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A mixed-methods investigation of heterogeneously grouped inclusion students at southeast high school

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Doctoral Study Submitted in Partial Fulfillment

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Abstract

Inclusion education led to academically-homogeneous grouping of students at southeast high school. Administratively, the decision was made to increase rigor, inclusion students would be grouped heterogeneously in senior economics classes. Guided by Dewey's pragmatic theory, the purpose of this sequential, explanatory, mixed method study was to investigate whether a significant difference exists in the course passing rates, end-of-course test (EOCT) scores, and graduation rates between inclusion students in heterogeneous classes and those in homogeneous classes and how participants perceived the grouping. Archival data ($N = 42$) on student instructional grouping, passing rates, EOCT scores, and graduation rates were analyzed using 3 *t* tests. Data were also collected via interviews with 13 participants, including current and former teachers and several former students to determine the perceptions of those involved with the change. Findings from the quantitative analysis showed a significant difference in EOCT scores, demonstrating an improvement for the heterogeneous inclusion students, but not on course passing or graduation rates. The qualitative data were open coded and thematically analyzed and 6 themes emerged on how the heterogeneously-grouped classes benefitted inclusion students. Based on these findings, a 3 day professional development program for teachers was developed to assist local faculty in the construction of project-based and differentiated learning environments. This study contributes to social change by affecting the academic placement and academic success of inclusion students. Inclusion students' increased test scores could lead to increased passing rates, which could result in increased graduation rates.

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Section 1: The Problem

Introduction

Southeast High School serves a small city located in central Georgia. The population of the city is 10,473 (US Census, 2012). The high school has an average of 670 students enrolled yearly, with 5% of the student body being comprised of students with disabilities. Southeast High School is identified as a Title I school because of the number of low socioeconomic students it serves. Students with disabilities are taught in an inclusion setting. Inclusion education is the practice of students with disabilities spending at least 80% of the school day in the regular education classroom when it is determined by the individual education program (IEP) committee to be the least restrictive educational environment (IDEIA, 2004).

In the past, Southeast High School has placed students in educational environments based on academic ability level and, traditionally, had three academic tracks to which students were assigned: 02, 03, and 04. The lowest achieving students, including all inclusion students, went into 02; the average students went into 03; and the academically gifted went into 04. Inclusion students were assigned to the lowest academic track (02) in an effort to ensure that all inclusion students received needed and prescribed academic assistance as described in their IEP. Recently, Southeast High School decided to combine all three academic tracks into a heterogeneous group in the senior economics course. The administration of the school and the leadership team decided to combine the academic levels to achieve compliance with Common Core

Standards. Students are now placed in their senior economics class based upon heterogeneous grouping rather than being grouped by academic ability level.

English and mathematics courses are currently using two tracks. They have used two levels for the past 8 years in accordance with the Georgia Performance Standards (GPS). Before 2006, there were multiple levels of English and mathematics classes as well as other course subjects. The social studies department, however, has placed all seniors in the same level, heterogeneously grouped senior economics course for the past 3 years. In this study, I examined the efficacy of the shift to heterogeneous class grouping for inclusion students.

The intent of this transition from homogeneous grouping to heterogeneous grouping of inclusion students was two-fold. First, the heterogeneous environment allowed the classroom instruction to be at a consistently high academic level. Second, the inclusion teacher could assist the general education teacher with students with disabilities and their individual needs in a coteaching setting. Students with disabilities have historically had difficulty graduating from high school. Goodman, Hazelkorn, Bucholz, Duffy, and Kitta (2011) found that, while inclusion rates have continuously increased for students with disabilities, their graduation rates have remained relatively constant. According to the high school and Georgia Department of Education (GADOE; 2012), graduation rates for general education students have risen, but graduation rates for students with disabilities have dropped. This change has occurred while inclusion rates at Southeast High School have increased over the past 3 years (GADOE, 2012).

The difference in the percentage of regular education students graduting and inclusion students graduating inspired the development of this research study. Goodman et al. (2011) reported, "More research needs to be conducted on how to increase the graduation rates of students with disabilities" (p. 250). The placement of inclusion students should provide an opportunity for inclusion students to be in the least restrictive learning environment. If heterogeneous grouping in senior economics is determined to be effective, it could change the mindset of class placement and course structuring at Southeast High School.

Students with disabilities are held to the same accountability level as all students to receive a high school diploma; special education diplomas do not exist any longer in Georgia. Economics is one of the required courses that must be passed to graduate with a high school diploma in the state of Georgia (GADOE, 2012). In Georgia, only students with disabilities can receive a certificate of attendance if they do not earn a high school diploma, and they are still counted as high school dropouts.

Definition of the Problem

One year after the heterogeneous grouping program in economics was instituted at Southeast High School, the principal, who is now the superintendent, wanted to know if the one level economics class was effective. The purpose of this study was to determine whether placing inclusion students with higher academic achieving students resulted in increased course passing and higher end-of-course test (EOCT) grades. Increased EOCT grades, which account for 20% of students' final course grade, could raise final course grades and raise the graduation rate of students with disabilities.

The study was a mixed methods research design with an emphasis on quantitative data derived from a statistical analysis of archival date. In the analysis of the data, I focused on overall course passing rates, graduation rates, and EOCT grade conversion rates. Senior economics is the only course at Southeast High School that has one academic level, contains an EOCT, and is required for a high school diploma. Data were obtained from archival sources.

Grades and passing rates are available to the public. The course passing rates and EOCT passing rates are available through the Georgia Department of Education. Individual scores were obtained from the school archival records, ensuring complete confidentiality. The research could contribute to understanding the local problem by identifying whether or not a significant difference exists between heterogeneously grouped inclusion students and homogeneously grouped inclusion students.

Rationale

The rationale for choosing this problem was based on evidence from the local and national level. There is a gap in the practice of placement of inclusion students in classes that represent the least restricted learning environment. The gap in practice at the local level was the rationalization for choosing to study this problem.

Evidence of the Problem at the Local Level

The administration at Southeast High School began heterogeneous grouping in senior economics 3 years ago to improve student learning. The process began in response to the EOCT results from 2008 to 2010. In 2008, 100% of the students with disabilities failed the EOCT, while in 2009 and 2010, 90% of the students with

disabilities failed the EOCT (GADOE, 2012). Further, the graduation rate of students with disabilities declined from 21.4% in 2008 to 12.5% in 2010 (GADOE, 2012). The administration took notice of these declines and instituted heterogeneous grouping in the interest of improving passing rates and graduation rates of Southeast High School inclusion students.

Evidence of the Problem from the Professional Literature

The Individuals with Disabilities Education Act (IDEA; 1997), the No Child Left Behind Act (NCLB; 2001), and the Individuals with Disabilities Education Improvement Act (IDEIA; 2004) have required that students with disabilities be included in the general education curriculum, as well as be held to the same accountability standards for all students receiving a high school diploma. The educational practice of inclusion is to place students with disabilities in the least restrictive learning environment, which is defined as the general education curriculum.

Inclusion students experience difficultly completing high school with a general education diploma. In 2003, fewer than 2% of high school completers exited with certificates nationally; conversely, over 15% of students with disabilities received certificates exiting high school (Gaumer Erickson, Kleinhammer-Tramill, & Thurlow, 2007). Certificates only express that students have attended high school but do not account for course work completion. A significant percentage of inclusion students drop out of high school or finish with a certificate of attendance, which still counts as a high school dropout. Gaumer Erickson et al. (2007) explained that 78% of all students with disabilities, nationally, exit high school with exit certificates. Pyle and Wexler (2012)

found, “Students with disabilities are among the most at risk for dropping out and continuously perform below their peer subgroups, warranting immediate intervention” (p. 287). The National Center for Educational Statistics (2013) reported that the national dropout average rate from 2008 to 2010 was 7.8%. Goodman et al. (2011) found that the dropout rate for students with disabilities has remained constant around 73% for the past decade.

One explanation offered for the dropout rate of students with disabilities is the lack of academic success that they experience. Academic achievement was found to be the primary indicator of high school dropouts. Klassen, Krawchuk, Lynch, & Rajani (2008) found students that do not believe they are equipped to complete tasks because of skill deficits will procrastinate on completing tasks for a fear of failure. Students who drop out of high school are more likely to be unemployed, to earn less than those who graduate, to be on public assistance, and to end up in prison (Christle, Jolivette, & Nelson, 2007). As such, student perceptions of their academic ability and achievement have important implications for high school completion and other like outcomes. The purpose of this study was to evaluate whether placing inclusion students in heterogeneous grouped academic classes has been beneficial in improving the academic achievement of these students.

Definitions

End-of-course test (EOCT): A test designed to measure diagnostic information of students’ strengths and weaknesses of understanding and applying course content (GADOE, 2012).

General education: The curriculum required by a given state of the union that students are expected to master (National Center for Learning Disabilities (NCLD), 2013).

Heterogeneous grouping: Grouping of students not based on shared academic characteristics (Sperry, 1991).

Homogeneous grouping: Grouping of students based on shared academic achievement characteristics (Sperry, 1991).

Inclusion education: Students with disabilities who spend at least 80% of their school day in general education classes (Goodman et al., 2011).

Students with disabilities: A student who has been identified through psychological testing to have 1 of the 13 disability categories in IDEA and needs special education based on that disability (NCLD, 2013).

Significance

Evaluating the program of heterogeneously grouping students compared to homogeneously grouping students could benefit the local educational setting. At the study site, while rates of inclusion students in the general curriculum continue to increase, the graduation rate of students with disabilities in inclusion classes decreases. The benefit to the local setting could be a higher percentage of students with disabilities graduating from high school with a general education diploma as opposed to an exit certificate of attendance. The results of this project study may offer valuable contributions toward the classroom placement and academic expectations of inclusion students locally, statewide, and nationally.

Guiding/Research Question

Hypothesis ($H_1$1): There is a significant difference between the passing rate of inclusion students in heterogeneous classes and inclusion students in homogeneous classes in senior economics at Southeast High School.

Null Hypothesis ($H_0$1): There is not a significant difference between the passing rate of inclusion students in heterogeneous classes and inclusion students in homogeneous classes in senior economics at Southeast High School.

1. To what extent do inclusion students' senior economics passing rates differ for inclusion students in heterogeneous versus homogeneous classes at Southeast High School?

Hypothesis ($H_1$2): There is a significant difference between the passing rate on the EOCT of inclusion students that are heterogeneously grouped when compared to inclusion students that are homogeneously grouped at Southeast High School.

Null Hypothesis ($H_0$2): There is not a significant difference between the passing rate on the EOCT of inclusion students that are heterogeneously grouped when compared to inclusion students that are homogeneously grouped at Southeast High School.

