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# The Effects of Inclusion on the Academic Achievement of Regular Education Students

Robert Scott Spence

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THE EFFECTS OF INCLUSION ON THE ACADEMIC ACHIEVEMENT OF  
REGULAR EDUCATION STUDENTS

by

ROBERT SCOTT SPENCE

(Under the Direction of Major Professor Linda M. Arthur)

**Abstract**

The academic performance of regular education students placed in an inclusive setting with special education students was compared to the academic performance of regular education students not placed in an inclusive setting. Criterion Referenced Competency Test results in mathematics and reading for middle school students were used to define academic achievement. Demographic identifiers of race and gender were also included. A causal-comparative research design was used for this quantitative study. The data were analyzed using Analysis of Covariance in order to initially equalize the scores of the two groups of students.

The researcher found no significant difference in the reading achievement of the two groups. In addition, the researcher found no significant difference in the reading achievement of the two groups when race and gender were introduced as factors. There was no significant difference found in the math scores of female, white, or African American students within the boundaries of the study. However, the researcher did find significant differences ( $p < .05$ ) between the math scores of students in the inclusive setting and those not in the inclusive setting. Additionally there was a significant difference ( $p < .05$ ) found in the math achievement of male students in the inclusive setting

and those in the non-inclusive setting. In both instances, students in the non-inclusive classrooms scored significantly higher than students in the inclusive setting.

**INDEX WORDS:** Special education inclusion, Inclusion, Special education collaboration, Special education co-teaching, Academic achievement of regular education students, Effects of Inclusion, Effects of co-teaching, Effects of special education collaboration, Effects of special education practices, Math achievement, Reading Achievement

THE EFFECTS OF INCLUSION ON THE ACADEMIC ACHIEVEMENT OF  
REGULAR EDUCATION STUDENTS

by

ROBERT SCOTT SPENCE

B.S., Valdosta State University, 1990

M.Ed., Georgia Southern University, 1999

Ed.S, Georgia Southern University, 2004

A Dissertation Submitted to the Graduate Faculty of Georgia Southern University in  
Partial Fulfillment of the Requirements for the Degree

DOCTOR OF EDUCATION

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ROBERT SCOTT SPENCE

Major Professor: Linda Arthur

Committee: Paul Brinson  
Ralph Gornto

Electronic Version Approved:  
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### **Dedication**

This dissertation is dedicated to my wife, Charlene, who has provided both support and encouragement throughout this entire process; to my children, Emily and Sarah, for giving up their daddy on so many occasions so he could take the time to produce this document; to my mother, Mary Alice Spence, no matter where I go the memories of your love and tender care will always be with me; and finally to my father, Bobby Spence, for being the rock in my life and teaching me how to be a father, husband, and man with you as the example.

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## Chapter I

The No Child Left Behind Act of 2001 (NCLB, 2002) states that all students must meet state measured academic proficiencies by the 2013-2014 school year. According to NCLB, students with disabilities are to be included in state assessments with appropriate accommodations as determined by each student's Individualized Education Plan (IEP) team. Students with disabilities must also meet the minimum requirements. Student subgroups are categorized by race, ethnicity, limited English proficiency, socioeconomic status, and disability. Each student subgroup, as well as the student population as a whole, must meet the state's annual measurable objective in order to make Adequate Yearly Progress (AYP) as set forth by NCLB legislation.

The requirements of NCLB have placed increased demands on teachers and educational leaders. Because the satisfactory performance of students in all subgroups is required to meet the standards of NCLB, administrators, schools, and school systems often find themselves being judged based on the performance of a subgroup of students which makes up approximately 10% of the student population (Pardini, 2002). Therefore, since the onset of NCLB, educational leaders have increasingly searched for ways to improve the academic achievement of students, especially those students belonging to the students with disabilities (SWD) subgroup.

Inclusionary practices for special education students have increased dramatically during the past 15 years (Burnstein, 2004). Although inclusion is not specifically defined in The Individuals with Disabilities Education Act of 2004 (IDEA, 2004), the law does state that students with disabilities should be educated in the least restrictive environment. The least restrictive environment is commonly considered to be the general

education classroom, to the maximum extent possible. In other words, inclusion is considered to be the general education classroom where students with and without disabilities are served together. In most instances, an inclusive classroom will have one regular education teacher and one full-time special education teacher. Other terms typically used synonymously with inclusion are co-teaching, collaboration, and team teaching (Sandholtz, 2000).

Special education students placed in regular education classes have shown higher academic performance and better social skills than comparable students in non-inclusive classrooms (McCarty, 2006). There is very little existing research regarding whether this success comes at a cost to the education of the general education students in the inclusive setting. While there is an abundance of literature on the achievement of special education students in inclusion classrooms, there is little information available on the achievement of the regular education students in the inclusive classroom setting. The purpose of this study is to examine the relationships between the academic performance of regular education students placed in an inclusive setting with special education students and the academic performance of regular education students in a non-inclusive academic setting.

## **Background**

In order to examine the effects of the inclusive setting on the academic achievement of general education student it is important to review the road traveled by special educators to arrive at the current place and time in history. During the 20<sup>th</sup> century, educating students with disabilities continually evolved. Since the introduction of NCLB, teachers and school administrators have been held to a higher level of accountability and have been searching for ways to improve the academic performance of

all students. In this background section, the author will provide a brief history of special education and also report findings on the advantages and disadvantages of self contained education, mainstreaming, and inclusion. Finally, the findings from recent studies on academic achievement of students in inclusive settings will be examined in order to form a central framework for the research project.

### **Brief History of Special Education Legislation.**

Even though there had been compulsory education laws in place since 1918, many children with disabilities were excluded from public education during most of the twentieth century (Yell, Rogers, & Rogers, 1998). Most of the time parents were given two options for children with disabilities: keep them at home or have them institutionalized. As early as 1933, parents began forming special education advocacy groups, and those groups became the primary voice for students with disabilities (Pardini, 2002). Laws that were put into place for minority students during the Civil Rights Movement would eventually create the framework for special education laws that would soon follow (Yell, Rogers, & Rogers, 1998).

In 1954, the Supreme Court of the United States extended equal protection under the law to minorities (*Brown v. Board*, 1954). *Brown v. Board* was used by special education advocacy groups to pave the way for common protections for students with disabilities. As a direct result, parents of children with disabilities were no longer forced to keep their children at home or have them institutionalized. *Brown v. Board* required schools to serve all students. Instead of serving students in the general population, schools simply placed all special education students in very restrictive environments and thus allowing the students little contact with the general student population.



Congress passed the Education for All Handicapped Children Act in 1975. The law was better known as Public Law 94-142, and required public schools to provide students with disabilities a free and appropriate education. Furthermore, Public Law 94-142 called for school districts to provide the schooling in the least restrictive environment possible. In 1990, the law was reauthorized by Congress and renamed the Individuals with Disabilities Education Act (IDEA). Under the conditions of IDEA, students were assigned to small classes where specially trained teachers tailored lessons to each student's needs. Schools were also required to provide additional services deemed necessary in order for special education students to reach their full potential (Yell, Rogers, & Rogers, 1998).

IDEA was reauthorized again in 2004. The IDEA of 2004 placed a renewed emphasis on the importance of the regular classroom teacher and the general education curriculum as the primary focus of special education. In addition, the IDEA of 2004 combined portions of NCLB to stress the importance that every child must have goals to enable the child to be involved in and make progress in the general education curriculum.

Only 20% of all children with disabilities were educated in the public schools before Public Law 94-142 was enacted (National Council on Disabilities [NCD], 2000). During the second half of the twentieth century, the public school system in America was commissioned by the court system to educate all students regardless of race, ethnicity, or disability in an equitable and consistent manner. As a direct result of these sanctions, services were provided to special education students in three major ways: self-contained classroom, mainstreaming, and inclusion. Although the frameworks have beginnings that

can be described as ascending with time, each is still used in some form or fashion in today's educational systems throughout the United States (NCD, 2000).

### **Self-Contained Special Education.**

Placement in a self-contained classroom essentially removes a child from the general school population for all academic subjects to work in a small controlled setting with a special education teacher. During the middle portion of the twentieth century, the vast majorities of special education students were placed in self-contained classrooms or specialized schools with other special education students. Research has shown that there was "very limited" academic improvement on standardized or curriculum based measures for students in self-contained classrooms or students attending specialized self-contained schools (Lane, 2005).

A review of the literature revealed two major disadvantages to serving students in a self-contained classroom. Children served in a self-contained classroom were rarely able to observe positive student role models in the setting. Students in self-contained settings were usually placed in the setting with other students with common disabilities (Lane, 2005). Therefore, students with emotional behavior problems who were placed in the same room for the entire day with other students with the same behavior problems may have had no positive behavior student role model in the room. Second, subject matter discussions may be severely reduced in a self-contained classroom or specialized self-contained school setting (Lane, 2005). While other students in the general education classroom were commonly found to have an instructor who was certified in the respective subject area to teach the class, a student in a self-contained classroom would have had an instructor who was probably not certified in the subject area (Lane, 2005).

Sacks (2008) found two profound benefits to serving special education students in a self-contained classroom. First, special education students served in a self-contained classroom did not inhibit the learning of others. While this may seem self serving to general education students, teachers, and parents, the simple reality is that students with severe emotional behavior or learning difficulties may inhibit the learning of other students when placed in a regular classroom setting. Secondly, special education students served in a self-contained classroom were able to receive large daily blocks of instructional time for intensive individual and small-group assistance.

Given that both advantages and disadvantages to serving special education students in a self-contained classroom have been cited; the question of placement should be answered based on each child's particular need. Some students needed the structure, routine, and security that accompanied being placed in a self-contained classroom or school setting, while others needed the stimulation of a more stringent subject area instructor combined with the positive effects of student role models found in the regular classroom setting (British Columbia Teachers Federation [BCTF], 2006).

### **Mainstreaming.**

Public Law 94-142 called for the placement of special education students in the least restrictive environment. Since the majority of special education students were being educated in self-contained classroom settings or self-contained schools, many advocates for students with disabilities felt that the rules outlined in Public Law 94-142 were not being followed as intended. The idea of mainstreaming came about as a result of the efforts of those advocates (Yell, Rogers, & Rogers 1998). Mainstreaming is a term that refers to the practice of educating students with disabilities in a regular education

classroom during specified portions of the school day. A student who is mainstreamed will spend part of the day in a self-contained classroom and the other portion in a regular education classroom. Therefore, mainstreaming is different than self-containing in that the student will not spend the entire day in the same room with other students with disabilities.

The research cited several benefits to mainstreaming students with disabilities into the regular education classroom. Mainstreaming was found to be more academically effective for special education students than the exclusionary practices found in self-containing (Shultz, 2001). Also, disabled students who were included in the regular classroom setting proved to be more confident and displayed qualities of raised self-efficacy (National Research Center on Learning Disabilities [NRCLD], n.d.). Next, special education students who were educated in any kind of mainstreaming practice learned social skills that they may not have been exposed to, had a better understanding of the world around them, and felt as if they were a part of the regular community (Wolfberg, 1999). There was also a benefit that was cited for regular education students who were exposed to the mainstreaming process. Many educators believed that educating non-disabled students with disabled students created an understanding and tolerance within the non-disabled student that better prepared them to function in the world outside of the school setting (Suomi, 2003).

Disadvantages to mainstreaming have also been found. According to Suomi (2003), students who were mainstreamed may have felt socially rejected in comparison to the other students. Mainstreamed students are not fully included in the regular academic setting and may feel a sense of embarrassment as other students begin to realize that they

are not present in the classroom during each segment of the day. Second, some were found to believe that the regular education teacher did not possess the necessary training to accommodate the special needs of the special education student in the regular classroom setting. Finally, there were difficulties to accommodating the needs of special education students while at the same time challenging the other students in the mainstreamed classroom. These difficult situations could lead to classroom disruptions from the regular education students and less effective instructional strategies from the regular education teacher (Sacks, 2008).

After reviewing the literature, it seems the question of placement always comes to the forefront. When deciding to place a student into a mainstreamed classroom, educators must take into account the advantages of disadvantages of mainstreaming. The IEP placement committee must decide upon the best way to serve each individual student in the most effective possible manner, weighing the consequences that come with mainstreaming against the positive effects that such a placement would hold.

### **Inclusion.**

Providing learning opportunities for students with disabilities in the public school system has changed dramatically in the past 50 years. While most disabled students were not allowed to enter public schools before 1950, educators today have found themselves including these students in the regular education settings for the majority of the school day (Idol, 2006). This inclusion of special education students into the regular education setting has often been mistaken for mainstreaming. However, there are distinct differences between inclusion and mainstreaming. First, students who are mainstreamed are sent from the special education classroom to the regular education classroom at some

point during the day for a determined period of time. On the other hand, inclusion focuses on keeping the special education student in the regular classroom for nearly the entire day. Teacher responsibility also differs between mainstreaming and inclusion. In mainstreaming, the regular education teacher plans and delivers primary learning activities while the special education teacher consults with the regular education teacher in order to indirectly influence plans for the mainstreamed student. In an inclusive setting, the inclusion teacher should collaborate with the regular classroom teacher to develop and implement cooperatively a broad range of learning activities and teaching strategies within the classroom. Finally, the special education teacher is usually not a part of the mainstreamed classroom. In an inclusive classroom, the special education teacher should function with joint responsibility in the classroom setting with the regular education teacher (Schultz, 2001).

Research has shown definite advantages to inclusion programs for special education students found in the literature. Inclusion facilitated a more appropriate social behavior because of higher expectations in the general education classroom (British Columbia Teachers Federation [BCTF], 2006). The inclusion classroom also offered a higher circle of support including social support from classmates without disabilities (Shultz, 2001). The more a child was included in the general school population, the less likely the child would miss important social events going on in the class, after school and on the weekends. Finally, inclusion improved the ability of students and teachers to adapt to different teaching and learning styles (BCTF, 2006). Research has shown that regular education students may also find advantages in the inclusive setting. Inclusion offers the regular education student the obvious advantage of having an extra teacher or

paraprofessional to help them with the development of their own skills. In addition, inclusion led to a greater acceptance of students with disabilities and promoted better understanding of the similarities among students with and without disabilities (Murawski, 2006).

