.

The purpose of this study is to investigate the extent to which a high school general education student’s participation in an inclusion class impacts their educational needs using the 2019 Algebra I, Living Environment, Global History, United States

History, and English Regents exam scores. This study will support filling a gap in the research on the impact of inclusion on the general education population on the secondary level. There is much needed quantitative research in this area of education as inclusive education continues to grow in popularity. As educators, we will strive to bring fairness and equity to all of our students. Balancing attention in the inclusion setting is significant to not only to help even the playing field for special education students, but to also guide and challenge the general education student population towards a collective mastery of skills that can be shared with all students.

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