2. To what extent do inclusion students' passing rates on the senior economics End-of-Course Test differ when heterogeneously grouped compared to homogeneously grouped at Southeast High School?

Hypothesis ($H_1$3): There is a significant difference between the graduation rate of inclusion students that are heterogeneously grouped and inclusion students that are homogeneously grouped at Southeast High School.

Null Hypothesis ($H_0$3): There is not a significant difference between the graduation rate of inclusion students that are heterogeneously grouped and inclusion students that are homogeneously grouped at Southeast High School.

3. To what extent do heterogeneously grouped inclusion students' graduation rates differ from homogeneously grouped inclusion students at Southeast High School?

4. How do participants perceive the effects of the change from homogeneous to heterogeneous grouping of inclusion students in senior economics classes?

Review of the Literature

The purpose of this study was to determine whether a significant difference exists between homogeneous grouping and heterogeneous grouping in senior economics at Southeast High School. The literature review is an analysis of the current research on perspectives of inclusion education, academic benefits of inclusion education, learning perspectives of inclusion education, and pragmatism as a theoretical framework. This review contains online, published, peer-reviewed articles located on the ERIC database, SAGE database, PsycINFO database, PsycARTICLES database, Georgia Department of Education database, and various publications. Key words used in the search included *inclusion, inclusion education, ability grouping, tracking, negatives of tracking, exit testing, pragmatic theory, pragmatism, high impact testing, common core standards, teacher expectations, academic achievement, dropout rates, end-of-course test validity and reliability, quantitative research on inclusion,* and *qualitative research on inclusion.*

Theoretical Framework

Pragmatism was the framework that was used to frame this study. A pragmatic framework assists researchers in identifying what works in a particular situation. Lodico, Spaulding, and Voegtle (2010) explained that pragmatic research assists the researcher in discovering answers that will help achieve an explicit goal. The explicit goal of this study was to measure, using mixed methods, whether a significant difference exists between heterogeneous grouping of inclusion students and homogeneous grouping in senior economics.

Uniting knowledge and practice to produce educational reform, as well as incorporating the practical knowledge, is the basis of pragmatic research (Bourgeois, 2010). Pragmatic researchers answer why and what works, as well as when it will work. The practical application of pragmatic research using the union of practice and knowledge benefitted this study. Nohl (2009) ascertained that pragmatism puts experience at the center of educational theory. This study was a worthwhile scholarly undertaking by compiling quantitative data with qualitative data to measure whether a significant difference exists between heterogeneous grouping and homogeneous grouping of inclusion students.

History of Inclusion Education

Inclusion of students with disabilities in the general curriculum has been implemented in public education for many years. The division of students into homogeneous ability groups began in the early 1900s in an attempt to Americanize immigrants and poor ethnic groups moving into the cities (Ansalone, 2010; Weiss, 2007).

Inclusion of students with different abilities into the main stream educational curriculum began in the 1930s with the use of bussing students to school (Sass, 2013). Students, at that time, had access to the same educational opportunities. Sass (2013) also found that, in the 1990s many states in the United States passed several laws making schools accountable for their students learning. This was the precursor to NCLB legislation and the role of inclusion education began to flourish.

Students with disabilities who spend 80% or more of their day in the regular education setting, are determined to be included in the regular education curriculum (IDEIA, 2004). IDEIA (2004) states that students with disabilities who are in the inclusion setting meet the requirements and mandates of the law. Inclusion has become a curriculum of affording accommodations to identified students with disabilities in the regular education setting (Carpenter & Dyal, 2007; Landin, 2010; Sapon-Shevin, 2007). The educational concept of inclusion has become an important education topic (Doulkeridou et al., 2011).

Social Effects of Inclusion Education

In a society that is becoming affected by world social events, school administrators, teachers, parents, and students must develop an understanding of different cultures and educational needs of all students. Fitch (2010) found that there is a 2 tiered system in education that limits student diversity by detaching it from the overall social and cultural system in the United States. Demographic trends indicate a shift of society becoming less dominated by one group and becoming more inclusive of all people. Including the students with disabilities in the regular education setting could reduce

social discernment as the country undergoes a demographic change (Johnson & Borrego, 2009). Winter (2012) stated, "Education policies are never neutral and objective, but are instead deeply political and ethical message systems with power to reproduce the social status quo or to transform it" (p. 449).

Students of different educational abilities need to be mixed in learning environments; otherwise, a dual society will develop based on educational accomplishment (Van Houtte, Demanet, & Stevens, 2012). Researchers have shown that schools and their communities are closely connected, where the schools supply the labor force for the communities (Christle, Jolivette, & Nelson, 2007; Kantor & Lowe, 2007). With the increased drive of standards-based learning using common core standards, many students are being limited in expressing their individual strengths that could provide a workforce for their surrounding community. Goodman et al. (2011) found that with the increased emphasis on standards-based curriculum, many of the life skills and vocational courses are being limited, which could increase students with disabilities' opportunities to develop life careers and increase their graduation rate. Much of the recent research has centered on perceptions of people being affected in the general educational curriculum.

Attitudes About Inclusion Education

Much of the current research has been conducted on the perceptions of teachers' and students' views of inclusion of students with disabilities. General education teachers feel insufficiently trained to effectively meet the needs of inclusion students and desire more effective training and special educator involvement to meet those needs (Flessa, 2009; Fuchs, 2010). This feeling of inadequacy has led to negative perceptions toward

the process of inclusion. Alahbabi (2009) confirmed previous research that stated general education teachers in the United States are more resistant toward inclusion and the higher the grade level, the higher the resistance. This resistance has stemmed from the belief that students with disabilities are not benefiting academically from inclusion in the general educational environment. Hwang and Evans (2011) found that while 58.61% of teachers included in their study felt students with disabilities benefited socially from inclusion, only 24.13% believed those students attained academic benefits. Duflo, Dupas, and Kremer (2009) found that, in schools with homogeneously grouped students, the students scored 0.14 standard deviations higher than students in heterogeneously grouped schools.

Students benefit from homogeneous grouping because teachers spend less time teaching to a wide range of abilities and more time on the specific needs of the students. However, lower-level students' scores increase when placed in classes with higher-level students (Duflo et al., 2009). The lower-achieving students benefited from higher academic surroundings. Fuchs (2010) concluded that the participants in a qualitative study stated that inclusion was a positive educational experience for students and both students with and without disabilities benefited from the experience.

Although some teachers believe that inclusion should be a part of the education curriculum, some teachers feel that they are not prepared to teach the inclusion students. General curriculum teachers support inclusion of students with disabilities, but are anxious about the amount of support and resources available to assist them to teach in the inclusion environment (Litvack, Ritchie, & Shore, 2011). Although teachers prefer

tracking because of classroom management issues, students experienced mixed results when tracking has occurred (Ansalone, 2010). Teacher expectations have long lasting results on student performance, and many teachers have been found to overestimate the academic aptitude of students they like and find easy to manage in class (Hinnant, O'Brien, & Ghazarian, 2009; Tenenbaum & Ruck, 2007).

Students without disabilities in the general curriculum do not believe academic benefits are being attained by students with disabilities. Also, 45.7% of students without disabilities felt that students with disabilities should attend special needs classes, 47.1% believed that students with disabilities should attend special self-contained schools, and a majority of students believed that social integration was not a major educational issue (Mousouli, Kokarids, Angelopoulou-Sakadami, & Aristotelous, 2009). These beliefs can lead to isolation and segregation of inclusion students.

Academic Achievement in Inclusion Education

The pressure to perform academically has been found to decrease inclusion students' interactions with others and increase their feelings of isolation and loneliness (Klassen, Krawchuk, Lynch, & Rajani, 2008; Landin, 2010; McLachlan, & Justice, 2009). Feelings of isolation and loneliness can have a negative effect on inclusion students' performance in the general curriculum. Kepalaite (2010) established that there is not a significant difference of understanding and reasoning between people of different education levels. However, feelings of isolation can appear as though there is a difference.

In an effort to regulate and nationalize education, many states are transferring from the No Child Left Behind (NCLB) legislation to common core, in which the EOCT is a measure of what students have learned during the course instead of a measure for graduation. Common core standards have been developed and implemented in an attempt to reduce the separate educational environments. Harris (2012) stated that opportunities to learn for all students is the basis for the standards-based reform that has been created from the common core curriculum frameworks development. The explicit goal of the common core curriculum is to provide all students the content and performance goals that guide instruction (Harris, 2012).

However, Branyon (2013) found through a case study of the Kenyan national education system that implementing a common curriculum does not assure an equal education. Teachers' ability to deliver instruction and set expectations continues to be an integral piece of the educational experience. Harris (2012) established that, if formal groups are eliminated, true heterogeneous grouping has occurred, and common standards are implemented, social and academic differences will still exist based on inequalities of the educational experiences. Because of educational inequalities, researchers have established that students with disabilities have been tracked into less academic courses of study (Gaumer Erickson et al., 2007).

General curriculum students' course grades are a good predictor of future grades; however, it is difficult to predict future academic ability for students with disabilities based on the students' past test performances (Cho & Kingston, 2011). The National Assessment of Educational Progress (NAEP) found students with disabilities percentages

on standardized tests varied across states and over time (Kitmitto, 2011). Hence, various forms of measurement of student performance need to be utilized to ensure student progress.

Lee (2010) stated that it is critical for schools to utilize multiple assessment measures to provide accountability and inspect discrepancies within assessment results. EOCT's have a greater impact on the grades of students with disabilities. Students with disabilities have a difficult undertaking when attempting to pass EOCTs and the tests have been shown to have an unequal impact on students with disabilities (Zhang, Katsiyannis, & Kortering, 2007). EOCTs account for twenty percent of students' course grades. As the course grades of students with disabilities tend to be lower than those of students without disabilities, the adverse impact of a low EOCT score tends to be greater for students with disabilities.

The general education environment instruction must fit the students' needs because of the greater impact the EOCT's have on students with disabilities. To the contrary, Grodsky, Warren, & Kalogrides, (2009) found little evidence of high stakes testing having a large effect on students' achievement. There was no mention of which students' test results were measured or if inclusion students or students with disabilities were included in the study.

There has been some question as to which type of educational environment best serves student needs. In schools that serve students from low socioeconomic backgrounds, homogeneous groupings did not improve student performance; in fact, the negative effects were strongest among students with the lowest skill levels (Nomi, 2010).

Students must receive instruction based on their current grade level and general education curriculum that is delivered by a knowledgeable, qualified teacher (Fuchs, Seethaler, Fuchs, & Hamlett, 2008). Kim and Hannafin (2011) established that when learners do not possess sufficient prior knowledge and are not provided adequate guidance in their inquiry process; they will develop oversimplified misconceptions that are resistant to change. However, when learned misconceptions must be changed, the educational interventions should be in place long enough for intended changes to take place in students' deficits in academic courses (Fuchs et al., 2008). Students learn when they can identify when they will use what they have learned in the real world.