The research provided three barriers to educating students with disabilities in an inclusive setting: attitudes, knowledge, and organization (BCTF, 2006). The attitudes of both the special education teacher and the regular education teacher could have had a negative impact on inclusion. Both parties must be willing to work together and the collaboration that comes with inclusion calls for a shift in control of the learning environment. Perceived lack of knowledge was also shown to be a barrier to inclusion. Regular education teachers were found to feel inadequately trained to work with special education students, while the special education teacher had common feeling towards the content knowledge of the regular education teacher (Isherwood & Barger-Anderson, 2008). Finally, school administrators were found to have organizational problems when using the inclusion approach in the school setting. Administrators found staffing, managing, evaluating, and scheduling for inclusion created barriers that forced negative feelings towards inclusion of special education students in the regular education classroom (Isherwood & Barger-Anderson, 2008).

One must understand that social and academic barriers may exist in any collaborative classroom. However, the most current language of the federal mandate concerning inclusive education comes from the 1997 Amendments to the IDEA (Idol, 2006). These federal regulations included rulings that guide the regulation. The IDEA required that children with disabilities be educated in regular education classrooms unless

the nature and severity of the disability was such that education in the regular classes with the use of supplementary aids and services could not be achieved satisfactorily. This meant that schools had a duty to include students with disabilities in the regular general education classes (Idol, 2006).

### **Research on Academic Achievement.**

According to Villa, Nevin, and Liston (2005), more students with disabilities than ever before were being educated in a general education classroom. The three researchers also cited improved access to curriculum, instruction and assessment as leading to greater student achievement outcomes for students with disabilities. Mastropieri and Scruggs (2004) reported research having suggested that inclusion was generally accepted by teachers but there was little quantitative data to back up the acceptance. Research has been primarily focused on the experiences of the general education teacher and special education teacher working together in the inclusive classroom, including the various ways schools tended to implement inclusive teaching models and teacher perceptions and beliefs on inclusive education practices (Neugebauer, 2008).

There have been few studies completed concerning the academic achievement of regular education students in an inclusive classroom setting with special education students. The overwhelming majority of the research is qualitative in nature. These studies were based on opinions, beliefs, and feelings of teachers, parents, and students concerning the effects of inclusionary practices on the academic achievement of regular education students. Neugebauer (2008) examined the relationship that existed between regular education students in inclusive high school science and social studies classes and their counterparts in the general science and social studies classes. The results of the



quantitative study determined that regular education students in a regular setting performed at higher levels on the Texas Assessment of Knowledge and Skills (TAKS) in science and social studies than the regular education students in inclusive settings. Neugebauer (2008) recommended further research on the topic.

### **Conclusion.**

Educating special education students has been a topic of concern for educators for the past century. Educational reform laws have forced educational leaders to provide services for students with disabilities that they probably otherwise would not have. Advantages and disadvantages have been cited for the educational practices of self-containment, mainstreaming, and inclusion. The vast majority of the research has concentrated efforts on the achievement of the special education students in such environments. There are few studies in existence that were organized to find the effects of special education practices on the achievement of regular education students. The purpose of this study will be to determine the effects of inclusion on the academic achievement of regular education middle school students in the inclusion classroom.

### **Statement of the Problem**

Federal legislations such as Public Law 94-192 and the Individuals with Disabilities Education Act of 1990 have forced public educators to provide educational services that were free, appropriate, and least restrictive. Educational administrators have served students in educational settings by isolating them in self-contained classrooms, mainstreaming them into general education classrooms for short periods during the school day, and including them in the general education classroom for the vast majority

of the day. There is no doubt that the research completed on special education teaching methods and special education student achievement is vast and exhaustive.

Research has shown mixed results in terms of the effects on the academic achievement of special education students in an inclusive setting. However, as a result of NCLB many school administrators have increased the implementation of inclusive practices for special education students, because the model provides the student with a general education teacher and a special education teacher in the same classroom. The practice would seem to provide the best of both worlds for special education students, because the general education teacher provides the subject area knowledge and the special education teacher provides focus for the specific student disability.

While there is a preponderance of research on educating students with disabilities in an inclusive classroom, there is very little research in existence concerning the regular education student in that same inclusive classroom. The research cited in this overview of literature has documented a gap in the literature. No research could be found on academic achievement of regular education, middle school students in an inclusive setting. Furthermore, Neugebauer (2008) recommended in her dissertation completed in May of 2008 that a replication of her study be completed in other subjects and grade levels to find if the results of the study concur with her findings. Therefore, the focus of this study will be to examine the effect of inclusion on the academic achievement of regular education middle school students.

### **Research Question**

In order to research the effects of inclusion on the academic achievement of regular education students being placed in an inclusive setting with special education

students, this study will be guided by the following overarching research question: What is the effect of inclusion on the academic achievement of general education students?

Consequently there will be four underlying research questions.

1. To what extent do regular education students in inclusive classes demonstrate similar academic achievement in mathematics as regular education students not in inclusive classes?
2. To what extent do regular education students in inclusive classes demonstrate similar academic achievement in reading as regular education students not in inclusive classes?
3. To what extent do regular education students in inclusive classes demonstrate similar academic achievement in mathematics as regular education students not in inclusive classes when race and gender are introduced as factors?
4. To what extent do regular education students in inclusive classes demonstrate similar academic achievement in reading as regular education students not in inclusive classes when race and gender are introduced as factors?

### **Significance of the Study**

NCLB has forced educators to continue to search for effective strategies to increase the academic achievement of special education students. Including special education students in the regular academic setting with regular education students, a regular education teacher, and a special education teacher has been found to improve the academic performance of special education students. Is there a cost to the use of these inclusionary practices? Does the academic performance of the regular education students in the inclusion classroom with the special education students suffer as a result?

The researcher has found only one quantitative study in existence on the effects of inclusion on the academic performance of regular education students. Neugebauer (2008) found that regular education high school students in an inclusive social studies and science classroom scored lower than regular education high school students in regular science and social studies classrooms on the TAKS. This study will add to the professional literature by focusing on the academic achievement of regular mathematics and reading students in middle grades assigned to inclusive classrooms. This study will also assist educators by providing concrete data on the effects of inclusion to the academic achievement of regular education students assigned to inclusion classrooms with special education students.

## **Procedures**

### **Research Design.**

To determine the effect of placement in an inclusive classroom on the academic achievement of regular education students, the researcher will utilize a causal-comparative research study. For the purpose of this study, student achievement will be measured by the CRCT scaled score of middle school students in mathematics and reading. Causal-comparative research is a quantitative approach and a type of non-experimental investigation in which researchers seek to identify cause and effect relationships (Gall, Gall, & Borg, 2007). The presumed cause, in this case student placement into the inclusive classroom setting, will be the independent variable. The presumed effect, in this case student achievement, will be the dependent variable. This study will be an ex post facto research design. The term ex post facto research is derived from Latin meaning “from that which is done afterward” that refers to quantitative

research where causes are studied after they presumably have exerted their effect on the variable of interest (Gall, Gall, & Borg, 2007). The ex post facto research design will be used for two reasons. First, the groups will be formed before the research begins. Second, manipulating the independent variable, in this case assignment of the inclusion classes will not be a possibility.

### **Sample and Sampling.**

Convenience sampling is defined as a group of cases that are selected simply because they are easy to access (Gall, Gall, & Borg, 2007). For the purposes of this study, convenience sampling will be used to select the sample population. The sample population will be drawn from middle school students within the confines of a medium-sized school system in southeast Georgia. The sample group in this study will be the total population of middle school regular education students assigned to inclusive classes combined with the regular education students in non inclusive classes who are assigned to the same regular education teacher. Students meeting the criteria from each of the middle schools during the 2007-2008 and 2008-2009 school years within the school system will be part of the sample. There will be approximately 300 students in the sample population, more than 100 students in each group to be compared. This population will total more than the required amount for causal-comparative research designs. According to Gall, Gall and Borg (2007), in causal-comparative research, there should be at least 15 participants in each group to be compared.

All principals from the middle schools within the school system will be contacted via a personal meeting and an oral request for student information will be presented. The student information requested will be class rosters for inclusive classes within the school,

class rosters for regular education teachers working in inclusive classrooms, and CRCT test results in mathematics and reading for all regular education students on the class rosters. The researcher is an administrator at one of the middle schools and has a personal relationship with the other school leaders; therefore, full compliance by the middle school principals is expected.

### **Instrument.**

The Criterion-Referenced Competency Test (CRCT) scores will be used to measure academic achievement. The CRCT is designed to measure how well students acquire, learn, and accomplish the knowledge and skills set forth in a specific curriculum or unit of instruction (Georgia Department of Education, 2009). For students in Georgia, the CRCT is designed to measure how well students acquire the skills and knowledge described in the Georgia Performance Standards (GPS). Each middle school student in the state of Georgia must complete the CRCT near the end of each year in the subjects of math, reading, language arts, social studies, and science. For the purpose of this study, the scaled score results from the math and reading CRCT will be used to define student achievement. Efforts will be made to determine the reliability and validity measures for the CRCT.

### **Data Collection.**

After permission is granted by school principals, data will be collected using the school system information data base, Infinite Campus. Data will be collected directly from Infinite Campus without contact with students. Student names will be used only for sorting class designation and test results. A separate data base will be created using

numerical codes for student names and pairing those codes with classroom assignments and CRCT results.

### **Data Analysis.**

Since quantitative data are the most appropriate for comparing the outcomes for two groups, descriptive and inferential statistics will be utilized. Descriptive statistics are used to summarize, organize, and display sets of numerical data (Gall, Borg, & Gall, 2007). The term inferential statistics refers to a set of mathematical procedures for using probabilities and information about a sample in order to draw conclusions about the population from which the sample was drawn (Gall, Gall, & Borg).

CRCT results in mathematics and reading from students in each of the two groups will be compared in order to define the spectrum for the dependent variable. In order to remove the teacher as a possible restriction, only students assigned to regular education teachers who currently teach in an inclusive setting will be used in the study. In an effort to initially equalize student test scores, the researcher will use analysis of covariance (ANCOVA) to disaggregate the data. ANCOVA is a statistical procedure used to determine whether the difference between the mean scores of two or more groups on one or more dependent variables is statistically significant, after controlling for one or more extraneous variables (Gall, Gall, & Borg, 2007). In the case of this study, ANCOVA will be used to adjust past CRCT scores for students in the two groups, thus equalizing the groups before the study and providing a more generalizable conclusion. Quantitative data will be analyzed using the Statistical Package for Social Sciences (SPSS). Multiple displays such as charts and tables will be used to present the findings.

**Limitations/Delimitations****Limitations.**

The population will be limited to students in a medium-sized school district in southeast Georgia. The sample of subjects within the school system will limit the ability to generalize the findings and may not be applicable to school districts of different sizes or those located in other geographic locations. Finally, the instructional abilities of the regular education and special education teachers in the inclusive classrooms may have an impact on the results in terms of student achievement and the ability to generalize to other populations.

**Assumptions.**

The researcher will be impartial and objective when collecting and analyzing data. The assessment used in this study to describe student achievement is a reliable and valid instrument. The methodology proposed by the researcher offers the most logical and appropriate design for this research project.

**Delimitations.**

The researcher will use scaled scores from the CRCT in reading and mathematics as student achievement descriptors. Student data will be collected for regular education students enrolled in classes with regular education teachers who teach in an inclusive setting at some point during the day. The sample will be drawn from a population of students in southeast Georgia.



## **Definition of Terms**

For the purpose of this study the following operational terminology will be used:

*Adequate Yearly Progress (AYP):* AYP is a process in which states are held accountable and are required to hold local education agencies (LEAs) accountable for developing standards and putting systems in place to ensure that students are able to meet or exceed those standards. States and LEAs are to prove they have done so by assessing the students (Georgia Department of Education, 2009).

*Criterion-Referenced Competency Test (CRCT):* CRCT scaled scores will be used to measure academic achievement. The CRCT is designed to measure how well students acquire, learn, and accomplish the knowledge and skills set forth in a specific curriculum or unit of instruction. For students in Georgia, the CRCT is designed to measure how well students acquire the skills and knowledge described in the Georgia Performance Standards (GPS). Each middle school student in the state of Georgia must complete the CRCT near the end of each year in the subjects of math, reading, language arts, social studies, and science (Georgia Department of Education, 2009).

*Education for All Handicapped Children Act of 1975:* Also known as Public Law 94-142, the law required public schools to provide students with disabilities a free and appropriate education. Furthermore, Public Law 94-142 called for school districts to provide the schooling in the least restrictive environment possible. The law was reauthorized by Congress in 1990 and renamed the Individuals with Disabilities Education Act (IDEA). Under the conditions of IDEA students were assigned to small classes where specially trained teachers tailored lessons to each student's needs. Schools were also required to provide additional services deemed necessary in order for special

education students to reach their full potential. The law was reauthorized again in 2004 to align with the provisions of NCLB.

*Georgia Performance Standards (GPS):* The GPS incorporate the content standard, which simply tells the teacher what a student is expected to know. Additionally, the GPS add to these concepts by providing three additional items: suggested tasks, sample student work, and teacher commentary on that work. The GPS provide clear expectations for instruction, assessment, and student work (Georgia Department of Education, 2009).

*Inclusion:* For the purposes of this study, inclusion is considered to be the general education classroom where students with and without disabilities are served together. Inclusive classrooms will have one regular education teacher and one full-time special education teacher. Other terms typically used synonymously with inclusion are co-teaching, collaboration, and team teaching.

*Individualized Education Plan (IEP):* The IEP is a written plan developed by the schools special education team with input from the parents and regular education teachers. The plan specifies the student's academic goals and the method to obtain these goals. The plan also identifies transition arrangements. The law expects school districts to bring together parents, students, general educators and special educators to make important educational decisions for students with disabilities; those decisions will be reflected in the IEP (Georgia Department of Education, 2009).