Students who can apply the knowledge they are expected to retain are better suited and prepared to retain that knowledge. Researchers have found that using real-world problems in classrooms motivate students to solve them and assist in transfer and retention of knowledge (Gilles, Wilson, & Elias, 2010; Lemke & Coughlin, 2009; Offer & Bos, 2009). Douglas (2010) confirmed Vygotsky's theory of the Zone of Proximal Development by establishing students must be ready to receive new information to scaffold on their previous understanding. Students that have previous knowledge to build upon are ready to learn and retain new knowledge.

Nagowah and Nagowah (2009) established that students who can construct their knowledge from previous experiences could create mental models and adapt to new situations. Students can build new knowledge on previous knowledge when it is scaffolded appropriately and the students are ready to receive it (Panasan, & Nuangchalerm, 2010). Pyle and Wexler (2012) established that students who develop a

sense of self-efficacy and feel they are an important member in the learning environment will stay engaged. Educational thought and curriculum development has begun utilizing constructivist theory (Landin, 2010). This constructivist concept of developing and retaining information needs to be researched further and data should be kept to ensure actual change has occurred.

Achievement of all students should be measured utilizing current data which should then drive curriculum decisions. Current education policymakers believe increase in student achievement will only occur if schools base their decisions on data (Schildkamp & Kuiper, 2010). Very little research has been conducted utilizing quantitative data to measure if the inclusion curriculum is truly improving students with disabilities opportunities to graduate from high school. Kortering, McClannon, and Braziel (2008) established that students perform better in school when they enjoy the experience of school and become more engaged in the process at school. Insightful educators have attempted to implement alternative methods of applying the practice of inclusion. Researchers conducted a case study on the implementation of alternative methods of inclusion and they found that as long as the students with disabilities were significantly engaged in the curriculum then the inclusion setting was effective (Eisenman, Pleet, Wandry, & McGinley, 2011).

More research needs to be conducted on whether low-achieving students with disabilities are not achieving based on their response to interventions or whether they had a sufficient opportunity to learn (Cho & Kingston, 2011). Educators tend to believe that initiatives and changes occur often in education. "As with all educational innovations,

understanding the spirit of the initiative, which is in the present case, instructing a heterogeneous group of students within the same classroom is key when understanding the modal means of implementation" (Kilanowski-Press, Foote, & Rinaldo, 2010, p. 46). A pragmatic solution to incorporating inclusion education would limit the negative state of mind that educators have towards the program (Paliokosta & Blandford, 2010).

Implications

The project study was designed to explore whether a significant difference exists between current heterogeneous grouping and previously homogeneous grouping in senior economics at Southeast High School. The policymakers of Southeast High School and its Board of Education will be presented with the results of this study. The data and results contain immediate applications, are clear and brief, and easy for policymakers to understand. The report being prepared was written in an understandable form such that the intended audience could comprehend the data and results (Creswell, 2012).

An executive summary will be presented to illustrate the findings to the stakeholders in terms and vocabulary that are easily understood (Walden, 2012). The report focused on outcomes of the statistical tests utilized. The results were summarized emphasizing the key findings. Reports for policymakers will be a one-page summary highlighting the key findings and implications for the curriculum. The summary focuses on the problem studied, research questions, major results, and implications for future practice.

A project (Appendix A) was created using a professional development evaluation. This professional development evaluation contains a training plan broken down into

modules. A brief summary, similar to the one given to the board of education and administration, will be presented at the first module. Modules are units designed to encourage participants to discuss issues, investigate meanings, and possible solutions to issues (Avargil, Herscovitz, & Dori, 2012; Ellery, 2006).

The possible implications of this project study may change the placement and academic expectations of inclusion students and their least restrictive environment. This project study may demonstrate that inclusion students have the ability to perform at a higher academic level than previously believed by being placed with higher academically achieving students. If inclusion students' exhibit increased academic ability as evidenced by passing the EOCT and subsequently the academic course, then the graduation rate of inclusion students should also rise.

Summary

Southeast High School is a suburban school in middle Georgia that receives Title I funding because of the low socioeconomic status of students it serves. While the inclusion of students with disabilities continues to rise at Southeast High School, the graduation rate of students with disabilities at this school has declined. One course that has important implications for graduation is senior economics. The senior economics course is the only senior course that is required for graduation, and has an EOCT as part of its course requirements.

For many years, the student population at Southeast High School has been placed on an academic track based on past academic performance, which led to homogeneously grouped classes. Recently, the leadership team decided to group students

heterogeneously in senior economics. This study investigated whether significant differences in achievement among inclusion students have resulted from the transition from homogeneous to heterogeneous class grouping.

The literature review summarized the current research on the conceptual framework for this study, ability grouping, and inclusion education. The current research on ability grouping is contradictory. Some research displayed positive effects of homogeneous grouping, but stated characteristics such as high socioeconomic backgrounds were shared. Some research showed students from low socioeconomic backgrounds and students who were lower skilled academically benefited from heterogeneous grouping. The research showed that while the percentage of inclusion of students with disabilities in the general education curriculum and the dropout rate of students with disabilities is increasing, the graduation rate of these students is decreasing nationwide.

The practical implications of this study could change the academic placement of students at the local setting. Students with disabilities could benefit from integration with students of all academic abilities. If a significant difference exists, the perceived benefits to inclusion students could lead to higher passing and graduation rates for inclusion students.

Section 2 is a thorough description of the mixed-methods design used to explain whether a significant difference exists between homogeneously grouping and heterogeneously grouping of inclusion students in senior economics. This section

contains the setting, sample, strategies utilized, data collection, data analysis, and the measures taken to protect the participants.

Section 3 describes the project designed from the data analysis. The project was designed as professional development modules intended to provide general education teachers and inclusion teachers support on implementing heterogeneously grouped classrooms. Section 4 contains reflections and conclusions of the project study. Self-analysis of what was learned about conducting the study and completing the project is included. This section also has recommendations and implications for future research as well as implications for social change from the results of this project study.

Section 2: The Methodology

Introduction

Pragmatic researchers do not use just one method to determine results. Pragmatism is concerned with drawing data from multiple sources, both qualitative and quantitative, to inform the research (Creswell, 2009). Therefore, a mixed method approach was employed to explore the practical knowledge concerning the effectiveness of heterogeneous grouping in senior economics at Southeast High School. A mixed methods research design was used for this study with an emphasis on quantitative design. Mixed methods research designs contain both quantitative and qualitative elements, with an emphasis on one or the other, in an attempt to completely investigate the problem (Creswell, 2009). The benefit of employing a mixed methods research design is that the qualitative data analysis is intended to contextualize, enhance, and enrich the quantitative data analysis.

This was a sequential explanatory design. Creswell (2009) defined sequential explanatory design as a strategy that involves the gathering and analysis of quantitative data followed by the gathering and analysis of qualitative data in two separate phases. Creswell explained that quantitative research adds precise measurement and statistical analysis to a study. The qualitative research design includes interviews in an attempt to add depth to the quantitative data. Lodico et al. (2010) stated that explanatory designs place an emphasis on the quantitative data and the qualitative data are employed to illuminate the quantitative findings.

Quantitative data were analyzed using a *t*-test. The *t*-test was used to show if significant differences exist between current passing rates with heterogeneous grouping and past passing rates with homogeneous grouping. A *t*-test was used to determine whether a significant difference exists between group means of interval data (Green & Salkind, 2011; Lodico et al., 2010; Plonsky, 2011). The independent variable was the course section in which students were enrolled. The dependent variables were the EOCT percent passed grade, course percent passed grade, and graduation rates. Heterogeneous grouping was compared to homogeneous grouping of inclusion students.

Qualitative data were then gathered using interviews. The interview questions were pilot tested for reliability and credibility. The participants for all interviews were adults who are no longer attending Southeast High School, current faculty, and former faculty. The trends that emerged from the qualitative data could explain the quantitative data analysis.

Setting and Sample

The sample frame for this study consisted of all senior students with disabilities who have taken economics at Southeast High School over the past 6 years. Archival data were used to gather students' scores in the senior economics course. Lodico et al. (2010) explained that, for populations less than 200, the entire population should be sampled, which is considered a census sampling. There have been less than 60 inclusion students in senior economics over the past 6 years. The entire population of inclusion students of the homogeneous grouping and the heterogeneous grouping was used in the sampling frame. Because the entire population was used, the sampling error was reduced to a

minimum (Creswell, 2012). The student scores were recorded from the archival data and stored.

A document was prepared and presented to the superintendent outlining the project study, the project study's purpose, the participant scores being used, and the measures being used to ensure confidentiality. The special education students in the homogeneous group were designated as HO1, HO2, and so on. The special education students in the heterogeneous group were designated as HE1, HE2, and so on. All codes and original documents with students' names and scores are stored in a locked safe in an undisclosed location. They will remain in this location for 5 years after the completion of the project study, at which time all documentation will be destroyed.

The ideal population from which to select participants to interview would be all Georgia economics teachers, special education inclusion teachers, and students. Realistically, the sample frame for the interview portion of this study was limited to adult-aged inclusion students who were no longer attending Southeast High School and faculty members. Qualitative sampling most often employs purposeful sampling techniques (Creswell, 2009; Lodico et al., 2010). Former inclusion students were selected for participation in the interviews through purposeful random sampling. Faculty members were selected for participation in the interviews through typical case sampling. Access to the school faculty was gained with their permission as well as the school administration's permission. All 13 interview participants were provided their rights and asked to sign a consent form. Interviews were conducted with the following faculty members: a previous economics teacher, the current economics teacher, the special

education department head, and two inclusion teachers. The two economics teachers had taught the class over the course of administering the EOCT and, therefore, provided the only insight into possible trends emerging from heterogeneous and homogeneous groupings.

The guidance department at Southeast High School keeps updated records on former students. Access to those students was gained through the guidance department at Southeast High School, and they were asked for their permission for the interview. The adult-aged inclusion students were randomly chosen from a purposefully selected group and asked to participate in the study in person. All inclusion students were over 18 years-old and were no longer attending or associated with Southeast High School.

Each heterogeneously-grouped participant's previously assigned number was put into a computer-generated randomizer and four random numbers were selected. Each homogeneously-grouped participant's previously assigned number was put into a computer generated-randomizer and four random numbers were selected. Interviews were conducted with a total of eight former inclusion students. This selected sample of former students presented with the following characteristics: 50% were from a heterogeneous economics course grouping, 50% were from a homogeneous course grouping, 50% had earned a high school diploma, and 50% had not earned a high school diploma.

All participants were asked to read and sign a letter of consent (Appendix D). I was employed as a mathematics teacher at Southeast High School but had no contact with the economics class or special education department. My experience with the

participants did not affect the collection or analysis of the data. I held no biases. All participants and responses were coded and sealed. Only the coded forms were used for analysis to reduce the possible influence of researcher preconceptions to a minimum.

Administration Consent

A letter of cooperation (Appendix B) was presented to the school district superintendent. The superintendent signed the letter of cooperation agreeing to all terms within the letter. A letter of cooperation (Appendix C) was presented to the school building principal. The principal signed the letter of cooperation agreeing to all terms within the letter.

Quantitative Sequencing of Design

Archival data were collected from the school guidance office. The school guidance office had raw scores of each individual student's EOCT score, their senior economics course grade, and whether the student graduated from Southeast High School. The raw scores of inclusion education students from homogeneously and heterogeneously grouped classes were collected. The raw scores were EOCT, course passing, and graduation. These data were classified as interval data. Interval data can be placed in categories, have ranking, and equal spacing; the distance between scores is equal (Green & Salkind, 2011; Lodico et al., 2010; Plonsky, 2011). The data were used to examine differences in EOCT passing, course passing, and graduation when comparing inclusion students from homogeneously grouped classes to those from heterogeneously grouped classes. The independent variable was the class grouping of the students. The dependent

variables were the EOCT score, course passing, and high school graduation. The formal test used was the EOCT in economics.

End-of-Course Test Validity and Reliability

The Georgia Economics EOCT adheres to established standards for testing. Standards for Educational and Psychological Testing, American Educational Research Association, American Psychological Association, and the National Council on Measurement in Education (GADOE, 2013) have established the EOCT construction and testing practices. All Georgia EOCTs are measured for content validity, construct validity, and reliability.

The Georgia Economics EOCT was measured for content validity using four methods. First, a Georgia Department of Education committee reviews the curriculum to establish which skills and concepts should be assessed (GADOE, 2013). Secondly, trained, professional assessment experts specifically for Georgia tests (GADOE, 2013) construct items. Next, Georgia educator committees that review each test item for potential bias, test suitability, curriculum alignment, and cultural sensitivity (GADOE, 2013) review the test items. Lastly, accepted items are placed on field tests that are designed to confirm the test items are testing what they are designed to test (GADOE, 2013). GADOE (2013) stated, "Only after items have been field tested and approved by Georgia Educators do they appear on an operational test form" (p. 3).

Construct validity is the degree to which a test measures the psychological characteristic it is designed to measure. The Georgia Economics EOCT was measured for construct validity using two methods, item point-biserial correlations and Rasch fit

statistics (GADOE, 2013). This is a continuous process of measuring construct validity. The item point-biserial correlation was used to demonstrate a correlation exists between answering a test item correctly and scoring high on the overall test (GADOE, 2013). If an item was found to have a high point-serial correlation, it will remain on the test, if the item has a poor point-serial correlation it will be removed to go through the content validity process again (GADOE, 2013). The Rasch fit statistics are monitored during the construction of the test to ensure evidence on construct validity (GADOE, 2013). The Georgia Economics EOCT is a valid measurement of student understanding of curriculum concepts found in the Georgia Economics Curriculum (GADOE, 2013).

For the Georgia Economics EOCT to be valid it must also be reliable. The EOCT has undergone two reliability indices. Cronbach's alpha reliability coefficient demonstrates the consistency of test scores as a ratio of true score variance to true score variance plus error variance (GADOE, 2013). The reliability coefficient for the Georgia Economics EOCT for the summer of 2011 was 0.94, winter 2011 form 1 was 0.90, winter 2011 form 2 was 0.91, spring 2012 form 1 was 0.91, and spring 2012 form 2 was 0.90 (GADOE, 2013). Cronbach's alpha reliability coefficient measured the internal consistency of the test and found the test to fall within the accepted range for criterion-referenced tests (GADOE, 2013).

The second measure of reliability used was the Standard Error of Measurement (SEM). Lodico et al. (2010) defined the SEM as a measurement that explains the reliability coefficient of the test and the variability of the scores of the norm group. The SEM is calculated by the following formula:

$$SEM = SD \sqrt{1 - r}$$

where r is the reliability coefficient and SD is the standard deviation (Lodico et al., 2010). The Georgia Economics EOCT SEMs for the following administrations were as follows: summer 2011 was 3.57, winter 2011 form 1 was 3.56, winter 2011 form 2 was 3.48, spring 2012 form 1 was 3.58, and spring 2012 form 2 was 3.55 (GADOE, 2013). The SEM demonstrated a realistically small error band and indicated the EOCT has a high degree of reliability.

Data Analysis and Validation

Quantitative data was entered into SPSS version 22.0 for Windows for analysis. Data was screened for accuracy, missing data, and outliers or extreme cases. Descriptive statistics and frequency distributions were conducted to determine that responses are within possible range of values and that the data was not distorted by outliers. The presence of outliers was tested by the examination of standardized values, or *z* scores, on the continuous variables of interest in the study: EOCT scores and course grade scores. Standardized values were created for each of these variables and were examined for values that fall above 3.29 and values that fall below -3.29; which are the standard parameters set for extreme cases (Tabachnick & Fidell, 2012). This study did not have any outliers.

Research Question 1

To what extent do inclusion students' passing rates in senior economics differ for inclusion students in heterogeneous versus homogeneous classes at Southeast High School?

Research Question 2

To what extent do inclusion students' passing rates on the senior economics End-of-Course Test differ for inclusion students in heterogeneous versus homogeneous classes at Southeast High School?

To assess research questions one and two, two independent samples *t*-tests were performed. The independent sample *t*-test is the appropriate statistical analysis when the scope of a research question is to assess if differences exist on a continuous (interval/ratio) dependent variable by a dichotomous grouping independent variable (Pagano, 2010).

The assumptions of normality and homogeneity of variance were assessed. Normality was assessed with a Shapiro Wilks Test; one test was conducted per dependent variable. Homogeneity of variance assumes that both groups have equal error variances and was assessed using Levene's test; one test was conducted per dependent variable with group (homogeneous vs. heterogeneous). The *t*-test was two-tailed, with an alpha level, or the probability of rejecting the null hypothesis when it is true, set at $p < 0.05$ to ensure a 95% confidence that differences did not occur by lone chance.

Research Question 3

To what extent do heterogeneously grouped inclusion students' graduation rates differ from homogeneously grouped inclusion students at Southeast High School?

To assess research question three, a chi square test-of-independence was performed to determine if a statistically significant relationship exists between class type (heterogeneous vs. homogeneous) and graduation status (yes vs. no). Chi square is an appropriate hypothesis test when the research is interested in the relationship between two nominal/discrete variables. For the analysis, row and column percentages were interpreted for each variable. To determine significance of the results, the calculated chi-square coefficient (x^2) and the critical value coefficient were compared; when the calculated value is larger than the critical value, given the degrees of freedom and an alpha of 0.05, this suggests a significant relationship.

Prior to analysis, the assumptions of chi square were assessed. For chi square to operate properly, data must come from random samples of multinomial mutually exclusive distribution, and the expected frequencies should not be too small. No fewer than 10 counts in any cell of the contingency table should exist for the chi square test (Pallant, 2007). If the assumptions are not met, then Fisher's Exact Test of Probability will be conducted. Observations should be independent of one another; participants can only contribute one observation to the data (the row and column totals should be equal to the number of participants) (Howell, 2010).

Quantitative Results

Data were collected and examined from 42 cases: 31 cases were from the homogeneous group and 11 cases were from the heterogeneous group. Data were assessed for univariate outliers on the two continuous variables of interest: EOCT scores and course grade scores. No univariate outliers were found in the data set.

Research Question One

To what extent do inclusion students' senior economics passing rates differ for inclusion students in heterogeneous versus homogeneous class at Southeast High School?

To examine the first research question, an independent sample *t*-test was conducted to assess if there was a statistically significant difference in course grade scores by class type (homogeneous vs. heterogeneous). Statistical significance was determined using an alpha level of 0.05. Prior to analysis, the assumptions of normality and homogeneity of variance were assessed. The assumption of normality on course grade scores was assessed using a Shapiro-Wilk test. The result of the test was not statistically significant, $p = .134$, thus meeting the assumption of normality. The assumption of equality of variance was assessed using a Levene's test. The result of the test was not significant, $p = .670$, indicating this assumption of equality was met.

The results of the independent sample *t*-test were not statistically significant, $t(40) = -0.87$, $p = .390$, suggesting that there was not a statistical difference in course grade scores by class type (homogeneous vs. heterogeneous); no statistical significance can be interpreted. Results of the independent sample *t*-test are presented in Table 1.

Table 1

Independent Sample t-Test for Course Grade by Class Type (Homogeneous vs. Heterogeneous)

			Homogeneous		Heterogeneous	
Variable	*t*(40)	*p*	*M*	*SD*	*M*	*SD*
Course grade	-0.87	.390	71.29	8.94	73.91	7.45

Research Question Two

To what extent do inclusion students' passing rates on the senior economics End-of-Course Test differ when heterogeneously grouped compared to homogeneously grouped at Southeast High School?

To examine the second research question, an independent sample *t*-test was proposed to assess if there was a statistically significant difference in EOCT scores by class type (homogeneous vs. heterogeneous). Statistical significance was determined using an alpha level of 0.05. Prior to analysis, the assumptions of normality and homogeneity of variance were assessed. The assumption of normality was assessed on EOCT scores using a Shapiro-Wilk test. The result of the test was statistically significant, $p = .007$, thus violating the assumption of normality. The assumption of equality of variance was assessed using a Levene's test. The result of the test was significant, $p = .011$, indicating this assumption of equality was not met. Because of these violations, the appropriate non-parametric analysis was conducted: a Mann Whitney U test.

The results of the Mann Whitney U test were statistically significant, $z(42) = -2.58$, $p = .010$, indicating that there was a statistical difference in EOCT scores by class type. Those cases in the heterogeneous group had statistically significantly higher EOCT scores ($M = 66.00$) than those cases in the homogeneous group ($M = 55.71$). Results of the Mann Whitney U test are presented in Table 2.

Table 2

Mann Whitney U Test on EOCT Score by Class Type (Homogeneous vs. Heterogeneous)

			Homogeneous		Heterogeneous	
Variable	*z*(42)	*p*	*M*	*SD*	*M*	*SD*
EOCT score	-2.58	.010	55.71	7.48	66.00	12.30

Research Question Three

To what extent do heterogeneously grouped inclusion students' graduation rates differ from homogeneously grouped inclusion students at Southeast High School?