*Infinite Campus:* Infinite Campus is an information technology company that provides student data management systems to school districts and states nationwide. The data management system is used to house student information for students and employees of the school system from which the sample population is drawn for this research study.

*Mainstreaming:* A student who is mainstreamed will spend part of the day in a self-contained classroom and the other portion in a regular education classroom (British Columbia Teacher's Federation, 2006).

*No Child Left Behind Act (NCLB):* The NCLB Act was signed by President George Bush on January 8, 2002. The four pillars of this act are: Stronger accountability for results, more freedom for states and communities, proven education methods, and more choices for parents. The NCLB Act is an aggressive attempt to implement higher standards and greater accountability. Key elements in the act include: Additional funding, greater flexibility and resources, greater choice in preferred school attendance, additional special education support, greater funds and supports to improve literacy across the nation and greater teacher quality (Georgia Department of Education, 2009).

*Regular Education Students:* Regular education students are students without an identified disability.

*Self-Contained Classroom:* Placement in a self-contained classroom essentially removes a child from the general school population for all academic subjects to work in a small controlled setting with a special education teacher (British Columbia Teacher's Federation, 2006).

*Special Education Students:* Special education students are students with an identified disability.

## **Summary**

Research has shown mixed results on the academic achievement of special education students in an inclusive setting. While there is a preponderance of research on educating students with disabilities in an inclusive classroom, there is very little research

in existence concerning the regular education student in the same inclusive classroom. The focus of this study will be to examine the effect of inclusion on the academic achievement of regular education middle school students. A convenience sample will be drawn from middle school students within the confines of a medium sized school system in southeast Georgia. The sample group in this study will be the total population of middle school regular education students assigned to inclusive classes combined with the regular education students in non-inclusive classes who are assigned to the same regular education teacher. After permission is granted to collect data from the sample population, CRCT results in mathematics and reading from students in each of the two groups will be compared in order to define the spectrum for the dependent variable. ANCOVA will be used to adjust past CRCT scores for students in the two groups, thus equalizing the groups before the study and providing a more generalizable conclusion. Quantitative data will be analyzed using the Statistical Package for Social Sciences (SPSS). Multiple displays such as charts and tables will be used to present the findings.

## Chapter II

### Review of Literature

Under the No Child Left Behind Act of 2001 (NCLB, 2002), all students, including students with disabilities, must meet state measured academic proficiencies by the 2013-2014 school year. According to NCLB, students with disabilities are to be included in state assessments with appropriate accommodations as determined by each student's Individualized Education Plan (IEP) team. Student subgroups are categorized by race, ethnicity, limited English proficiency, socioeconomic status, and disability. Additionally, each student subgroup, as well as the student population as a whole, must meet the state's annual measurable objective in order to make Adequate Yearly Progress (AYP) as set forth by NCLB legislation.

The requirements of NCLB have placed a tremendous amount of pressure on teachers and educational leaders. Because the satisfactory performance of students in all subgroups is required to meet the standards of NCLB, administrators, schools, and school systems often find themselves being judged based on the performance of a subgroup of students which makes up approximately 10% of the student population (Pardini, 2002). As a result, since the onset of NCLB, educational leaders have continued to search for ways to increase the academic achievement of students, especially those students belonging to the students with disabilities (SWD) subgroup.

Special education inclusion practices have increased dramatically during the past 15 years (Burnstein, 2004). As a direct result of The Individuals with Disabilities in Education Act (IDEA) and NCLB, more students than ever before are receiving special education services in an inclusive setting with regular education students (Rea & Connell,

2005). As a direct result of NCLB, the requirement of nearly all students to meet achievement standards increases the accountability of school and could push toward total inclusion (Bagleri & Knopf, 2004). Inclusion is not specifically defined in IDEA; instead, the law states that students with disabilities should be educated in the least restrictive environment, which is generally considered to be the general education classroom, to the maximum extent possible. Therefore, inclusion is considered to be the general education classroom where students with and without disabilities are served together. In most instances, an inclusive classroom will have one regular education teacher and one full-time special education teacher. Other terms typically used synonymously with inclusion are co-teaching, collaboration, and team teaching (Sandholtz, 2000).

Special education students placed in regular education classes perform better academically and socially than comparable students in non-inclusive classrooms (McCarty, 2006). However, little is known regarding whether this success comes at a cost to the education of the general education students in the inclusive setting. While there is an abundance of literature on the achievement of special education students in inclusion classrooms, there is little information available on the achievement of the regular education students in the inclusive classroom setting. The purpose of this study is to examine the possible relationships between the academic performance of regular education students placed in an inclusive setting with special education students and the academic performance of regular education students in a non-inclusive academic setting.

When examining the effects of the inclusive setting on the academic achievement of general education students, one must review the road traveled by special educators to

arrive at the current place and time in history. During the 20<sup>th</sup> century, educating students with disabilities has changed dramatically. Since the onset of NCLB, teachers and school administrators have been held to a higher level of accountability and have been searching for ways to improve the academic performance of all students. In this review of literature, the author will provide a brief history of special education and inclusive educational practices. Existing quantitative and qualitative research on students with and without disabilities served in inclusive settings will also be presented in this section.

### **Brief History of Special Education Legislation.**

Despite compulsory education laws that had been in place since 1918, many children with disabilities were excluded from public education during most of the twentieth century (Yell, Rogers, & Rogers, 1998). In most instances, parents were given two options for children with disabilities: keep them at home or have them institutionalized. As early as 1933, parents began forming special education advocacy groups and these groups became the primary voice for students with disabilities (Pardini, 2002). Eventually, laws that were put into place for minority students during the Civil Rights Movement would create the framework for special education laws that would soon follow (Yell, Rogers, & Rogers, 1998).

In 1954, the Supreme Court of the United States extended equal protection under the law to minorities (*Brown v. Board*, 1954). This decision was also used by special education advocacy groups to pave the way for similar protections for students with disabilities. Parents of children with disabilities were no longer forced to keep their children at home or have them institutionalized. As a result of the court ruling, schools were required to serve all students. However, in many instances, schools simply placed

all special education students in very restrictive environments allowing the students little contact with the general student population.

In 1975, Congress passed the Education for All Handicapped Children Act. At the time, the law was better known as Public Law 94-142. The law required public schools to provide students with disabilities a free and appropriate education. Furthermore, Public Law 94-142 called for school districts to provide the schooling in the least restrictive environment possible. The law was reauthorized by Congress in 1990 and renamed the Individuals with Disabilities Education Act (IDEA). Under the conditions of IDEA students were assigned to small classes where specially trained teachers tailored lessons to each student's needs. Schools were also required to provide additional services deemed necessary in order for special education students to reach their full potential (Yell, Rogers, & Rogers, 1998).

In 2004, IDEA was again reauthorized. The IDEA of 2004 placed a renewed emphasis on the importance of the regular classroom teacher and the general education curriculum as the primary focus of special education. The IDEA of 2004 also combined portions of NCLB to stress the importance that every child must have goals to enable the child to be involved in and make progress in the general education curriculum.

Before Public Law 94-142 was enacted, only 20% of all children with disabilities were educated in the public schools (National Council on Disabilities [NCD], 2000). During the second half of the twentieth century, the public school system in America was commissioned by the court system to educate all students regardless of race, ethnicity, or disability in an equitable and consistent manner. As a direct result of these sanctions, services were provided to special education students in three major ways: self-contained



classroom, mainstreaming, and inclusion. Although the frameworks have beginnings that can be described as ascending with time, each is still used in some form or fashion in today's educational systems throughout the United States (NCD, 2000).

### **History of Special Education Inclusive Practices.**

Inclusion is considered to be the general education classroom where students with and without disabilities are served together. In most instances, an inclusive classroom will have one regular education teacher and one full time special education teacher. Other terms typically used synonymously with inclusion are co-teaching, collaboration, and team teaching (Sandholtz, 2000). Some researchers have argued that the terms co-teaching, collaboration, and inclusion should not be used synonymously. According to Murawski (2001), each may be a viable service delivery model for students with disabilities, but they are not the same. For inclusion to be possible, students must be provided with special education services within the general education setting (Murawski, 2001). The Wisconsin Education Association Council (WEAC) described inclusion as “a term which expresses commitment to educate each child, to the maximum extent appropriate, in the school and classroom he or she would otherwise attend” (WEAC, 2007). Furthermore, the council stated that inclusion should involve moving the services to the special education student in the regular education setting rather than have the student isolated in a resource room where the services can be delivered. Documented differences in the definition for inclusion among researchers do exist. For the purpose of this study, the term inclusion will be used to describe all special education service delivery models that include special education students in a classroom with regular education students where the curriculum is delivered by a special education teacher and a

regular education teacher.

The origins of including special education students in the regular education environment can be traced to 1973 (Kavale & Forness, 2000). Section 504 of the Rehabilitation Act of 1973 required that schools receiving federal funds place a “handicapped child” in the regular education environment; unless it could be demonstrated by the school that the education in the regular environment with the use of supplementary aides and services cannot be achieved satisfactorily. The roots of special education inclusion began to spread during the early 1980’s with the introduction of the Regular Education Initiative (REI). The REI has been a continuing academic debate about the effectiveness of special education programs for the past 30 years. The debate originated by discussions of staff members during the Reagan administration. These staff members were concerned about the steady increase in the number of students served by schools under PL 94-142. As a result, the movement towards inclusion initiated from a report of the National Academy of Sciences (1982), which concluded that the classification and placement of children in special education was ineffective and discriminatory. The report used terminology in its recommendations that children be given “non-inclusive” or extra placement for special education services, only if the non-inclusive setting demonstrated superior results (Price, Mayfield, McFadden, & Marsh, 2001).

In July of 1990, the Americans with Disabilities Act (ADA) was signed into law. The law extended to people with disabilities the same civil rights enjoyed by others through the Civil Rights Act of 1964. These rights included protection against discrimination on the basis of race, color, sex, national origin, and religion. ADA

provided for protection in employment, public accommodations, telecommunications, and transportation. ADA also required that no qualified individual with a disability, by reason of such disability, be excluded from participation in or be denied the benefits of services, programs, or activities of a public entity. Furthermore, the ADA also required that “reasonable modifications” to the rules, policies, or practices be allowed for the receipt of services or participation in programs or activities provided by a public entity. In 1997, PL 94-142 was reauthorized and signed into law under the title Individuals with Disabilities Education Act Amendments of 1997. The law took the position that students should not be excluded from regular classrooms because of disabilities. IDEA clearly supported the concept of inclusion, with references throughout, indicating the goal of educating children with disabilities with students in general education settings, using the general education curriculum. In addition, IDEA also called for special education students to participate in state and local assessments.

The final piece of the inclusion puzzle came from the No Child Left Behind legislation of 2001. NCLB was firmly anchored in the practice of accountability in schools and did provide for inclusion in the public school setting. NCLB made clear that all children were general education students. According to Sailor (2005), federal policy had recommended inclusion as a practice and the government had provided substantial funding for training, research, and demonstration purposes. With the increased accountability measures of NCLB, educators have been forced to teach all students to the highest attainable standard. In order to obtain the desired outcome, special education students need to be integrated with general education students in an inclusive setting (Sailor, 2005). Students with disabilities have increasingly been afforded access to

regular education classes. According to Kavale and Forness (2000), reports concerning the effectiveness of inclusion have been mixed.

As a direct result of the legislation described, inclusion has become a very popular service delivery model for students with disabilities. However, the research base for inclusion is incomplete and has varying views (Zigmond, 2001). Even with contradicting research, there are justified and researched based reasons for inclusion. First, inclusion is the right of all students and students with disabilities to learn social skills from relationships with peers in the regular education setting. Second, non-disabled students benefit from establishing social relationships with students with disabilities. Finally, inclusion permits friendships among diverse students and all children can learn to understand human differences (Price, Mayfield, McFadden, & Marsh, 2001).

### **Qualitative Research for Students with Disabilities.**

The vast majority of the research available on inclusion is qualitative in nature and is concerned primarily with the beliefs, perceptions, job descriptions, and effective practices of the teaching pairs involved in the inclusive setting. Weiss and Lloyd (2002), examined co-teaching in secondary education classrooms by interviewing and observing special education teachers in inclusive and special education classrooms. The two researchers used qualitative methods to identify noticeable patterns that suggested a description of the roles of the teachers in an inclusive setting. Weiss and Lloyd found that special education teachers take on strikingly different roles in the inclusive setting compared to the special education classroom. The two also found that the roles of the special education teacher in the setting were influenced by pressures from the classroom teacher, school administration, and the professional community.

Weiss and Lloyd (2002) concluded that there was a difference in the theoretical descriptions and expectations between the special education teachers and the regular education teachers in the inclusive settings. There was also a lack of understanding between the special education teachers and the school administration as to the role of the special education teacher in the inclusive classroom. Overall, the inclusive model was implemented as simply a means to get special education students into the regular academic setting with little or no thought of how to use the expertise of the special education teacher in the general education setting.

Two recommendations were provided as a result of the study. First, consideration must be given as to whether special education students can receive the specialized instruction that is needed in an inclusive setting. The inclusive classroom does offer the regular education teacher an opportunity to provide grade level curriculum to all students, but does not necessarily afford the special education teacher an opportunity to utilize the skill set needed for working with students with disabilities. Second, as principals struggle to keep special educators in inclusive classrooms, they must find a way to define the roles of special education teachers in the setting, Weiss and Lloyd (2002) cited several instances of special education teachers serving in roles that could best be described as a paraprofessional. The two recommended that school administrators describe in detail the roles and actions of each of the teachers in the inclusive setting before implementing an inclusive program. Weiss and Lloyd (2002) concluded that the special education students in this particular study did not improve their academic performance when placed in an inclusive setting; although no description of how that performance was determined was provided.

Keefe and Moore (2004), explored the challenges of general and special education teachers who worked together in inclusive settings in a large suburban high school in the southwestern United States. The two researchers used qualitative research techniques to conduct interviews and analyze common themes in order to develop a list of critical themes. The major themes centered on the nature of the collaboration between the teachers, roles and responsibilities, and student outcomes. According to the authors these themes provided insight into the reality of teaching in an inclusive setting.