To examine research question three, a chi square test-of-independence was conducted to assess the relationship between graduation rates (yes vs. no) and class type (homogeneous vs. heterogeneous). Statistical significance was determined using an alpha level of 0.05. Prior to analysis, the assumption of the chi square was assessed: no fewer than 10 counts in any cell of the contingency table (Pallant, 2007). This assumption was not met and thus, Fisher's Exact Test of Probability was reported.

The results of the analysis were not statistically significant, $p > .999$, suggesting there was no statistical relationship between graduation rates and class type; no statistical significance can be interpreted. The results of the analysis are presented in Table 3.

Table 3

Fisher's Exact Test of Probability between Graduation Rates and Class Type

	Class Type		
Graduation	Homogeneous	Heterogeneous	*p*
No	21 [20.7]	7 [7.3]	>.999
Yes	10 [10.3]	4 [3.7]	

Note. Numbers in brackets represent the expected values of the cell.

Qualitative Sequencing of Design

Faculty Pilot Testing

Pilot testing was conducted on the interview questions for faculty and administration. Lodico et al. (2010) described pilot testing as a method where a similar group of people to those being sampled read the interview and exam it for clarity of language, basic spelling, and grammar. "A pilot test of a questionnaire or interview survey is a procedure in which a researcher makes changes in an instrument based on feedback from a small number of individuals who complete and evaluate the instrument" (Creswell, 2012). Four faculty members of Southeast High School were asked to pilot test the interview document (Appendix E).

The four faculty members were randomly selected from the special education department, social studies department, English department, and administration. One member from each department was randomly selected using a computer generated randomizer. Each selected faculty member was then assigned a number, one through four. Faculty members had been preselected for participation in the formal study interviews through typical case sampling due to their involvement with the subject

matter. These faculty members were deleted from the sampling pool of participants before the pilot test sampling was conducted. Each member of the pilot test contributed similar findings in regard to the interview questions. Pilot test participants identified a simple numbering issue, noting that one interview question was not numbered. The pilot test participants found no spelling or grammatical mistakes and stated that the instrument was clear and concise.

Former Student Pilot Testing

The remaining former inclusion students were given a number one through 34, and four of them were randomly selected utilizing a computer generated randomizer. Four former inclusion students, who are no longer involved with the school, were contacted and asked to participate in pilot testing the former student interview questions (Appendix F). They were asked to look for possible spelling and grammar errors, and to evaluate clarity of the interview questions. All participants stated that the interview questions were clearly understandable and free from errors.

Former inclusion students were contacted for participation in the interviews through the school's guidance counselor's office. Faculty members were contacted on site for participation in the interview with the permission of the site and school district administration. The interviewees were asked to participate voluntarily in an interview. The participants were asked to sign a consent form acknowledging they are participating voluntarily, outlining the purpose of the study, how the answers to the questions will be used in the study, identifying the researcher, stating how the participants were selected,

the benefits and risks of participating in this study, guaranteeing that participants can withdraw from the study at any time without penalty, and a guarantee of confidentiality.

Interviews were conducted with 13 participants. Each interview lasted approximately 30 minutes and questions centered on the interviewees' perception of the change from homogeneous grouping to heterogeneous grouping. Interviews were conducted in the school interview room, which is secluded and sound proof, outside of normal school hours. The interviews were tape recorded on a small handheld tape recorder.

Creswell (2009) outlined elements of a proper consent form and many of those are included in the previous list. All participants have had a previous relationship with the researcher as a colleague or former student of the school site. The researcher does not hold a supervisory position over any of the participants. Participants, as stated in the consent form, have the right and freedom to withdraw from the study at any time without penalty. A researcher-participant working relationship was outlined by the introduction of the interview purpose. The researcher is a mathematics teacher at Southeast High School, and is not associated with the Social Studies Department, which contains the economics curriculum. The researcher has not been a mathematics teacher to any students no longer connected with the school, who could be participants in the interviews.

Data Analysis and Validation

The qualitative data from the interviews was used to add depth and understanding to the quantitative data by describing faculty and student perceptions concerning the impact of heterogeneous versus homogeneous grouping. Qualitative data was checked

for reliability by providing a thorough description of the research approach (Creswell, 2012; Creswell, 2009; Lodico et al., 2010).

The qualitative data were prepared by transcribing the interviews from the tape recorder and then organized. The interview data obtained from faculty members were grouped together and interview data from former students were grouped together.

The qualitative data were then reviewed and coded. The interview transcripts were read in an attempt to separate the material into manageable chunks. The smaller portions of the interview transcripts were then coded into categories. Themes developed from the categories. These themes provided organizing ideas to assist in explaining what was learned from the interviews. The data were used to assist in explaining whether or not a significant difference exists between heterogeneous grouping of inclusion students and homogeneous grouping of inclusion students in the senior economics course at Southeast High School.

The qualitative data was checked for validity. "Validating findings means that the researcher determines the accuracy or credibility of the findings through strategies such as member checking or triangulation" (Creswell, 2012, p. 259). After the interviews were transcribed the interviewees were allowed to read the transcripts to ensure what they said was truly what they meant. Member checking is a recognized form of validity by allowing participants to check the accuracy of the interview (Creswell, 2012; Lodico et al., 2010). Data triangulation is the process of using multiple sources of data to corroborate the evidence of the data.

Qualitative Results

The transcribed participant interview responses were examined for common patterns and themes. The themes included in this section were chosen for their relevance to the central qualitative research question: How do participants perceive the effects of the change from homogeneous to heterogeneous grouping of inclusion students in senior economics classes? The following six themes emerged among the 13 participant responses:

1. Heterogeneous class grouping has been beneficial for inclusion students.
2. Inclusion teachers and special accommodations are important for inclusion students.
3. Inclusion students are better behaved and more focused in heterogeneously grouped classes.
4. Peer teaching has become a beneficial educational tool for inclusion students in heterogeneous classes.
5. Heterogeneous classes are perceived as offering more resources, materials, and time than homogeneous classes.
6. Students benefit most from being grouped according to ability to participate and individual needs.

In addition to overall thematic analysis, participant responses were also analyzed for themes based on the following categories: (a) former inclusion students and (b) current and former faculty members. Ancillary analyses consisting of thematic analysis of participant responses by group will be detailed in subsequent subsections of this section.

Benefits of heterogeneous class grouping. Interview participants generally attributed a host of positive changes to the heterogeneous grouping of inclusion students. While some participants were hesitant to attribute specific improvements to heterogeneous grouping, they reported general improvement among inclusion students since making the transition. Participant T-1 stated:

> I can just observe that it has benefitted them it appears that they do better in class, do better on their tests, do better overall, as far as saying more have passed, I don't know because I have not looked at that data.

Other participants similarly noted positive changes associated with heterogeneous grouping. Participant T-2 reported, "I have noticed that there is an improvement with heterogeneous grouping." This participant went on to add, "I have seen that more students are able to pass in the heterogeneous grouping than with the homogeneous grouping." Participant T-4 echoed this sentiment saying, "In my opinion I think there has been a difference there. I think there has been improvement." Participant HO-17 reported increasing graduation rates among inclusion students as a recent phenomenon, stating, "I think more inclusion students are graduating with regular diplomas. I think more of the inclusion students I know are graduating and going to colleges." Participants HE-11 and HO-15 added more support to this claim, reporting increasing passing rates and graduation rates among inclusion students.

Importance of inclusion teachers and special accommodations. Several participants discussed the importance of inclusion teachers and special classroom accommodations in improving the academic achievement of inclusion students. These

factors seemed to be salient determinants of student success across homogeneous and heterogeneous groupings. Participant HE-1 remarked on the importance of the inclusion teacher in the heterogeneously grouped class saying, "She really supported us, she really helped us with all the notes and stuff. She made sure we was [*sic*] prepared for any test or quiz that we had." Participant HE-11 offered a similar account reporting, "The extra support helped me. The inclusion teacher broke the material down to where I could understand it. The inclusion teacher was able to explain the material in detail making it easier for me." Participant HO-15 gave a similar report from the perspective of a homogeneously-grouped student. Participant HO-15 stated, "I passed [economics] because I did more studying and I got more help with my testing by having it read to me and the answer choices read to me. The inclusion teacher made the main difference in this class." Participant T-5 also noted the role of the inclusion teacher in discussing the collaborative nature of educating inclusion students saying, "I and the inclusion teacher worked extensively as a team to help bring the inclusion students along." Participant T-5 went on to describe the special accommodations made for the inclusion students including "allowing them to turn in all missing work until the end of the course, extended time, fewer questions, fewer answer choices, simplified questions, simplified content…" Participant T-2 also discussed special classroom accommodations made for the inclusion students saying:

> We differentiate maybe how we teach based on the kid's learning styles. You can differentiate the product that way too. If a kid is more of a visual learner or an auditory learner you can kind of adjust how they deliver what they know to you. I

think those ways are probably the most effective to do that based on learning styles.

Improved behavior and increase focus as a result of heterogeneous grouping. Participants noted behavioral and achievement differences among inclusion students when placed in a heterogeneously-grouped classroom. In describing the experience of being in a heterogeneously-grouped class, Participant HE-3 stated, "Not being around the other people that misbehaved, I wasn't distracted. I could focus more on the material." Participant HE-6 expressed a similar point, reporting that being in a heterogeneous class assisted in the passing of the economics EOCT. Participant HE-6 stated, "I think it made it easier to take the test. I was better prepared. The class wasn't trying to play around all the time, they stayed more focused." The participant went on to say, "Limited distractions helped me to stay focused." Participant HO-5 discussed the experience from the perspective of a homogeneously-grouped student reporting, "In my classes…we had a lot of behavior problems where regular students would get in trouble. The extra distractions I think caused the inclusion students to either fall further behind, misunderstand the material, or participate in the misbehavior."

Faculty interview participants tended to express a similar viewpoint, maintaining that inclusion students demonstrated better behavior and greater achievement when heterogeneously-grouped. Participant T-3 remarked, "I have observed a lot more behavior problems homogeneously than heterogeneous." Participant T-3 continued saying, "I think you have some better behaved [in heterogeneous classes]. Those higher academic kids behave and that then transfers over to those others that want to misbehave

in class and are not as willing to misbehave." Participant T-5 added support to this assertion saying:

> Inclusion students can understand the material when they are separated. When they are with their peers they tend to be more driven, more ready to learn, and tend to grasp the material. It takes away from all the other distractions they may be having when grouped together in the same ability.