The first theme that Keefe and Moore introduced was collaboration between the two teachers in the inclusive setting. The two teachers should be compatible, be able to work together, and effectively communicate in the classroom. In addition, the teachers in the inclusive setting should be given the opportunity to plan together at some point during the school day. The second theme that the two researchers found was role perception of each of the teachers. In many instances, the special education teachers reported feeling as if they were being treated with disrespect, not considered as important as the general education teacher. This limited role was found to be a result of the limited content knowledge that the special education teacher might have possessed in comparison with the regular education teacher. In addition, modifications for students with disabilities were seen as a role only for the special education teacher. There were also several cited differences in the grading procedures that were to be used for the students in the classroom. The final theme described by Keefe and Moore was expected student outcomes and the effects that inclusion would have on the students served in the classrooms. Both special education teachers and regular education teachers felt that all students benefited from involvement in the inclusive classroom setting. Although there

was no precise measurement of student achievement, both sets of teachers believed that the special education students performed better in the inclusive setting. Special educators in the study also expressed concern that students with disabilities be looked at on an individual status and felt that inclusion may not be for every special education student.

According to Baglieri and Knopf (2004), NCLB presented a significant challenge to inclusion and its implementation in learning environments. In their report to the *Journal of Learning Disabilities*, the two authors stated that NCLB supports scientific “research based” instructional programs and proven methods. This strong support, according to Baglieri and Knopf, discourages teachers from using the various differentiation strategies in classrooms that can engage and capitalize on the strength of all learners. The authors argued that inclusion without differentiation creates segregated classrooms that force schools into grouping students and does not take into account the individual needs of all students.

Magiera and Zigmond (2005), conducted a study on inclusive classrooms in western New York middle schools. The two stated that there existed little quantitative data regarding the effectiveness of such practices in education. Instead, the study examined whether there was an extra effect of the special education teacher on the instructional experiences of students with disabilities compared to the same students taught by only the general education teacher. The study found that students with disabilities received very little individual attention when taught by only a general education teacher and received a significantly increased amount of individual interaction when a special education teacher was present in an inclusive setting. The two authors

suggested that the middle school team concept provided a ready format for inclusion; but also suggested that the joint effort of the special education teacher and regular education teacher may require initial training and common planning time to implement the model and benefit students. Furthermore, Magiera and Zigmond suggested that both teachers in the inclusive setting must be active instructors in order to provide students with disabilities more opportunities for instructional experiences that may lead to student progress.

Mastropieri, Scruggs, Graetz, Norland, Gardizi, and McDuffie (2005), presented findings in their published report created from several long-term qualitative investigations of inclusive practices in middle school social studies, high school science, and high school world history classes. The researchers reported that in some sites inclusive pairs were provided with research-based effective strategies and materials for including students with disabilities in specific activities. When these strategies were provided, the model was extremely effective and conducive for promoting success for the special education students in the inclusive setting. However, when the strategies were not provided, the model was not nearly as effective.

The researchers also reported three overarching themes to be present in each setting. The factors of academic content knowledge, high stakes testing, and co-teacher compatibility had an impact on the success or failure of the inclusive model. If the content knowledge of the special education teacher was not considered adequate by the regular education teacher, then the role of the special education teacher in the inclusive setting was usually reduced to that of a teacher's aide. When high stakes testing was present, the regular education teacher tended to concentrate on moving through the



specified curriculum rapidly with little concern for the special education students and their individual needs. In these instances, the role of the special education teacher was often reduced as the regular education teacher felt compelled to complete the course of instruction. Finally, the relationship between the special education teacher and the regular education teacher was considered a major component influencing success or failure of the inclusion of students with disabilities. The researchers found when the two teachers were getting along and working well together, students with disabilities were more likely to be successful and have positive experiences in the inclusive environment.

Villa, Thousand, Nevin, and Liston (2005), used field based interviews in secondary and middle school settings, to develop a list of six best practices for inclusive classrooms. According to the researchers, the first essential is administrative support. The school administrator must facilitate inclusive practices by building consensus for a vision, developing educator's skills for inclusive settings, creating incentives for people to change to inclusive classrooms, reorganizing and expanding human resources, and planning and taking actions to help the school community see and get excited about the new vision. Second, there must exist a state of ongoing professional development. This continued learning would allow inclusive educators an opportunity to gain and exchange instructional strategies with other regular and special education teachers working in inclusive environments. Next, there should be collaboration between the special education teachers, regular education teachers and school administration. All three groups should work together instead of having strictly defined job descriptions that each group should maintain. In addition, there should be an open line of communication among the teaching staff that provides a foundation of trust needed for teaching

partnerships. According to the researchers, general educators provide the content knowledge and special educators provide the instructional strategies for dealing with students with disabilities. This in turn would allow for “instructional responsiveness”; the sharing of responsibility by all members of the inclusive setting in order to address the individual learning needs of all. The final part of the best practices list is expanded authentic assessment approaches. Instead of using results from standardized assessments as the only indicator of student achievement, educators in inclusive classrooms should search for alternative assessments which are to be used to evaluate the “whole” child.

### **Quantitative Research for Students with Disabilities.**

Zigmond (2001) posed the question, “What happened to our commitment to empirically based strategies and data driven decision-making at all levels of the special education enterprise?” When preparing this review of literature, the researcher found little quantitative analysis on the effects of inclusion on the academic achievement of regular education students. Although there was not an abundance of information available on the effects of inclusion on the performance of special education students, there was considerably more than the information available for regular education student achievement. In this section of the review of literature, a description of the available quantitative research will be summarized.

Rea, McLaughlin, and Walther-Thomas (2002) investigated the relationship between placement in inclusive and non-inclusive special education programs. The researchers also investigated the academic and behavioral outcomes for students with specific learning disabilities in the middle school setting. The results of the quantitative piece of the study indicated that the two programs differed significantly. Students served

in the inclusive classrooms earned higher grades, achieved equal or greater scores on standardized tests, committed no more behavior infractions, and had better school attendance than students in the non-inclusive program.

Henning and Mitchell (2002) explored the experience and attitudes of two teacher education graduate students at Pennsylvania State University. One of the students was in early childhood special education and the other in social studies education. The teachers were given a Likert scale test to measure their attitudes concerning working with children with disabilities in an inclusive setting. The test was given on two occasions; before and after receiving training on inclusive education. An independent t test was calculated and the results revealed that the attitudes of the teachers in regards to working in an inclusive setting with special education students improved after exposure to inclusion preparation training.

The input of teachers has been viewed as a valuable component when evaluating inclusion programs. According to Cook, Tankersly, Cook & Landrum (2000), although it has not been empirically demonstrated that positive teacher attitudes toward the concept of inclusion will improve outcomes for special education students, researchers continue to study teacher attitudes towards the special education students in inclusive settings. Wischnowski, Salmon, and Eaton (2004), described the efforts of a school district in western New York to implement inclusive practices at the elementary and middle school levels. The researchers collected data over a two year period on student achievement, behavior referrals, and student self-concept. In terms of student achievement, the researchers found comparisons difficult to make based on state mandated testing; but that students with disabilities were not any less successful in inclusive settings, than when

taught in more restrictive environments. Behavior referrals were reviewed and the researchers found that special needs students accounted for nearly 60% of the total referrals for the inclusive classes. According to the researchers, the information suggests that inclusive settings may not be the best for all students. A major issue that has continued to create concern for inclusive education is that of possible harm done to regular education students being exposed to inappropriate social behaviors. The researchers concluded that behavioral issues do have an impact on the academic success of all students in the inclusive process. Finally, student self-concept was measured based on the classification of general or special education. The researchers reported no significant differences in the self concept between general and special education students in the inclusive setting.

Murawski (2006) conducted research at an urban high school near Los Angeles, California. In the study, general and special educators at the secondary school taught ninth grade English in mainstreaming, inclusive, and special education student only settings. The academic outcomes in reading and writing assessments for the special education students in the inclusive settings were compared to the outcomes for special education students in the other two settings. There were no significant differences found between the three frameworks. The researchers suggested that the teaching pairs in the inclusive setting may have been lacking some of the vital components cited in the literature as critical to the success of an inclusive classroom setting. Those missing components were reported by the researchers as common planning, parity, and the use of varied instructional models. In reviewing data relating to academic ability of special education students educated in inclusive settings for more than eighteen months, Kemp

and Carter (2006) found a positive and statistically significant relationship between the academic skills of a special education student in an inclusive setting and the regular education teacher's perception of those skills.

Castro (2007) provided information on the academic effects of inclusion on the performance of students with disabilities. TerraNova test scores for first and second grade children attending school in a northern public school district in New Jersey were compared. The study focused on two groups of students; special education students in inclusive settings and special education students not in inclusive settings. The researcher also compared attendance rates of the two groups as well as teacher job satisfaction. Castro cited two conclusions for the quantitative study. First, the academic performance as measured by the TerraNova test was significantly better for students with disabilities in the inclusive setting. The attendance rate of special education students in the inclusive setting was also significantly higher than the attendance of students in the non-inclusive setting. Furthermore, the researcher found no significant difference in the job satisfaction of teachers in inclusive settings compared to teachers in non-inclusive special education settings or non-inclusive regular education settings. Castro concluded by stating that the inclusive setting must have increased professional dialogue and administrative support for the teachers involved in the setting.

Fore, Burke, Burke, Boon, and Smith (2008) examined the academic performance of students with learning disabilities in inclusive settings. The researchers collected data from fifty-seven high school students from two high schools in the southeastern United States. Reading and math scores from the Multilevel Academic Survey Test (MAST) were examined relative to grade level, number of special education classes attended, and

placement in inclusive or non-inclusive settings. The results revealed no statistically significant difference in the student achievement based on the MAST scores, for special education students in non-inclusive settings compared to special education students in inclusive settings. The only notable achievement differences were found for special education students in an inclusive literature class compared to those students placed in a special education class for literature. In this case, the students in the inclusive setting performed significantly better than the students in the non-inclusive setting.

### **Qualitative Research for Regular Education Students.**

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 advances the educational progress of that child (Korenich & Salisbury, 2006). There are few studies which provided information in regards to regular education students placed in the inclusive setting. Kavale and Forness (2000) analyzed the history of the inclusive debate and cited conflicting conclusions from research centered on regular education teachers and regular education students. The two researchers cited several qualitative research reports that showed general education teachers having both negative and positive attitudes about working in inclusive settings with students with disabilities. The attitudes of general education students towards students with disabilities in the inclusive setting were also found to be inconsistent. Kavale and Forness reported that the attitude of general education students towards special education students in the inclusive setting was usually found to turn negative when the special education students demonstrated “atypical behavior” (2000).

Keefe and Moore (2004) conducted a qualitative study in inclusive classrooms at

a large suburban high school in the southwestern United States. Using a series of interviews and observations of special education and regular education teachers, the two researchers cited student outcomes for the regular education students. Although the majority of the findings were based on the outcomes for special education students, the researchers found that regular education students benefited from the individualized help and modifications through collaboration between the special and regular education teachers. The general education teachers in the study reported no negative outcomes for students with or without disabilities.

Burstein, Sears, Wilcoxon, Cabello, and Spagna (2004) documented the impact of inclusive practices for general education students in two southern California school districts. Through interviews with regular education and special education teachers, parents, and administrators, the researchers cited several positive outcomes for regular education students in inclusive settings. First, the researchers documented an improvement in the overall school climate, as regular education students learned to appreciate differences and take pride in assisting other students. Second, the regular education students benefited academically from the variety of teaching methods and supports provided by the special education teacher in the inclusive classroom. Finally, the regular education students were found to have more opportunities to be leaders and mentors for the students with disabilities in the class.

Mostropieri, Scruggs, Graetz, Norland, Gardizi, and McDuffie (2005) discussed the findings from several long-term qualitative investigations from inclusive science and social studies classrooms. The case studies were performed in middle school and high school settings. The results were mixed. When partnering teachers in the inclusive

setting were given an opportunity to plan together and displayed positive relationships with each other, there was a noted positive academic achievement for regular education students in the inclusive setting. When partnering teachers were not considered compatible, the researchers did not find positive academic achievement for regular education students and cited classroom management problems as a negative outcome. It must be noted that there was no mention in the article of how student achievement was measured.

In reviewing the literature, the researcher was able to find very little research on the academic performance of regular education students in an inclusive setting. The majority of the existing research consisted of two reoccurring themes: performance of special education students and successful instructional strategies for inclusive settings. Worrell (2008) discussed seven barriers to successful implementation of inclusive practices in secondary schools. According to Worrell, the issues of negative teacher perspectives, lack of knowledge regarding special education terminology, issues and laws, poor collaboration skills, lack of administrative support, limited instructional repertoire, inappropriate assessment procedures, and conflict between scheduling and time management must be addressed before successful inclusion can be implemented.

### **Quantitative Research for Regular Education Students.**

The purpose of this study is to quantitatively examine the possible relationship between the academic performance of regular education students placed in an inclusive setting with special education students and the performance of regular education students in non-inclusive settings. An exhaustive search of related literature returned only three quantitative studies concerning the effects of inclusion on the academic performance of



the regular education students in the inclusive classroom. The final section of this literature review will be dedicated to the results and findings of those three quantitative studies.

Korenich and Fox (2006), in partnering with the U.S. Department of Education and the University of Illinois –Chicago, collected data from three school districts in Illinois, Missouri, and Pennsylvania. The three districts varied in racial composition, economics, size, locale, and special education services. The study was only focused on students without disabilities in grades 3, 4, and 5 who were placed in inclusive settings with special education students. According to the researchers, the data collected and analyzed suggested no negative effects on instruction due to the presence of students with disabilities in the class. In terms of academic achievement, the researcher collected four types of data: report card grades from reading, math, social studies, and science; national percentile rank from standardized test scores; student work samples from writing and math; and teacher rating scales on academic competence of the students. Korenich and Fox (2006) found no negative effects on the academic achievement of regular education students as a result of being placed in an inclusive classroom with special education students.

In another study of interest, Castro (2007) provided information on the academic achievement of regular education students placed in inclusive classrooms in a northern public school district in the State of New Jersey. The researcher analyzed TerraNova test scores for two years for all students in the district. Test scores were compared for first and second graders based on their academic setting of inclusive versus non-inclusive. Castro (2007) concluded that the academic performance of regular education students in

an inclusive setting with special education students was significantly better than the academic performance of the regular education students in non-inclusive settings. The researcher also noted that during the same time period, the attendance rate for regular education students in inclusive settings was significantly higher than the rate for the regular education students in non-inclusive settings.

The most current piece of quantitative literature found on the academic achievement of regular education students in inclusive settings was a dissertation written by a doctoral student at Texas A&M University. Neugebauer (2008) examined the relationship between the academic performance of regular education students in inclusive high school science and social studies classes and their counterparts in the general science and social studies classes. The Texas Assessment of Knowledge and Skills (TAKS) was the instrument used to determine academic achievement. The results of the quantitative study determined that regular education students in the non-inclusive setting performed at higher levels on the TAKS in science and social studies than the regular education students in inclusive settings.

### **Summary.**

The framework for educating students with disabilities in schools across the United States has been constantly forming for nearly 100 years. Early court rulings such as *Brown v. Board* and Public Law 94-142, forced schools to provide students with disabilities a free and appropriate education. Legislations such IDEA and each reauthorization, along with ADA, defined the free and appropriate education and mandated specifically how school systems would educate students with disabilities. Today, special education students are supported with federal funding, legislations, and

research based programs that could not have been imagined 100 years ago.

For the purpose of this study, inclusion is considered to be the general education classroom where students with and without disabilities are served together, with a special education teacher and a regular education teacher present in the classroom. Other terms such as co-teaching and collaboration have been used synonymously with inclusion. The origins of inclusion can be traced back to the 1970s and inclusive practices have increased dramatically during the past 40 years. There is an abundance of existing qualitative research on inclusive practices and instructional techniques for inclusive teachers. However, there is very little quantitative research concerning the effects of inclusion on the academic achievement of students. The little quantitative research that is available often provides conflicting results.

In a review of qualitative research on inclusive practices, the researcher found several common themes. These themes were based on case studies, interviews, or observations. The results provide special education teachers and regular education teacher with a model for effective instructional practices in an inclusive classroom. According to the literature, the first piece to successful inclusive practice is administrative support. Next, the roles of the special education teacher and regular education teacher should be specifically defined. This will allow the regular education teacher to bring content knowledge and the special education teacher to bring trained instructional skills into the classroom; where both must be active instructors. There should also be ongoing training for teachers in inclusive settings and common planning times to communicate and prepare lessons. Finally, and by far the most mentioned theme in the literature is collaboration between the teachers. According to the literature,

effective communication and collaboration between the teachers is essential to the success of an inclusive classroom and is directly related to performance of both special education students and regular education students in the class.

The qualitative research does provide a very clear map for inclusion teachers to follow; however, the quantitative research is not nearly as clear in terms of student achievement. There were a total of eight quantitative studies reviewed on the effects of inclusion on the academic performance of special education students in the inclusive setting. Four of the eight studies revealed a significantly higher performance for special education students in the inclusive setting. Four of the eight studies revealed no difference in the academic performance for special education students in the inclusive setting. There was no study found that cited a negative student achievement outcome for special education students in the inclusive setting.

While the outcomes for special education students in the inclusive classroom are quite positive, the limited research for the regular education student in the inclusive setting does not concur. The researcher was able to find three quantitative studies on the effects of inclusion on the academic performance of regular education students. Each held a different conclusion; one showed positive results, one showed no significant difference, and one showed negative results. There were two consistent findings from quantitative research cited. First, attendance for both special education students and regular education students in inclusive settings was found to be significantly higher than the rates for students not in inclusive settings. Second, teacher attitudes towards the inclusive classroom were more positive after receiving training on working in the inclusive setting. The quantitative research on regular education students in inclusive

classrooms cited in this review of literature was derived from samples using elementary and high school students. The small number of quantitative reports, combined with the fact that there is no documentation of a sample drawn from a middle school population, has presented a gap in the literature.

## **Chapter III**

### **Methodology**

The purpose of this study is to examine the relationship between the academic performance of regular education students placed in an inclusive setting with special education students and the academic performance of regular education students in a non-inclusive academic setting. There is little doubt that the research completed on special education teaching methods and special education student achievement is vast and exhaustive. While there is a preponderance of research on educating students with disabilities in an inclusive classroom, there is little research in existence concerning the regular education student in that same inclusive classroom. The vast majority of the research that is available is qualitative and was based on teacher, parent and student perceptions concerning inclusion. Qualitative researchers use observations, interviews, and field notes to search for themes and patterns. This researcher will use quantitative analysis in an effort to narrow the focus, measure precise data, and form a statistical relationship.

In this section, the researcher will review the research questions and thoroughly explain the research design as well as the instrument used to gather data. This section will also be used to describe the population, participants, and sample intended for the study. In addition, methods of data collection, data analysis, and data reporting will be detailed. Finally, the chapter will conclude with a brief summary.

#### **Research Question**

In order to research the effects of inclusion on the academic achievement of regular education students being placed in an inclusive setting with special education

students, this study will be guided by the following overarching research question: What is the effect of inclusion on the academic achievement of regular education students?

Consequently there will be four underlying research questions.

1. To what extent do regular education students in inclusive classes demonstrate similar academic achievement in mathematics as regular education students not in inclusive classes?
2. To what extent do regular education students in collaborative classes demonstrate similar academic achievement in reading as regular education students not in inclusive classes?
3. To what extent do regular education students in inclusive classes demonstrate similar academic achievement in mathematics as regular education students not in inclusive classes when race and gender are introduced as factors?
4. To what extent do regular education students in inclusive classes demonstrate similar academic achievement in reading as regular education students not in inclusive classes when race and gender are introduced as factors?

### **Research Design**

To determine the effect of placement in an inclusive classroom on the academic achievement of regular education students, the researcher will develop a causal-comparative research study. According to Gall, Gall, & Borg (2007), causal-comparative research is a quantitative approach and a type of non-experimental investigation in which researchers seek to identify cause and effect relationships. In this instance the cause of student placement into the inclusive classroom setting will be the independent variable. The presumed effect of student achievement will be the dependent variable. For the

purpose of this study, student achievement will be measured by the Criterion-Referenced Competency Test (CRCT) scaled score of middle school students in mathematics and reading. Data will be collected ex post facto. The term ex post facto research is derived from Latin meaning “from that which is done afterward” that refers to quantitative research where causes are studied after they presumably have exerted their effect on the variable of interest (Gall, Gall, & Borg, 2007). The ex post facto design will be used for two reasons. First, the groups will be formed before the research begins. Second, there will be no manipulation of the independent variable because students were assigned to inclusion classes before the research was performed.

### **Instrument**

Student academic achievement will be measured using the Criterion-Referenced Competency Test (CRCT) scores. The CRCT is designed to measure how well students acquire, learn, and accomplish the knowledge and skills set forth in a specific curriculum or unit of instruction (Georgia Department of Education, 2009). The CRCT is designed to measure how well students acquire the skills and knowledge described in the Georgia Performance Standards (GPS) for middle and elementary students in Georgia. In *An Assessment and Accountability Brief* by the Georgia Department of Education (GADOE, 2007), the key issues of testing validity and reliability for the CRCT were addressed and the steps performed to ensure reliability and validity outlined. Each middle school student in the state of Georgia must complete the CRCT near the end of the academic year in the subjects of math, reading, language arts, social studies, and science. For the purpose of this study, the scaled score results from the math and reading CRCT will be used to define student achievement.



## **Sample and Sampling**

For the purposes of this study, convenience sampling will be used to select the sample population. Convenience sampling is defined as a group of cases that are selected simply because they are easy to access (Gall, Gall, & Borg, 2007). The sample population will be drawn from middle school students within the confines of a medium-sized school system in southeast Georgia. There will be two sample groups. The first sample group in this study will be the total population of middle school regular education students assigned to inclusive classes during the 2008 -2009 school year. The second sample group in this study will be the total population of students assigned to non-inclusive classrooms, but having the same regular education teacher as the first sample group during the 2008 – 2009 school year. Students not on the class roster for the entire school year will not be used in the sample. For the purpose of this study, scores of special education students and students in gifted programs not be used in the sample. The researcher predicts that there will be approximately 300 students in the sample population, more than 100 students in each group to be compared. This population will total more than the required amount for causal-comparative research designs. According to Gall, Gall and Borg (2007), in causal-comparative research, there should be at least 15 participants in each group to be compared.

The superintendent of the school system, as well as all principals from the middle schools within the school system will be contacted via a personal meeting, and an oral request for student information will be presented. A document permitting the researcher to gather information will be signed by the superintendent and filed if needed for future reference. The student information requested will be class rosters for inclusive classes

within the school, class rosters for regular education teachers working in inclusive classrooms, and CRCT test results in mathematics and reading for all regular education students on the class rosters. The researcher is an administrator at one of the middle schools and has a personal relationship with the other school leaders; therefore, cooperation by the middle school principals is expected.

### **Data Collection**

The researcher will obtain written permission from the school superintendent and then request verbal permission from each of the school principals before beginning data collection. Data will be collected using the school system information data base, Infinite Campus. Data will be collected directly from Infinite Campus without personal contact of students. Student names will be used only for sorting class designation and test results. A separate data base will be created using numerical codes for student names and pairing those codes with classroom assignments and CRCT results. The codes will be randomly assigned and will not contain student identification number, social security numbers, or any other numerical representation that can be used to identify the student.

### **Data Analysis**

Since quantitative data are the most appropriate for comparing the outcomes for two groups, descriptive and inferential statistics will be utilized. Descriptive statistics are used to summarize, organize, and display sets of numerical data (Gall, Borg, & Gall, 2007). The term inferential statistics refers to a set of mathematical procedures for using probabilities and information about a sample in order to draw conclusions about the population from which the sample was drawn (Gall, Gall, & Borg).

CRCT scaled score results in mathematics and reading from students in each of the two groups will be compared in order to define the spectrum for the dependent variable. In order to remove the teacher as a possible restriction, only students assigned to regular education teachers who currently teach in an inclusive setting will be used in the study. Because student test scores may differ based on academic ability the researcher will not use a t-test to test for significance. Instead, in an effort to initially equalize student test scores, the researcher will use analysis of covariance (ANCOVA) to disaggregate the data. ANCOVA is a statistical procedure used to determine whether the difference between the mean scores of two or more groups on one or more dependent variables is statistically significant, after controlling for one or more extraneous variables (Gall, Gall, & Borg, 2007). In the case of this study, ANCOVA will be used to adjust the 2007-2008 CRCT scores for students in the two groups, thus equalizing the groups before the study and providing a more generalizable conclusion. Since the researcher is familiar with the Statistical Package for Social Sciences (SPSS) based on experience and coursework, quantitative data will be analyzed using SPSS. Multiple displays such as charts, graphs, and tables will be used to present the findings.

### **Summary**

The purpose of this study is to examine the possible relationships between the academic performance of regular education students placed in an inclusive setting with special education students and the academic performance of regular education students in a non-inclusive academic setting. There will be four underlying research questions.

1. To what extent do regular education students in inclusive classes demonstrate similar academic achievement in mathematics as regular education students not in inclusive classes?
2. To what extent do regular education students in inclusive classes demonstrate similar academic achievement in reading as regular education students not in inclusive classes?
3. To what extent do regular education students in inclusive classes demonstrate similar academic achievement in mathematics as regular education students not in inclusive classes when race and gender are introduced as factors?
4. To what extent do regular education students in inclusive classes demonstrate similar academic achievement in reading as regular education students not in inclusive classes when race and gender are introduced as factors?

The researcher will use a causal-comparative research design. The presumed cause, in this case, student placement into the inclusive classroom setting, will be the independent variable. The presumed effect, in this case, student achievement, will be the dependent variable. For the purpose of this study, student achievement will be measured by the Criterion-Referenced Competency Test (CRCT) scaled scores of middle school students in mathematics and reading. The sample population will be drawn from middle school students within the confines of a medium-sized school system in southeast Georgia. There will be two sample groups. The first group will be regular education students assigned to inclusion classes and the second group will be regular education students not assigned to inclusion classes, but having the same teacher as the first group.

A separate data base will be created using numerical codes for student names and pairing those codes with classroom assignments and CRCT results. CRCT scaled score results in mathematics and reading from students in each of the two groups will be compared in order to define the spectrum for the dependent variable. Analysis of Covariance (ANCOVA) will be used to adjust the 2007-2008 CRCT scores for students in the two groups, thus equalizing the groups before the study and providing a more generalizable conclusion of whether or not a significant difference between the two groups exist on the 2008-2009 CRCT scores. Multiple displays will be used to present the findings.

## **Chapter IV**

### **Report of Data and Analysis**

This study utilized a causal-comparative design to examine the possible relationships between the academic performance of regular education students placed in an inclusive setting with special education students and the academic performance of regular education students in a non-inclusive academic setting. Criterion Referenced Competency Test (CRCT) scores in mathematics and reading were analyzed for students in each of the two groups. In order to reduce the likelihood of teacher ability to be a major factor in the results, only scores for students who were assigned to teachers that taught in the inclusive and non-inclusive classroom during the 2008-2009 school year were used in the study. Scores for students who were not assigned to the inclusive classroom for the entire school year were removed from the study as well as scores for those students not assigned to the same non-inclusive classroom for the entire year. In addition, scores for special education students and gifted students were not used in the calculation. In this section the researcher will review the research questions and research design, provide descriptive information on the participants in the study, and state the findings. Finally, data analysis will be provided using the research questions as a framework.

#### **Research Questions**

The purpose of this study was to examine the possible relationships between the academic performance of regular education students placed in an inclusive setting with special education students and the academic performance of regular education students in a non-inclusive academic setting. There were four underlying research questions.