Peer teaching as an educational tool in heterogeneous classes. Many participants cited the pairing of higher-ability students with lower-ability students as a valuable educational tool. Both faculty and former student interview participant cited the enabling of inclusion students to learn directly from higher-achieving students as a primary benefit of heterogeneous class grouping. Participant T-1 described this process in detail by stating the following:

> Again I think you get more of a mixture of students where you can group students with a higher level of knowledge with students who aren't completely grasping the material. You can group them that way. And, maybe get some of the help that a teacher can't give. You get more individualized help that way from peer assisted learning.

Participant T-3 similarly reported, "Mainly grouping, putting them with the higher academic students. Having a high, middle, and lower where they are all helping each other out. That's been the main strategy."

Former student participants also acknowledged the value of peer assisted learning in heterogeneous classes. In discussing experiences in heterogeneous classes, Participant

HE-11 stated, "I also had access to other students, who understood the material better than me, and could help me through group work." Participant HO-13 reported, "I think all the students should be combined together (heterogeneous) because the main thing is they are helping each other. I think that's what helps students graduate. Mixing students allows for study groups." Participant HO-5 similarly stated, "I had many friends that were not inclusion students and I would have liked to have been in class with them and they could have helped me study and complete my assignments."

Perception of greater resources, materials, and time in heterogeneous classes. Based upon participant responses, a common perception was that heterogeneous classes tended to have greater resources, more materials, and enabled more student-teacher interaction. Participant T-2 reported, "I think with heterogeneous grouping you get more teacher-to-student interaction and more student-to-student interaction." Participant T-2 added, "It allows you to do a lot more especially in preparation for a test. You can do remediation on certain topics and I can help individuals, that is beneficial." Participant HO-15 offered a conjecture concerning the effect that heterogeneous grouping might have had on their preparation for the EOCT. Participant HO-15 reported the following:

> I think [my preparation] would have changed. I would get more time to study and prepare for the test than what I had in the homogeneous class. I think the teacher would be able to have more materials to use to study for the test.

Participant HO-17 also pointed to perceived time constraints as a drawback of homogeneous grouping. Participant T-4 offered a similar view of heterogeneously-grouped classes, stating the following:

> There are more opportunities, more practice, and more things available to get inclusion students to understand the concepts. There are more ways to get the material across to the students in a sense they can understand it and grasp it. We have more resources available now in terms of technology. There are more opportunities to use the internet for extra and extended practice.

Grouping by ability to participate and individual needs. Despite giving generally positive descriptions concerning heterogeneous grouping, many participants suggested that grouping students based upon individual needs and ability level would be the most effective option. Participant T-2 explained this concept with the following statement:

> I think it depends on the student. I don't want to say all students that have a disability or who are special needs need to be segregated. I think there are students who need that. I think that's the whole idea. Each student has that individualized education plan and I think that when you get a committee together and you look at those things you have to decide is this student going to be productive in an inclusion setting and if not maybe we need to put them in a segregated special education class. It's hard for me to say one is better than the other. I just think that you have to look at each individual student.

Participants T-4 and T-1 also championed the use of individual ability and need as a basis for grouping students. In addition to faculty participants, former student participants also expressed this view.

Five of the eight former student participants recommended this form of academic grouping. Participant HO-17 stated, "I think it depends on the individual student. If they cannot handle the work or continuously misbehave in class they should be put in a separate class to learn." Participant HE-1 recommended the student's assessment of their own ability to keep up in the course as the guiding factor in determining class grouping. Four of the other participants pointed to the students' demonstrated ability to keep up in the course as the determining factor in class grouping.

Summary. The qualitative portion of this project study was designed to enrich and contextualize the quantitative data gathered in this study. Interview questions were aimed at eliciting information from participants to more fully answer the following question: How do participants perceive the effects of the change from homogeneous to heterogeneous grouping of inclusion students in senior economics classes? In examining the responses of participants, six primary themes emerged. Heterogeneous class grouping was perceived as a positive and beneficial change for inclusion students. Inclusion teachers and special educational accommodations were viewed as an integral part of the success of inclusion students, regardless of class grouping style. Heterogeneous grouping has led to a decline in behavioral problems and an increase in focus and directedness among inclusion students. Peer-assisted teaching was seen as an important advantage of heterogeneous class grouping. Heterogeneous classes were perceived as offering more resources, materials, and time than homogeneous classes. Despite generally positive reviews of heterogeneous grouping, participants tended to

suggest that students benefit most from being grouped according to ability to participate and individual needs as outlined by their Individual Education Program (IEP).

Data Triangulation

Data were collected from multiple sources in an attempt to triangulate the data. Quantitative data was gathered from course grades, EOCT tests, and graduation rates. Qualitative data was collected using interviews. Data triangulation is the process of collecting data using more than one collection technique (Lodico et al., 2010). Creswell (2012) defined triangulation as supporting evidence from multiple individuals or using different data collection methods.

The quantitative and qualitative findings were compared to one another to assess the relationships found regarding class grouping and passing rates. The quantitative results for research question two were significant and indicated that the heterogeneous group did better than the homogeneous group on EOCT scores. This same finding was illustrated throughout the interview as well. As outlined in the thematic analysis, allowing the mixing of the two groups helps them both progress together. This was exemplified by Participant HO-13's statement, "I think all the students should be combined together (heterogeneous) because the main thing is they are helping each other. I think that's what helps students graduate. Mixing students allows for study groups." Thematic analysis also outlined the heterogeneous class had benefits when compared to the homogeneous group, along with better behavior, focus, and resources. Participant HE-6 expressed this sentiment, "I think it [being in a heterogeneous group] made it easier to take the test. I was better prepared. The class wasn't trying to play around all the

time, they stayed more focused." Similarly, Participant T-2 reported, "I think with heterogeneous grouping you get more teacher and student interaction." The similarities found with the quantitative and qualitative results help support the utilization of this study in exploring whether a significant difference exists between current heterogeneous grouping and previously homogeneous grouping in senior economics at Southeast High School.

Ancillary analyses. In addition to overall analysis of themes among all interview participants, participant responses were also examined by the following subgroups: (a) former inclusion students at Southeast High School, and (b) former and current faculty members of Southeast High School. Eight (62%) of the participants were former inclusion students. Five (38%) of the participants were current or former faculty members of Southeast High School. The themes emerging from the analyses of these subgroups are detailed in the sections to follow.

Former Inclusion Students. Eight of the interview participants were former inclusion students. None of the former student participants were still affiliated with Southeast High School at the time of the interview. Four of the student participants had participated in homogeneous class grouping. The remaining four had participated in heterogeneous class grouping. The responses of the former inclusion students were examined for themes specific to these participants. The themes of these responses were also analyzed to highlight differences and similarities with those presented by the faculty member participants. Among former inclusion students, the following themes were observed:

1. Heterogeneous class grouping was perceived as beneficial for inclusion students.

2. Inclusion teachers and special accommodations in the classroom were seen as important components of material mastery and academic success.

3. Inclusion students misbehave less and focus more in heterogeneous classrooms.

4. Peer education has become an important learning tool in heterogeneously grouped classes.

5. Participants perceived more time for learning, more access to materials, and more teacher attention in heterogeneous classes.

6. Inclusion students should be grouped based upon ability to keep up and individual needs.

Benefits of heterogeneous class grouping. Participants who were former inclusion students reported favorable attitudes toward heterogeneous class grouping. The general perception among these participants was that inclusion students have seen positive gains since the introduction of heterogeneous grouping. Five of the former student participants identified increasing graduation rates as an outcome of the transition to heterogeneous grouping. Participant HO-5 stated, "It seems like more kids from our school are staying in school and graduating than when I was in school. We had a lot of kids and inclusion kids drop out of school." Participant HO-17 offered more support for this claim saying, "I think more inclusion students are graduating with regular diplomas…I think more of the inclusion students I know are graduating and going to

colleges." Some participants also pointed to increased course passing among inclusion students as a benefit of heterogeneous grouping. Participant HE-11 stated, "I think more inclusion students are passing classes at the high school." Participant HO-17 similarly indicated the belief that heterogeneous class grouping might have helped in earning a passing grade in the senior economics course when they were in school.

Impact of inclusion teachers and special accommodations. The former student interview participants often cited the inclusion teacher as an important factor in their educational experience. Five participants made specific mention of the inclusion teacher's role in their academic success. Participant HE-11 explained, "The extra support helped me. The inclusion teacher broke the material down to where I could understand it. The inclusion teacher was able to explain the material in detail making it easier for me." Participant HE-1 expressed a similar opinion stating, "[The inclusion teacher] really supported us, she really helped us with all the notes and stuff. She made sure we was [sic] prepared for any test or quiz that we had."

In addition, many of the former student participants referenced the importance of special classroom accommodations in aiding the learning process. In describing some of these accommodations, Participant HE-6 stated, "I was able to draw pictures to show what I knew instead of just filling out a study guide. Completing the projects helped me to understand the material more than filling out worksheets." Participant HO-15 credited passing senior economics to these accommodations stating, "I passed it because I did more studying and I got more help with my testing by having it read to me and the answer choices read to me." Participant HO-5 described a similar experience recalling,

"We (the inclusion students) were taken out of the class when behavior was very bad, when we had a large assignment, and when we took tests. Our tests were read to us and that helped me a lot to understand the questions."

Decline in misbehavior and distraction in heterogeneous classes. Former student interview participants reported that inclusion students have exhibited less acting out behaviors because of heterogeneous grouping. They also report a general increase in focus and directedness as an outcome of this grouping. Participant HO-17 offered the following explanation for this phenomenon:

> We always clowned around [in homogeneous classes] because we were with the same people in every class so it kind of became a game of who could get to the teacher's nerves first. Mixed classes, I don't think you could do that because nobody wants to be embarrassed.

Participant HE-3 also touched on this idea stating, "I think heterogeneous grouping helped. Not being around the other people that misbehaved, I wasn't distracted. I could focus more on the material." In addition to being less distracted, former student interview participants also indicated that they were more motivated to succeed academically as a result of heterogeneous grouping. Participant HE-1 reported, "In the heterogeneous class you see the good academic student and they might try to push you and make you want to succeed more." Participant HE-3 shared this view explaining, "I wanted to perform better around the regular students to show them I could do what they could do."

Importance of peer education in heterogeneous classes. Half of the participants within this subgroup emphasized the utility of peer assisted learning in improving their grasp of the course material. Participant HO-13 speculated, "Peer tutoring would have helped me more." This participant continued saying, "Being able to mix the kids some will be able to help others, because if one inclusion student can't understand they can ask another student to explain in terms the students understand." Participant HO-5 expressed a similar point stating, "Regular education students might even help the inclusion students on topics they don't understand." Participant HO-5 later added, "We might have done some group work [in a heterogeneous class], which we couldn't do in my economics class because those kids couldn't handle it." Participant HE-11, in discussing what enabled a passing grade on the EOCT, recalled, "I also had access to other students, who understood the material better than me, and could help me through group work." Participant HO-13 also made this point stating, "I think all the students should be combined together (heterogeneous) because the main thing is they are helping each other. I think that's what helps students graduate."