1. To what extent do regular education students in inclusive classes demonstrate similar academic achievement in mathematics as regular education students not in inclusive classes?
2. To what extent do regular education students in inclusive classes demonstrate similar academic achievement in reading as regular education students not in inclusive classes?
3. To what extent do regular education students in inclusive classes demonstrate similar academic achievement in mathematics as regular education students not in inclusive classes when race and gender are introduced as factors?
4. To what extent do regular education students in inclusive classes demonstrate similar academic achievement in reading as regular education students not in inclusive classes when race and gender are introduced as factors?

### **Profile of the Respondents**

Table 1 is a detailed description of the population of students used in this study. Student scores were gathered from the three middle schools in a medium-sized school district in southeast Georgia. There were a total of 722 students that met the set criteria for the study. Three hundred five students or 42.2% of the sample were enrolled in inclusive classroom settings during the entire 2008-2009 school year. Four hundred seventeen or 57.8% of the students were enrolled in non-inclusive classrooms with teachers who also taught in the inclusive setting during the entire 2008-2009 school year. Students in the 6<sup>th</sup> grade represented 33.7% of the sample, 7<sup>th</sup> grade students represented 36.6% of the sample, and 8<sup>th</sup> grade students made up 29.8% of the sample for the study.

There were only 3 Asian students and 62 Hispanic students that met the criteria for the study. There were 300 African American Students and 357 White students represented making up 41.6% and 49.4% of the study respectively. The 372 male students represented 51.5% of the sample and the 350 female students accounted for 48.5% of the sample population.

*Table 1*

*Frequency Distribution for Student Populations*

<u>Student Group</u>	<u>n</u>	<u>% of population</u>
Total Inclusive	305	42.2
Total Non –Inclusive	417	57.8
6 <sup>th</sup> Grade Students	243	33.7
7 <sup>th</sup> Grade Students	264	36.6
8 <sup>th</sup> Grade Students	215	29.8
Asian Students	3	.4
African American Students	300	41.6
Hispanic Students	62	8.6
White Students	357	49.4
Female Students	350	48.5
Male Students	372	51.5

Table 2 provides the mean reading scaled scores for the two populations. Students in the inclusive classroom language arts setting during the 2008-2009 school



*Table 2**CRCT Reading Results for Student Population*

<u>Student Group</u>	<u>Test</u>	<u>Mean Score</u>	<u>N</u>
Inclusion	08 Reading	819.21	178
Non-Inclusion	08 Reading	827.10	236
Inclusion	09 Reading	824.26	178
Non-Inclusion	09 Reading	826.12	236

year had a mean reading scaled score of 819.21 on the 2007 -2008 CRCT and a mean score of 824.26 on the 2008-2009 CRCT reading portion. Students in the non-inclusive language arts setting had a mean reading score or 827.10 in 2007-2008 and mean score of 826.12 on the 2008-2009 CRCT.

Table 3 displays the mean math scaled scores for the two populations. Students in the inclusive math setting during the 2008-2009 school year had a mean math scaled score of 813.35 on the 2007-2008 CRCT and a mean score of 818.71 on the 2008-2009 CRCT math portion. Students in the non-inclusive math setting had a mean math score of 827.02 in 2007-2008 and mean score of 831.46 on the 2008-2009 CRCT.

*Table 3**CRCT Math Results for Student Population*

<u>Student Group</u>	<u>Test</u>	<u>Mean Score</u>	<u>N</u>
Inclusion	08 Math	813.35	187
Non-Inclusion	08 Math	827.02	209
Inclusion	09 Math	818.71	187
Non-Inclusion	09 Math	831.46	209

**Research Findings**

The purpose of this study was to examine the possible relationships between the academic performance of regular education students placed in an inclusive setting with special education students and the academic performance of regular education students in a non-inclusive academic setting. There were four underlying research questions. The following is a discussion of the findings obtained from the four research questions.

**Research Question One**

The first research question addressed the math achievement of students in inclusive classes as compared to the math achievement of students in non-inclusive classes. Because student test scores in the two groups differed on the 2007-2008 CRCT results, the researcher did not use a t-test to test for significance. Instead, in an effort to initially equalize student test scores, the researcher used Analysis of Covariance (ANCOVA) to disaggregate the data. The Statistical Package for Social Sciences (SPSS) was used to analyze the quantitative data. The 2007-2008 scores served as the covariate,

the dependent variable was the 2008-2009 test scores, and the inclusive or non-inclusive grouping for the students was the independent variable.

Table 4 is used to display the ANCOVA results for the math students. There was a statistically significant difference found between the two groups,  $p < .05$ , on the 2008-2009 math CRCT.

*Table 4*

*Results Analysis of Covariance (ANCOVA) for Math Population*

Source	df	F	Sig
Corrected Model	2	114.672	.000
Intercept	1	97.649	.000
Math 08	1	200.761	.000
Group	1	4.054	.045
Error	393		
Total	396		
Corrected Total	395		

R Squared = .369 (Adjusted R Squared = .365)

$p < .05$  There is a significant difference.

Table 5 shows the adjusted scores for the two groups after accounting for differences and using the 2007-2008 math test results as a pre-test. For the purpose of this study, the difference in the math scores between students in an inclusive setting and those in a non-inclusive setting was significant. After the ANCOVA adjustment, students in the non-

inclusive math setting had a mean score of 826.715 while students in the inclusive math setting had a mean score of 822.356.

*Table 5*

*Adjusted CRCT Scores for 09 Math*

<u>Group</u>	<u>Mean Scores</u>	<u>Adj Mean Scores</u>	<u>N</u>
Inclusive	818.706	822.356	187
Non- Inclusive	829.981	826.715	209

**Research Question Two**

The second research question addressed the reading achievement of students in inclusive classes as compared to the reading achievement of students in non-inclusive classes. Because student test scores in the two groups differed on the 2007-2008 CRCT results, the researcher did not use a t-test to test for significance. Instead, in an effort to initially equalize student test scores, the researcher again used ANCOVA to disaggregate the data. The 2007-2008 scores served as the covariate, the dependent variable was the 2008-2009 test scores, and the inclusive or non-inclusive grouping for the students was the independent variable.

Table 6 is used to display the ANCOVA results for the reading students. There was not a statistically significant difference found between the two groups,  $p < .05$ , on the 2008-2009 reading CRCT.

*Table 6**Results Analysis of Covariance (ANCOVA) for Reading Population*

Source	df	F	Sig
Corrected Model	2	140.507	.000
Intercept	1	124.209	.000
Read 08	1	274.972	.000
Group	1	1.187	.277
Error	411		
Total	414		
Corrected Total	413		

R Squared = .406 (Adjusted R Squared =.403)

$p < .05$  There is not a significant difference.

Table 7 shows the adjusted scores for the two groups after accounting for differences and using the 2007-2008 reading test results as a pre-test. After the ANCOVA adjustment, students in the inclusive reading setting had a mean score of 827.151 while students in the non-inclusive reading setting had a mean score of 825.568. Although there is a slight difference in the adjusted scores, the difference is not significant at the  $p < .05$  level.

Table 7

*Adjusted CRCT Scores for 09 Reading Population*


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Group	Mean Scores	Adj Mean Scores	N
Inclusive	824.258	827.151	178
Non- Inclusive	827.750	825.568	236

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**Research Question Three**

The third research question addressed the math achievement of students in inclusive classes as compared to the math achievement of students in non-inclusive classes when race and gender are introduced as factors. In an effort to initially equalize student test scores, the researcher used ANCOVA to disaggregate the data. The 2007-2008 scores served as the covariate, the dependent variable was the 2008-2009 test scores and the inclusive or non-inclusive grouping for the students was the independent variable. Table 8 is used to display the ANCOVA results for the female math students. There was not a statistically significant difference found between the two groups,  $p < .05$ , on the 2008-2009 math CRCT.

Table 8

*Results of Analysis of Covariance (ANCOVA) for Female Math*

Source	df	F	Sig
Corrected Model	2	47.294	.000
Intercept	1	52.199	.000
Math 08	1	86.395	.000
Group	1	.493	.484
Error	182		
Total	185		
Corrected Total	184		

R Squared = .342 (Adjusted R Squared =.335)

$p < .05$  There is not a significant difference.

Table 9 shows the adjusted scores for the two groups after accounting for differences and using the 2007-2008 math test results as a pre-test. After the ANCOVA adjustment, female students in the inclusive math setting had a mean score of 818.336 while female students in the non-inclusive math setting had a mean score of 820.515. Although there was a slight difference in the adjusted scores, the difference was not significant at the  $p < .05$  level.

Table 9

*Adjusted CRCT Scores for 09 Female Math*

Group	Mean Scores	Adj. Mean Scores	N
Inclusive Female	815.044	818.336	91
Non- Inclusive Female	823.702	820.515	94

Table 10 is used to display the ANCOVA results for the male math students.

There was a statistically significant difference found between the two groups,  $p < .05$ , on the 2008-2009 math CRCT.

Table 10

*Results of Analysis of Covariance (ANCOVA) for Male Math*

Source	df	F	Sig
Corrected Model	2	70.495	.000
Intercept	1	57.299	.000
Math 08	1	115.081	.000
Group	1	7.873	.005
Error	207		
Total	210		
Corrected Total	209		

R Squared = .405 (Adjusted R Squared = .399)

$p < .05$  There is a significant difference.



Table 11 shows the adjusted scores for the two groups after accounting for differences and using the 2007-2008 math test results as a pre-test. For the purpose of this study, the difference in the math scores between male students in an inclusive setting and those in a non-inclusive setting was significant. After the ANCOVA adjustment, male students in the inclusive math setting had a mean score of 815.051 while students in the non-inclusive reading setting had a mean score of 823.219.

*Table 11*

*Adjusted CRCT Scores for 09 Male Math*

<u>Group</u>	<u>Mean Scores</u>	<u>Adj. Mean Scores</u>	<u>N</u>
Inclusive Male	811.579	815.051	95
Non- Inclusive Male	826.087	823.219	115

Table 12 is used to display the ANCOVA results for the African American math students. There was not a statistically significant difference found between the two groups,  $p < .05$ , on the 2008-2009 math CRCT.

Table 12

*Results of Analysis of Covariance (ANCOVA) for African American Math*

Source	df	F	Sig
Corrected Model	2	32.752	.000
Intercept	1	44.756	.000
Math 08	1	58.881	.000
Group	1	3.197	.076
Error	149		
Total	152		
Corrected Total	151		

R Squared = .305 (Adjusted R Squared =.296)

$p < .05$  There is not a significant difference.

Table 13 shows the adjusted scores for the two groups after accounting for differences and using the 2007-2008 math test results as a pre-test. After the ANCOVA adjustment, African American students in the inclusive math setting had a mean score of 809.321 while students in the non-inclusive math setting had a mean score of 815.194. Although there was a slight difference in the adjusted scores, the difference was not significant at the  $p < .05$  level.

Table 13

*Adjusted CRCT Scores for 09 African American Math*

Group	Mean Scores	Adj. Mean Scores	N
Inclusive African American	808.169	809.321	83
Non- Inclusive African American	816.570	815.194	69

Table 14 is used to display the ANCOVA results for the white math students.

There was not a statistically significant difference found between the two groups,  $p < .05$ , on the 2008-2009 math CRCT.

Table 14

*Results of Analysis of Covariance (ANCOVA) for White Students in Math*

Source	df	F	Sig
Corrected Model	2	47.391	.000
Intercept	1	60.563	.000
Math 08	1	82.543	.000
Group	1	1.752	.187
Error	201		
Total	204		
Corrected Total	203		

R Squared = .320 (Adjusted R Squared =.314)

$p < .05$  There is not a significant difference.

Table 15 shows the adjusted scores for the two groups after accounting for differences and using the 2007-2008 math test results as a pre-test. After the ANCOVA adjustment, white students in the inclusive math setting had a mean score of 823.318 while white students in the non-inclusive math setting had a mean score of 827.377. Although there was a slight difference in the adjusted scores, the difference was not significant at the  $p < .05$  level.

*Table 15*

*Adjusted CRCT Scores for 09 White Students in Math*

<u>Group</u>	<u>Mean Scores</u>	<u>Adj. Mean Scores</u>	<u>N</u>
Inclusive White	819.530	823.318	83
Non- Inclusive White	829.975	827.377	121

#### **Research Question Four**

The fourth research question addressed the reading achievement of students in inclusive classes as compared to the reading achievement of students in non-inclusive classes when race and gender are introduced as factors. In an effort to initially equalize student test scores, the researcher used ANCOVA to disaggregate the data. The 2007-2008 scores served as the covariate, the dependent variable was the 2008-2009 test scores, and the inclusive or non-inclusive grouping for the students was the independent variable. Table 16 is used to display the ANCOVA results for the female reading students. There was not a statistically significant difference found between the two groups,  $p < .05$ , on the 2008-2009 reading CRCT.

Table 16

*Results of Analysis of Covariance (ANCOVA) for Female Reading*

Source	df	F	Sig
Corrected Model	2	101.459	.000
Intercept	1	41.110	.000
Read 08	1	201.523	.000
Group	1	3.697	.056
Error	204		
Total	207		
Corrected Total	206		

R Squared = .499 (Adjusted R Squared =.494)

$p < .05$  There is not a significant difference.

Table 17 shows the adjusted scores for the two groups after accounting for differences and using the 2007-2008 reading test results as a pre-test. After the ANCOVA adjustment, female students in the inclusive reading setting had a mean score of 828.736 while female students in the non-inclusive reading setting had a mean score of 825.181. Although there was a slight difference in the adjusted scores, the difference was not significant at the  $p < .05$  level.

Table 17

*Adjusted CRCT Scores for 09 Female Reading*

Group	Mean Scores	Adj. Mean Scores	N
Inclusive Female	825.594	828.736	91
Non- Inclusive Female	827.681	825.181	116

Table 18 is used to display the ANCOVA results for the male reading students. There was not a statistically significant difference found between the two groups,  $p < .05$ , on the 2008-2009 math CRCT.

Table 18

*Results of Analysis of Covariance (ANCOVA) for Male Reading*

Source	df	F	Sig
Corrected Model	2	51.845	.000
Intercept	1	81.430	.000
Read 08	1	98.638	.000
Group	1	.018	.895
Error	204		
Total	207		
Corrected Total	206		

R Squared = .337 (Adjusted R Squared = .330)

$p < .05$  There is not a significant difference.

Table 19 shows the adjusted scores for the two groups after accounting for differences and using the 2007-2008 reading test results as a pre-test. After the ANCOVA

adjustment, male students in the inclusive reading setting had a mean score of 825.582 while students in the non-inclusive reading setting had a mean score of 825.878. Although there was a slight difference in the adjusted scores, the difference was not significant at the  $p < .05$  level.

*Table 19*

*Adjusted CRCT Scores for 09 Male Reading*

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<u>Group</u>	<u>Mean Scores</u>	<u>Adj. Mean Scores</u>	<u>N</u>
Inclusive Male	822.908	825.582	87
Non- Inclusive Male	827.817	825.878	120

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Table 20 is used to display the ANCOVA results for the African American reading students. There was not a statistically significant difference found between the two groups,  $p < .05$ , on the 2008-2009 reading CRCT.

Table 20

*Results of Analysis of Covariance (ANCOVA) for African American Reading*

Source	df	F	Sig
Corrected Model	2	66.246	.000
Intercept	1	48.577	.000
Read 08	1	130.177	.000
Group	1	1.404	.238
Error	171		
Total	174		
Corrected Total	173		

R Squared = .437 (Adjusted R Squared =.430)

$p < .05$  There is not a significant difference.

Table 21 shows the adjusted scores for the two groups after accounting for differences and using the 2007-2008 reading test results as a pre-test. After the ANCOVA adjustment, African American students in the inclusive reading setting had a mean score of 822.269 while students in the non-inclusive reading setting had a mean score of 819.858. Although there was a slight difference in the adjusted scores, the difference was not significant at the  $p < .05$  level.



Table 21

*Adjusted CRCT Scores for 09 African American Reading*


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Group	Mean Scores	Adj. Mean Score	N
Inclusive African American	819.402	822.269	82
Non- Inclusive African American	822.413	819.858	92

---

Table 22 is used to display the ANCOVA results for the white reading students. There was not a statistically significant difference found between the two groups,  $p < .05$ , on the 2008-2009 math CRCT.

Table 22

*Results of Analysis of Covariance (ANCOVA) for White Reading*

Source	df	F	Sig
Corrected Model	2	60.384	.000
Intercept	1	66.425	.000
Read 08	1	120.207	.000
Group	1	1.070	.302
Error	208		
Total	211		
Corrected Total	210		

a. R Squared = .367 (Adjusted R Squared =.361)

$p < .05$  There is not a significant difference.

Table 23 shows the adjusted scores for the two groups after accounting for differences and using the 2007-2008 reading test results as a pre-test. After the ANCOVA adjustment, white students in the inclusive reading setting had a mean score of 832.220 while white students in the non-inclusive reading setting had a mean score of 830.020. Although there was a slight difference in the adjusted scores, the difference was not significant at the  $p < .05$  level.

Table 23

*Adjusted CRCT Scores for 09 White Reading*

Group	Mean Scores	Adj. Mean Scores	N
Inclusive White	829.861	832.220	79
Non- Inclusive White	831.432	830.020	132

**Summary**

There was a significant difference at the  $p < .05$  level found in two cases. First, there was a significant difference in the math scores of all students in inclusive math classes and the math scores of all students in non-inclusive math classes. Second, there was a significant difference in the math scores of male students in inclusive math classes and the math scores for male students in non-inclusive classes. In both instances the non-inclusive students had a higher mean score after using ANCOVA to adjust the pre-test scores to initially equalize the two groups. In all other cases, there was no statistically significant difference found between the test scores for the inclusive and non-inclusive groups. There were not enough members in the Asian and Hispanic subgroups to compare the two using ANCOVA.

## Chapter V

### Summary, Conclusions, and Implications

Special education inclusion practices have shown a significant increase during the past 15 years (Burstein, 2004). Under the No Child Left Behind Act of 2001 (NCLB, 2001), all students, including students with disabilities, must meet state measured academic proficiencies by the 2013-2014 school year. Special education students placed in regular education classes have been found to perform better academically and socially when compared to special education students in non-inclusive classrooms (McCarty, 2006). The focus of most of the research has been on the students with a disability and how an inclusive service delivery approach supports or advances the educational progress of that child (Korenich & Salisbury, 2006). In reviewing the literature, the researcher was able to find very little information on the academic performance of regular education students in inclusive setting. The majority of the existing research was qualitative in nature and focused on successful instructional strategies for inclusive settings. The researcher was able to find three quantitative studies concerning the effects of inclusion on the academic achievement of regular education students in the inclusive setting. The quantitative research on regular education students in inclusive classrooms was derived from samples using elementary and high school students. The small number of such studies, combined with the fact that there existed no documentation of a sample drawn from a middle school population presented a gap in the literature. For the purpose of this study, the term inclusion is considered to be the general education classroom where students with and without disabilities are served together, with a special education teacher and a regular education teacher present in the classroom.

The purpose of this study was to examine the relationship between the academic performance of regular education students placed in an inclusive setting with special education students and the academic performance of regular education students placed in non-inclusive settings. Four research questions were created to determine if there were any differences in the academic performance of the two groups of middle school students. The first research question was used to determine if the two groups differed on academic achievement in mathematics. The second research question was used to determine if the two groups differed on academic achievement in reading. The third research question was used to determine if the two groups differed on academic achievement in mathematics when race and gender were introduced as factors. The fourth and final research question was used to determine if the two groups differed on academic achievement in reading when race and gender were introduced as factors.

To determine the effect of placement in an inclusive setting the researcher used a causal-comparative research design. The Criterion-Referenced Competency Test (CRCT) scaled scores for math and reading were used to measure academic achievement. The sample population was drawn from middle school students within the confines of a medium sized school system in southeast Georgia. Permission to obtain data was obtained from the superintendent as well as the principal of each of the three middle schools. Data was collected using the school system's student information system, Infinite Campus. Data was collected for 722 students. Three hundred five regular education students were enrolled for the entire year in an inclusive setting with special education students and 417 regular education students were enrolled for the entire year in non-inclusive classrooms with teachers who also taught in an inclusive setting at some

point during the school day. In order to remove the teacher as a possible restriction, only students assigned to regular education teachers who taught in inclusive settings were used in the study. In an effort to initially equalize the student test scores, the researcher used Analysis of Covariance (ANCOVA) to disaggregate the data. ANCOVA was used to adjust the 2007-2008 CRCT scores for students in the two groups, thus equalizing the groups before comparing the 2008-2009 CRCT scores and providing a more generalizable conclusion.

The first research question addressed the math achievement of students in inclusive classes as compared to the math achievement of students in non-inclusive classes. There was statistically a significant difference between the math scores of the two groups. After the ANCOVA adjustment to the 2007-2008 CRCT math results, regular education students assigned to non-inclusive classes performed better on the 2008-2009 math portion of the CRCT than regular education students assigned to inclusive classrooms.

The second research question addressed the reading achievement of students in inclusive classes as compared to the reading achievement of students in non-inclusive classes. There was not a statistically significant difference found between the two groups when comparing reading scores, though students in the non-inclusive setting did score better than students in the inclusive setting.

The third research question addressed the math achievement of students in inclusive classes as compared to the math achievement of students in non-inclusive classes, when race and gender were introduced as factors. In terms of race, there was no significant difference found between the math scores of African American students in

inclusive classes compared to the math scores of African American students in non-inclusive classes, though African American students in the non-inclusive class did score better than similar students in an inclusive setting. Likewise, there was no significant difference found between the math scores of white students in inclusive classes compared to the math scores of white students in non-inclusive classes, though white students in non-inclusive math classes did score better than white students in inclusive math classes. In terms of gender, there was no significant difference found between the math scores of female students in inclusive classes compared to the math scores of female students in non-inclusive classes, even though female students in non-inclusive math settings did score better than female students in inclusive math settings. There was a significant difference found between the math scores of male students in inclusive classes compared to the math scores of male students in non-inclusive classes. After the ANCOVA adjustment to the 2007-2008 CRCT math results, male regular education students assigned to non-inclusive classes performed better on the 2008-2009 math portion of the CRCT than male regular education students assigned to inclusive classrooms.

The fourth research question addressed the reading achievement of students in inclusive classes as compared to the reading achievement of students in non-inclusive classes, when race and gender were introduced as factors. In terms of race, there was no significant difference found between the reading scores of African American students in inclusive classes compared to the reading scores of African American students in non-inclusive classes. Likewise, there was no significant difference found between the reading scores of white students in inclusive classes compared to the reading scores of white students in non-inclusive classes, though in both cases, after the ANCOVA

adjustment, students in the inclusive setting scored better than students in the non-inclusive setting. In terms of gender, there was no significant difference found between the reading scores of female students in inclusive classes compared to the reading scores of female students in non-inclusive classes, though after the ANCOVA adjustment, female students in the inclusive setting scored slightly better than female students in the non-inclusive setting. Likewise, there was no significant difference found between the reading scores of male students in inclusive classes compared to the reading scores of male students in non-inclusive classes.

### **Analysis of Research Findings**

The purpose of this study was to examine the relationship between the academic performance of regular education middle school students placed in an inclusive setting with special education students and the academic performance of regular education middle school students placed in non-inclusive settings. There were two key findings. The first major finding was that there was a statistically significant difference between the CRCT math scores of regular education students placed in an inclusive setting as compared to regular education students placed in non-inclusive settings. Regular education students not placed in inclusive settings scored significantly higher on the 2008-2009 CRCT math portion compared to regular education students assigned to inclusive settings. The second key finding was the fact that there existed a statistically significant difference between the CRCT math scores of regular education male students assigned to inclusive settings as compared to regular education male students assigned to non-inclusive settings. Male students assigned to non-inclusive settings scored



significantly higher on the 2008-2009 CRCT math portion compared to regular education male students assigned to inclusive settings.

### **Discussion of Research Findings**

There were three quantitative studies cited in the review of literature section of this paper. In this section of the paper, the researcher will compare the results from those three studies with the results found in this research project. Korenich and Fox (2006), in partnering with the U.S. Department of Education and the University of Illinois – Chicago, collected data from three school districts in Illinois, Missouri, and Pennsylvania. The study was only focused on students without disabilities in grades 3, 4, and 5 who were placed in inclusive settings with special education students. In terms of academic achievement, the researchers collected four types of data: report card grades from reading, math, social studies, and science; national percentile rank from standardized test scores; student work samples from writing and math; and teacher rating scales on academic competence of the students. Korenich and Fox (2006) found no negative effects on the academic achievement of regular education students as a result of being placed in an inclusive classroom with special education students. While Korenich and Fox used a sample of elementary students, the piece of research is comparable to this paper as it is quantitative in nature and analyzed standardized test scores in math and reading. The findings of Korenich and Fox coincide with the findings of this study in terms of reading. However, this researcher found that there is significant difference in the math scores of students placed in inclusive settings and those assigned to non-inclusive settings. Although there exists a contradiction in the findings, it is important to remember that the Korenich and Fox study focused on elementary students while this study focused

on middle school students.

Castro (2007) provided information on the academic achievement of regular education students placed in inclusive classrooms in a northern public school district in the State of New Jersey. The researcher analyzed TerraNova test scores for two years for all students in the district. Test scores were compared for first and second graders based on their academic setting of inclusive versus non-inclusive. Castro concluded that the academic performance of regular education students in an inclusive setting with special education students was significantly better than the academic performance of the regular education students in non-inclusive settings. While Castro used a sample of elementary students, the piece of research is comparable to this paper as it is quantitative in nature and analyzed standardized test scores in math and reading. The results cited in this study are nearly opposite the findings of Castro. Although there is a contradiction in the findings, again it is important to remember that the Castro study focused on elementary students while this study focused on middle school students.

Neugebauer (2008) examined the relationship between the academic performance of regular education students in inclusive high school science and social studies classes and their counterparts in the general science and social studies classes. The Texas Assessment of Knowledge and Skills (TAKS) was the instrument used to determine academic achievement. The results of the quantitative study determined that regular education students in the non-inclusive setting performed at higher levels on the TAKS in science and social studies than the regular education students in inclusive settings. While Neugebauer used a sample of high school students, the piece of research is comparable to this paper as it is quantitative in nature and analyzed standardized test scores. The results

from the Neugebauer study are consistent with two pieces of this researcher's findings; math students and male math students in non-inclusive classrooms did score significantly higher than their counterparts in inclusive classrooms. However, the other portions of this researcher's findings are not consistent with the findings of Neugebauer, which may or may not be explained as a result of Neugebauer's studying high school students, whereas this researcher studied middle school students.

Each of the three studies presented in this section hold differing conclusions within the findings and each has a conclusion that is not comparable to the findings of this study. There are several variables that come into play when comparing the findings of each of these pieces of research. First, the studies are each based on different grade levels and in some cases curricular descriptors. Second, the sample populations were taken from different parts of the country. Finally, the analysis of data was not consistent within each of the studies.

## **Conclusions**

The purpose of this project was to examine the relationship between the academic performance of regular education students placed in an inclusive setting with special education students and the academic performance of regular education students placed in non-inclusive settings. Four research questions were developed to answer the overarching question. The first research question was used to determine the relationship between the two groups in math achievement as documented by CRCT results. From the sample obtained for this study, it was determined that there was a difference in the math scores of the two groups. Students in the non-inclusive settings scored significantly higher on the math portion of the CRCT than students in the inclusive setting.

The second research question was used to determine the relationship between the two groups in reading achievement as measured by CRCT results. From the sample obtained for this study, it was determined that there was no difference in the reading scores of the two groups. Since there were differences in math results and no differences in the reading results for the two independent groups, the researcher would assume that instructional strategies, teacher characteristics, and inclusive teamwork may have had an impact on the outcome. A closer view of the similarities and differences between the reading instruction and math instruction provided to the two groups may be needed.