More time, resources, and teacher attention in heterogeneous classes. Former student interview participants indicated that homogeneous classes were perceived as being more rushed than heterogeneous classes. Participant HO-17 explained, "In my classes (homogeneous) we would do the regular classwork all semester and then the last two weeks get a review packet to complete. It was like trying to cram all the material in the last two weeks." From the perspective of a heterogeneously-grouped student,

Participant HE-6 reported, "Everybody seemed to have more study time and time to finish their work."

I addition to greater time, participants also perceived greater availability of resources in heterogeneous classes. HO-15 speculated that in a heterogeneous class, "I think the teacher would be able to have more materials to use to study for the test." Participant HE-6 added support for this claim, reporting that in the heterogeneous class "instead of going by a piece of paper, we had vocabulary cards and other activities to complete." Participant HE-1 expressed a similar view, noting that the preparation received in the heterogeneous class was "enough for me to pass [the EOCT]. She prepared us a lot of stuff to study with."

More individualized attention from the teacher was also perceived as a benefit of heterogeneous class grouping. Participant HE-11 recalled, "…when I was in Math I (homogeneously-grouped class) the teacher conducted each lesson to reach everybody in the class instead of the individual attention I got in senior economics (heterogeneously-grouped class)." Participant HE-11 continued saying, "The inclusion teacher was able to concentrate on helping me to understand the material." Participant HO-15 expressed a similar point noting, "More help was available. I believe the inclusion teacher would be available more to help the inclusion students."

Grouping based on ability and individual needs. Participants in this subgroup expressed the idea that students should be grouped based upon their ability to keep up with the course work load and their individual needs. Participant HE-6 argued, "If the students can handle the environment and behave they should be in the inclusion setting.

It depends on each kid and their individual disability." Participant HO-15 expressed a similar view stating, "I think for the inclusion students that can understand what the teacher is saying they deserve to be in the same classroom as everyone else." Only one student participant expressly disagreed with heterogeneous grouping. Participant HE-11 reported, "I don't think the inclusion students benefit from heterogeneously-grouped classes. I think the same level of understanding (academic ability) should be in the same class." Five of the eight former student participants, however, advocated for an ability and need-based method of class grouping. Participant HO-17 reported the following:

> I think it depends on the individual student. If they can handle the work and behave in class then they should be allowed to do the inclusion. If they cannot handle the work or continuously misbehave in class they should be put in a separate class to learn. That is different now that I have a child. I want my child to get the best for themselves and they can't do that is someone like me is in there clowning around. So it depends on the individual student.

Several other participants made a similar argument. Participant HE-3 indicated, "I am in favor of heterogeneously-grouped classes. It depends on what each individual is able to do according to their individual abilities. The mixed ability classes allows for more social interaction between students." Participant HE-1 stated, "It depends on the situation. Some kids can't be around a bunch of people. They feel they need more help and don't know who to go to. It's based on the kid's ability."

Current and former faculty members. Five of the interview participants were current or former members of the faculty of Southeast High School. With one exception,

all interviewed faculty members currently worked at the school at the time of the interview. The responses of the faculty member participants were examined for themes specific to these participants. The themes of these responses were also analyzed to highlight differences and similarities with those presented by the former inclusion students. Among current and former faculty interview participants, the following themes emerged from their responses:

1. Heterogeneous grouping has been beneficial for inclusion students; but, the degree of beneficence is uncertain.
2. Differential instruction has become a major challenge in teaching heterogeneous classes.
3. Inclusion students benefit when accommodations are made to suit student learning style and ability level.
4. Peer teaching is an important learning tool in heterogeneous classes.
5. Participants perceive greater availability of resources, materials, and time in heterogeneous classrooms.
6. Inclusion students are more focused and learn better in heterogeneously-grouped classes.
7. Inclusion students benefit most from grouping based on individual needs and ability level.

Benefits of heterogeneous class grouping. Among participants who are current or former faculty members, a shared contention was that inclusion students had benefited from heterogeneous grouping. These participants asserted that inclusion students have

enjoyed several positive outcomes since heterogeneous grouping took effect. Participant T-2 stated:

> I can only speak from the heterogeneous grouping but I have noticed that in my experience students do benefit from being mixed in a heterogeneous group and it can help them pass that economics just because of the grouping they're in.

Participant T-1 also noted the benefit of heterogeneous grouping for inclusion students saying, "Yes, I believe they benefit from it. Most do, there [are] some exceptions. There are some students [for which] that's not the least restrictive environment, but most benefit from it." Faculty participants also discussed the positive effect that heterogeneous grouping has had on the academic success of inclusion students. Participant T-4 stated, "I think that, again depending on the student, we are seeing more students passing these tests and graduation requirements." Participant T-2 offered more support for this assertion stating, "I think their [inclusion students] passing rates have increased."

Most of the faculty interview participants identified positive overall changes for inclusion students since the transition to heterogeneous grouping. However, three of the five faculty participants did note that the change which could be directly attributed to class grouping was not necessarily significant. Participant T-1 explained:

> I believe there has been a change, [but] I am not sure if it is significant. The special education student being in with general education students have learned good study habits, good social skills, there have been improvements…But being a significant improvement, I can't really say that it is or is not.

When asked if a difference in course passing rates of inclusion students had been observed since heterogeneous grouping was introduced, Participant T-3 responded with, "Slightly, yes." Other participants also seemed hesitant to attribute more than meager gains to heterogeneous grouping. Participant T-5, the former economics teacher reported that it would be a "surprise" to find a significant difference in course passing rates pre and post heterogeneous grouping, and indicated that sufficient empirical evidence would have to be provided before making such claims.

Challenges of differential instruction. Faculty participants also discussed the difficulties associated with the differential instruction now required in heterogeneous classes. Participant T-1 stated the following:

> Differentiating instruction is the most difficult thing because they are all at varied levels so you really have to get to know your students and know what their strengths and weaknesses are. And that's all students, special education and the general education students. So that you can design activities that really work with those different levels. So the differentiated instruction is the hardest part.

Due to the blending of students from a variety of ability levels, teachers have had to modify their instruction styles to ensure that every student's needs are addressed. For several of the faculty participants, this has been a daunting task. Participant T-3 discussed the difficulty associated with managing the variety of instruction styles utilized in a heterogeneous classroom. As Participant T-1 explained, inclusion students have a variety of special needs which must be attended to daily and "you have to address those needs while still working in the general education classroom. So, yes it's hard to adjust

to their needs when you have so many students." Participants also discussed the learning gap that can exist between regular education students and inclusion students in heterogeneous classrooms. As Participant T-2 explained, "…you have some students that can lag behind despite the fact that mixing can be beneficial you still have students that lag behind and pacing in the classroom can be a problem."

Accommodations based on learning style and ability level. Faculty participants discussed various accommodations they have made in response to the unique needs of inclusion students in an effort to aid student learning. Participants noted that these accommodations are individualized to the unique preferences and strengths of each student. Accommodations are designed to allow the student to better understand and demonstrate mastery of the course material. Participant T-4 explained, "I have used tiered assignments that are based on their abilities. These focus on the inclusion student's strengths and we work on and build their weakness. This helps them understand the concept that we are trying to teach." Participant T-4 continued saying, "We also do choice assignments that allow the inclusion students to build on their individual abilities; such as a visual learner drawing a picture instead of writing and essay." Participant T-1 discussed this concept in detail saying:

> For students who have reading disabilities or writing disabilities sometimes I will give them an oral test instead of a written test. For students who have attention issues it may take longer to get through a test, I might shorten that test or shorten the homework. Instead of having the students do five problems do one problem so I know you understand it. Sometimes students will actually get different

> assessments based upon their level and where they are at. There's no reason to assess students on something that you know they have not mastered. You might change it to see what they have mastered.

Participant T-2 gave a similar report and asserted that differentiating his teaching style to suit student strengths is "the most effective" manner of instruction for this population.

Importance of peer education in heterogeneous classes. Faculty interview participants discussed the importance of utilizing regular education peers as an educational resource for inclusion students. Since the transition to heterogeneous class grouping, inclusion students have had direct access to higher ability students from which they can better learn the material. Participant T-3 stated:

> In the heterogeneous, putting them with brighter students when you are doing the grouping, I think it helps them (inclusion students) out overall in understanding the material and those students are willing to help out in any way. I think that helps them (inclusion students) when it comes to overall testing and passing the course.

Peer grouping for assignments was identified as a common teaching strategy among participants. As participants reported, inclusion students can be grouped in class with regular education students in group assignments for peer-assisted learning. Participant T-2 explained, " I think with heterogeneous grouping you get more teacher interaction or more student interaction, more peer to peer groupings that can be beneficial to those students that need the help."

Greater availability of material, resources, and time in heterogeneous classes. An assertion among faculty interview participants was that heterogeneous classrooms offer greater access to teaching materials and resources, and provide the teacher with more time for instruction. Participant T-4 reported:

> There are more opportunities, more practice, and more things available to get inclusion students to understand the concepts. There are more ways to get the material across to the students in a sense they can understand it and grasp it. We now have more resources available now in terms of technology. There are more opportunities to use the internet for extra and extended practice.

From this response, the explanation for these perceived differences was unclear. However, Participant T-2 also expressed the belief that heterogeneous class grouping offers distinct advantages including "more teacher interaction," and greater opportunities for test preparation and remediation.

Decline in misbehavior and increase in directedness in heterogeneous classes. Faculty interview participants tended to report that inclusion students have demonstrated fewer behavioral issues and greater focus since being grouped heterogeneously. Participant T-4 offered an explanation for this phenomenon by stating the following:

> …the inclusion students try to meet those expectations of the high ability students. The inclusion students do not misbehave when grouped with higher ability students they are actually trying to complete the assignments, because they are not with a group of kids that goof off. The inclusion students tend to adopt the good work ethic of the higher ability students.

Participant T-3 supported this assertion, arguing that the positive behavior of "higher academic kids" influences inclusion students to misbehave less in the classroom. The argument presented by these participants is that inclusion students are less inclined to act out in class when heterogeneously-grouped with higher-ability, better-behaved peers. Similarly, inclusion students are also motivated to achieve more academically when placed in a heterogeneous setting. As Participant T-4 reported, "I see more inclusion students putting more effort into taking these high stakes tests and actually trying to pass the test so they can graduate with a regular diploma instead of an exit certificate."