For research question three, the researcher found that there were no significant differences in the math achievement of females, African Americans, or white students as measured by the CRCT math results. However, the data obtained from the sample of male students did produce a significant difference in math achievement between the two groups. Male students placed in non-inclusive settings scored significantly higher on the CRCT math portion than male students placed in inclusive settings. The difference found in the male population may have had a strong impact on the overall findings and may be the root of the results. For this reason, a closer view of the methods used to assign regular education students to inclusive classrooms, as well as the discipline patterns, learning styles, and psychological impact of the assignment on male students may need to be investigated.

For research question four, the research found that there were no significant differences in the reading achievement of the two groups when the variables of race and gender are introduced as factors. Again, since there were differences in math results and no differences in the reading results for the two independent groups, the researcher would

assume that instructional strategies, teacher characteristics, and inclusive teamwork may have had an impact on the outcome. A closer view of the similarities and differences between the reading instruction and math instruction provided to the two groups may be needed.

### **Implications**

The researcher's findings are important to school administrators, teachers, and parents. This research is a comparison between the achievement of regular education students in the inclusive setting with special education students and regular education students not in inclusive settings. This research has shown that from the sample obtained there are no differences in reading achievement between the two groups. In addition, there are no differences between the reading achievement of the two groups when race and gender are considered. For this reason, administrators and teachers can be confident when assigning students to inclusive classes that reading achievement will be consistent. In addition, administrators and teachers can discuss these findings with parents who may have a concern about the placement in terms of the reading achievement of their child.

The findings for math achievement are also important to administrators and teachers. This research has shown that from the sample obtained there are differences in the math achievement between the two groups. In addition, there are differences between the math achievement of male students within the two groups. In both instances, students in the non-inclusive group scored significantly higher on the math portion of the CRCT than students in the inclusive group. This information can be used by administrators when assigning students to the inclusive setting. In addition, both teachers and administrators should use these findings to explore instructional strategies used in the

mathematics setting, as well as the working relationship between the regular education teacher and the special education teacher in the inclusive mathematics setting.

This research fills a gap in the literature on special education inclusive practices and how those practices relate to the achievement of regular education students assigned to the inclusive classroom. Many research articles have been published that focus on the achievement of special education students in inclusive settings. There is also an abundance of information available concerning the working relationship between the regular education teacher and the special education teacher in the inclusive setting. Very few quantitative studies exist that explore the academic achievement of regular education students in the inclusive setting. For this reason, this research makes a significant contribution to the literature and provides a foundation for future research on the academic performance of regular education students in an inclusive setting.

Finally, the findings of this research are important to the researcher. The researcher is a principal in a middle school setting in the school district where the data was obtained. It is imperative that principals be able to assure parents of regular education students that there is no difference between the academic performance of regular education students placed in an inclusive setting and those in non-inclusive settings. Unfortunately, the findings of this study for mathematics students have made that assurance difficult. More research in this area is needed to find the root problem and hopefully equalize the results for the two groups in the future.

### **Recommendations**

The findings of this study have left several unanswered questions concerning the placement of regular education students in an inclusive setting with special education

students. For this reason, the following recommendations for further study are as follows:

1. similar research is needed on the mathematics and reading achievement for students at the high school and elementary levels;
2. similar research is needed on the social studies and science achievement for students at the middle school level;
3. further research is needed to determine the reasons for the differences in the mathematics achievement of the two groups in the study;
4. a follow up study with similar demographics is needed to further justify the findings of this study;
5. a longitudinal study may be beneficial.

### **Dissemination**

The results of this research project will be disseminated in three ways. A bound and printed copy will be produced and provided to the Henderson Library at Georgia Southern University. The second method of dissemination will be to submit the web based dissertation abstracts site. Finally, the research project will be provided to the researcher's Board of Education and Director of Special Education. A similar study will be conducted at the end of the 2009-2010 school year within the same school district. Findings of this future study will be used to provide training for special education and regular education teachers assigned to work together in inclusive settings.

### **Concluding Thoughts**

As a principal, one of the most difficult decisions that the researcher has to make is to place a regular education student into an inclusive classroom with special education

children. Often parents are not notified of this placement and instead questions of placement are avoided until discussion is brought to the forefront by the parent. Once concern is related by the parent, administrators have no real facts to support such a placement. The fact that school principals are faced with increased expectations and reduced budgets makes the decision a necessity.

This research project was chosen by this researcher as a direct result of the No Child Left Behind Act (NCLB). There is little question in this researcher's mind that without the measurement of Adequate Yearly Progress (AYP), the rate of including regular education students in a classroom with special education students would be dramatically reduced. Though inclusionary practices have shown increased achievement for the special education students involved, it seemed that few researchers wanted to tackle the question of the academic achievement of the regular education students in those inclusive classrooms from a quantitative view. In fact, many school administrators simply refuse to discuss or even collect data related to the academic achievement of regular education students in the inclusive setting. One has to wonder if school administrators are knowingly lowering the achievement of the majority in order to increase the achievement of students with disabilities.



### References

- Baglieri, S. & Knopf, J. (2004). Normalizing differences in inclusive education. *Journal of Learning Disabilities, 37*, 525-529.
- British Columbia Teachers' Federation. (2006). *Advantages of inclusion*. Retrieved April 14, 2009 from <http://bctf.ca/issues/resources.aspx?id=13242>
- Brown v. Board of Educ., 347 U.S. 483 (1954).
- Burstein, N., Sears, S., Wilcoxon, A., Cabello, B., & Spagna, M. (2004). Moving toward inclusive practices. *Remedial and Special Education, 25*, 104-116.
- Castro, V. (2007). The effects of co-teaching on academic achievement of K-2 students with and without disabilities in inclusive and non-inclusive classrooms. Retrieved September 2, 2009, from <http://fordham.bepress.com/dissertations/AAI3255067/>
- Fore, C., Burke, M., Burke, S., Boon, R. & Smith, S. (2008). Academic achievement and class placement in high school: Do students with learning disabilities achieve more in one class placement than another? *Education and Treatment of Children, 31*(1), 55-72.
- Gall, M. D., Borg, W. R., & Gall, J. P. (2007). *Educational research: An introduction*. 8th Ed. Boston: Pearson/Allyn & Bacon.
- Georgia Department of Education, (2009). Retrieved July 6, 2009, from <http://gadoe.org>
- Georgia Department of Education. (2007). Assessment research and development divisions of the Georgia department of education. An assessment and accountability brief: Validity and reliability for the criterion-referenced competency tests.
- Henning, M. & Mitchell, L. (2002). Preparing for inclusion. *Child Study Journal 32*(1), 19-29.

- Isherwood, R. S., & Barger-Anderson, R. (2008). Factors affecting the adoption of co-Teaching models in inclusive classrooms: One school's journey from mainstreaming to inclusion. *Journal of Ethnographic and Qualitative Research* 2, 121-128.
- Kavale, K. & Forness, S. (2000). History, rhetoric and reality: Analysis of the inclusion debate. *Remedial and Special Education*, 2, 279-296.
- Keefe, E. & Moore, V. (2004). The challenge of co-teaching in inclusive classrooms at the high school level: What the teachers told us. *American Secondary Education* 32(3), 77-88.
- Kemp, C. & Carter, M. (2006). The contribution of academic skills to the successful inclusion of children with disabilities. *Journal of Development and Physical Disabilities*, 18(2), 123-147.
- Korenich, R., & Salisbury, C. (2006). Learning opportunities and performance outcomes in inclusive elementary classrooms. Retrieved September 2, 2009, from [http://www.uic-cfdc.org/pdf/InclusiveClassrooms\\_10.pdf](http://www.uic-cfdc.org/pdf/InclusiveClassrooms_10.pdf)
- Lane, K. (2005). Academic performance of students with emotional and behavioral disorders served in a self-contained setting. *Journal of Behavioral Education*, 17, 43-62.
- Maglieri, K. & Zigmond, N. (2005). Co-Teaching in middle school classrooms under routine conditions: Does the instructional experience differ for students with disabilities in co-taught and solo-taught classes? *Learning Disabilities Research & Practice*, 20(2), 79-85.

- Mastropieri, M. A., & Scruggs, T. E. (2004). Science and schooling for learning disabilities. *Journal of Learning Disabilities, 37*, 270-276.
- Mastropieri, M., Scruggs, T., Graetz, J., Norland, J., Gardizi, W., & McDuffie, K. (2005). Case studies in co-teaching in the content areas: Successes, failures, and challenges. *Intervention in School and Clinic, 40*(5), 260-270.
- Murawski, W. & Swanson, H. (2001). A meta-analysis of co-teaching research: Where are the data? *Remedial and Special Education, 22*, 258-267.
- Murawski, W. (2006). Student outcomes in co-taught secondary English classes: How can we improve? *Reading & Writing Quarterly, 22*(3), 227-247.
- National Council on Disabilities. (2000). *Back to School on Civil Rights: Advancing the Federal Commitment to Leave No Child Behind*. Retrieved April 16, 2009, from [http://www.ncd.gov/newsroom/publications/2000/backtoschool\\_1.htm](http://www.ncd.gov/newsroom/publications/2000/backtoschool_1.htm)
- National Research Center on Learning Disabilities. (n.d.). *Twenty-five years of progress in educating children with disabilities through IDEA*. Retrieved April 17, 2009, from <http://www.nrld.org/resources/osep/historyidea.html>
- Neugebauer, N.G. (2008). *TAKS scores of general education students in secondary co-teach classes in a Texas school district*. Retrieved May 24, 2009, from <http://repository.tamu.edu/handle/1969.1/85931>
- Pardini, P. (2002). The history of special education. *Rethinking Schools Online, 16*(3). Retrieved April 17, 2009, from [http://www.rethinkingschools.org/archive16\\_03/Hist163.shtml](http://www.rethinkingschools.org/archive16_03/Hist163.shtml)

- Price, B., Mayfield, P., McFadden, A., & Marsh, G. (2001). *Collaborative teaching: Special education for inclusive classrooms*. Retrieved on September 10, 2009, from <http://www.parrotpublishing.com/>
- Rea, P., McLaughlin, V. & Walther-Thomas, C. (2002). Outcomes for students with learning disabilities in inclusive and pullout programs. *Council for Exceptional Children, 68*(2), 203-222.
- Rea, P. & Connell, J. (2005). Minding the fine points of co-teaching. *The Education Digest, September*, 29-35.
- Sacks, G. (2008). A comparison of quality of life variables for students with emotional and behavioral disorders and students without disabilities. *Journal of Behavioral Education, 17*, 111-127.
- Sailor, W. & Roger, B. (2005). Rethinking inclusion: Schoolwide applications. *Phi Delta Kappan, 86*(7), 503-509.
- Sandholtz, J. H. (2000). Interdisciplinary team teaching as a form of professional development. *Teacher Education Quarterly, Summer*, 39-54.
- Suomi, J. (2003). Factors affecting the social experiences of students in elementary physical education classes. *Journal of Teaching in Physical Education, 22*, 186.
- Weiss, M. & Lloyd, J (2002). Congruence between roles and actions of secondary special educators in co-taught and special education setting. *The Journal of Special Education, 36*(2), 58-68.

- Wisconsin Education Association Council (2007). *Special Education Inclusion*. Retrieved on September 14, 2009 from [http://www.weac.org/Issues\\_Advocacy/Resource\\_Pages\\_On\\_Issues\\_One/Special\\_Education/special\\_education\\_inclusion.aspx](http://www.weac.org/Issues_Advocacy/Resource_Pages_On_Issues_One/Special_Education/special_education_inclusion.aspx)
- Wischnowski, M., Salmon, S., & Eaton, K. (2004). Evaluating co-teaching as a means for successful inclusion of students with disabilities in a rural district. *Rural Special Education Quarterly*, 23(3), 3-14.
- Wolfberg P. J. (1999). Fostering peer interaction, imaginative play and spontaneous language in children with autism. *Child language Teaching and Therapy*, 15, 41-52.
- Worrell, J. (2008). How secondary schools can avoid the seven deadly sins of inclusion. *American Secondary Education*, 36(2), 43-56.
- Villa, R. A., Thousand, J. S., Nevin, A., & Liston, A. (2005). Successful inclusive practices in middle and secondary schools. *American Secondary Education Journal*, 33(1), 33-50.
- Yell, M. L, Rogers, D., & Rogers, E. L. (1998). The legal history of special education: What a long, strange trip it's been! *Remedial and Special Education*, 19(4), 219-228.
- Zigmond, N. (2001). Special education at a crossroads. *Preventing School Failure*, 45(2), 70-74.

## Appendix A

## IRB Approval Form from Georgia Southern University

Georgia Southern University Office of Research Services & Sponsored Programs <b>Institutional Review Board (IRB)</b>		
Phone: 912-478-0843		Veazey Hall 2021
		P.O. Box 8005
Fax: 912-478-0719	IRB@GeorgiaSouthern.edu	Statesboro, GA 30460

**To:** Robert Scott Spence  
179 Harbor Pointe Drive  
Brunswick, GA 31523

**cc:** Charles E. Patterson  
Associate Vice President for Research

**From:** Office of Research Services and Sponsored Programs  
Administrative Support Office for Research Oversight Committees  
(IACUC/IBC/IRB)

**Date:** November 30, 2009

**Subject:** Status of Application for Approval to Utilize Human Subjects in Research

After a review of your proposed research project numbered: H10113, and titled "The Effects of Inclusion on the Academic Achievement of Regular Education Students", it appears that your research involves activities that do not require full review by the Institutional Review Board according to federal guidelines.

According to the Code of Federal Regulations Title 45 Part 46, your research protocol is determined to be exempt from full IRB review under the following exemption category(s):

- Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

*Therefore, as authorized in the Federal Policy for the Protection of Human Subjects, I am pleased to notify you that your research is exempt from IRB approval. You may proceed with the proposed research.*

Sincerely,

Eleanor Haynes  
Compliance Officer