Grouping should be based on ability and individual needs. Although faculty interview participants generally expressed positive views toward the benefits of heterogeneous class grouping, some argued that it was not the most effective form of education universally. These participants indicated that individual student needs and abilities should be examined to determine the best placement for each student. As Participant T-4 explained:

> Some special needs students do very well in the inclusion setting. Some special needs students are true strugglers who are not succeeding in the inclusion setting. The decision needs to be based on the student's individual ability level that is documented through their IEP (individual education program).

Participant T-1 Argued that school should "offer a variety of services, a continuum of services…what's least restrictive for one student many not be for another." Participant T-1 continued saying, "I think you need to have all levels of inclusion, co-teaching, consultation, and self-contained based upon the student needs."

Protection of Participants

Measures were taken to ensure protection of the participants and the participants' rights. Confidentiality, informed consent, and protection from harm were addressed in the administration letter and the letter to interview participants (Appendices B – D). All three aspects are important as outlined by the National Institutes of Health (NIH) Office of Extramural Research (2012) and Walden University (2012).

Confidentiality is the promise to keep all participants and the local school anonymous (APA, 2010; Creswell, 2012; Creswell, 2009; Lodico et al., 2010). The EOCT scores, course passing scores, and graduation of the participants in the quantitative study were coded and stored in a locked safe. All documents cataloging the participants' scores and rates are stored in a locked safe for 5 years after the completion of the study. Interviews were coded and the tapes are stored in a locked safe. All electronic / digital data were saved on a password protected computer. All interview records are stored in a locked safe for 5 years after the completion of the project study. All documents, electronic recordings, and digital data records will be destroyed by incineration 5 years after the completion of the study.

All interview participants were given a letter stating the purpose and intent of the project study. Participants were asked to sign the letter of informed consent (Appendix D) stating their rights and the ability to withdraw from the study at any time without penalty have been explained. Informed consent is the process of letting participants know the information about the risks and procedures involved in the study (Creswell, 2009; Lodico et al., 2010). Participants were informed they are volunteering for the

study and can withdraw at any time without penalty (Creswell, 2009). Archived quantitative data; scores and passing rates; did not require informed consent as individual student names were not used and the data has already been archived.

Participants were informed they would be protected from harm. This project study used archival data and interviews. No experimentation or change of stimulus was introduced at any point of the project study. This information was outlined in the informed consent letter to participants.

Conclusion

This section of the project study focused on outlining the methodology of the study design, the reasons for using a mixed methods design, setting, sampling, data collection, data analysis, and protection of participants' rights. Research question one was found not to be significant therefore the null hypothesis; There is not a significant difference between the passing rate of inclusion students in heterogeneous classes and inclusion students in homogeneous classes in senior economics at Southeast High School, is excepted. Research question three was found not to be significant therefore the null hypothesis; There is not a significant difference between the graduation rate of inclusion students that are heterogeneously grouped and inclusion students that are homogeneously grouped at Southeast High School; is excepted. There are possible other factors that contribute to these two phenomenon and will be discussed in the limitations of the project study in section four.

Research question two was found to be significant therefore we can reject the null hypothesis; and assert that there is a significant difference between the passing rate on the

EOCT of inclusion students that are heterogeneously grouped when compared to inclusion students that are homogeneously grouped at Southeast High School. Subsequent interviews followed the collection of the quantitative date and supported the perceived positive effect heterogeneous classes had on inclusion students.

Interview participants, both former students and faculty, perceived benefits for inclusion students in the heterogeneously grouped classes. Six themes resulted from the interview data collected. Inclusion students have benefitted from heterogeneous classes, inclusion teachers and accommodations are important to the success of inclusion students, behavior and focus are improved in the heterogeneous classes, peer teaching has emerged as an important educational tool, heterogeneous classes are perceived has having more resources, materials, and time, and inclusion students benefit most when they are grouped according to their individual ability to participate and individual needs.

Section 3 describes the project study and how the current literature confirms or conflicts with the findings. A project (Appendix A) was created in the form of professional development. The professional development contains training that was broken into three full 1 day modules. Modules are units designed to encourage participants to discuss issues, investigate meanings, and possible solutions to issues (Avargil, Herscovitz, & Dori, 2012; Ellery, 2006). A brief summary, highlighting the mixed methods study results, will be presented and discussed at the first module.

Section 3: The Project

Introduction

Heterogeneous grouping of students in senior economics was a recently implemented transition at Southeast High School. In the previous section, I explored and outlined the effectiveness of this transition. The results of the mixed methods study drove the development of a project (Appendix A) that will be implemented through professional development with Southeast High School faculty. The goal of this project was to develop a resource notebook that would be stored in the library for all faculty to use. This notebook will have project-based learning activities, differentiation ideas, and assessments to use. This notebook will become a tool that is continually growing. The professional development facilitator will maintain this notebook as long as he or she is employed at the school.

The project (Appendix A) is 3 full days of modules. Using modules is a highly effective method of educating professionals (Avargil et al., 2012; Bell & Morris, 2009; Cunsolo Willox, & Lackeyram, 2009; Doherty, 2010; Gilpin & Liston, 2009; Tsang, 2010). Module 1 will include a brief summary of the setting, sample, procedure, and results of the mixed methods study. Current research on project-based learning is used to outline the development of project-based learning activities. Teacher learners will then divide into groups by subject and choose one standard to develop a project–based learning activity with an assessment. The groups will then present their activity to the whole group. Module 2 will be an explanation of how to differentiate and group students in the classroom. Teacher learners will again be grouped by subject, and they will choose

a different standard to develop differentiation strategies to teach the standard. In this module, groups will be asked to develop a rubric to assess student learning. Module 3 is a day of sharing the results from implementation of the teacher learners' activities in their classrooms. Each teacher will be allowed time to review the project–based learning activity and differentiation strategy with the group. Teacher learners will then discuss how they would implement each strategy with their assessment results. Each module will be created to achieve a set of goals established from the research study results for the project.

The project goals were generated from the mixed methods study results. Several teacher needs emerged from the research that could further benefit the inclusion students at Southeast High School. Students and teachers responded that peer teaching had been a beneficial factor in the heterogeneous classroom. Goal 1 of the project was that, upon completion of the professional learning project, teachers will be able to design and implement a project-based learning activity in their class. Teachers remarked that differentiation has been difficult in the heterogeneous classroom. Goal 2 of the project was that, upon completion of the professional learning project, teachers will be able to differentiate instruction in their class attending to the special accommodations that must be allowed for inclusion students. Students and teachers replied that they perceived heterogeneous classes as offering more resources, materials, and time than homogeneous classes. Goal 3 of the project was that, upon completion of the professional learning project, teachers will be able to search, locate, and use a wide variety of Internet resources to create project-based and differentiated activities.

Rationale of Project Genre

A professional development learning module design was used based on three factors: teachers' available time, the pragmatic usefulness of the material, and the results from the mixed methods research study conducted. In the quantitative results from the study, I found a significant difference existed in passing rates of heterogeneously-grouped inclusion students on the EOCT. In the qualitative results from the interviews conducted in the study, I found common themes emerging from the analysis of the interviews. Therefore, a project was designed based on the previous mentioned characteristics.

However, teachers have little time to spend locating and participating in quality professional development (Dede, Jass Ketelhut, Whitehouse, Breit, & McCloskey, 2009). Three days of modules and locating the sessions on the Southeast High School campus allows teachers to participate in professional development within their busy schedules. I found several needs of the teachers in the heterogeneous classes to assist with their effectiveness when teaching inclusion students. The materials developed from this project could be useful to teachers who participate in the professional development project. The pragmatic nature of the study led to a project design that would yield useful ideas and materials in the heterogeneous classes. Pragmatic research is formed from the useful knowledge that emerges from it (Age, 2011; Bourgeois, 2010; Fitch, 2010). This project could influence the nature of how teachers choose to educate the students in their class at Southeast High School.

Rationale of How the Project Addresses the Problem

Inclusion students at Southeast High School have had decreasing senior economics EOCT scores, senior economics passing rates, and graduation rates before the change from homogeneous to heterogeneous grouped classes. In the quantitative results of this study, I found that a significant difference exists between heterogeneously grouped classes and homogeneously grouped classes on the senior economics EOCT at Southeast High School favoring the heterogeneous classes. In the qualitative results of this study, I found several themes and needs of the teachers of inclusion students and the inclusion students. This project was designed to address those needs emerging from the quantitative and qualitative results to further assist the noted improvement in EOCT scores and assist in increasing course passing rates and graduation rates of inclusion students.

Project Literature Review

The purpose of this study was to determine whether or not a significant difference exists between homogeneous grouping and heterogeneous grouping in senior economics at Southeast High School. A significant difference was found to exist with the EOCT scores. A project was designed to assist teachers in the implementation of project-based learning in their heterogeneous classes. The literature review for the project is an analysis of the current research on perspectives of pragmatism as a theoretical framework, module education, project-based learning, and differentiation. The literature review of the project reached saturation by examining the available current research on the genre and project topics. This review contains published peer-reviewed articles

located on the ERIC database, SAGE database, PsycINFO database, PsycARTICLES database, and various publications. Key words, including Booleans, used in the search included *pragmatism, constructivist, constructivism, professional development, module education, module, module professional development, project-based learning, project-based professional development, differentiate, differentiation, classroom differentiation, grouping, grouping within classes,* and *rubric development.*

Genre Theory

This project and previous study was established using a pragmatic framework. Pragmatism is created through a constructivist mindset that all new learning is built upon previous knowledge and must have a usefulness in real-world situations to be worthy of learning it (Age, 2011; Fitch, 2010; Teelken, 2012). Scaffolding on professional educators' previous knowledge, the project is intended to lead teachers through insightful tasks to assist them in developing an intervention that is suitable to them, their needs, and most importantly their inclusion students' needs (Bell & Morris, 2009; Doherty, 2010). In the quantitative results, I found that a significant difference existed between the heterogeneously grouped inclusion students and the homogeneously grouped inclusion students, with the former achieving an eleven point higher mean on the senior economics EOCT. There is a need to develop teachers' use of project-based techniques and differentiation.

The project was designed to lead teachers to practical knowledge of the module topics they can use in their class. The basis of pragmatic theory is the practical outcomes of the knowledge created (Chang, 2011; Lodico et al., 2010; Verma, Dickerson, &

McKinney, 2011). Taatila (2012) also stated, "Pragmatists see the world as a set of practical actions that are born from thinking" (p. 833). Bourgeois (2010) explained that the integration or practical knowledge is what shapes pragmatic research. Pragmatic research and practices should develop learners to use attained skills in problem solving in the real world (Pugh, 2011). One method of delivering practical knowledge to teachers is with modules.

Module Education

Teachers are limited by many time constraints. Professional development that has been divided into separate modules is a method to deliver a large amount of information in several short periods. Keown (2009) stated that one problem with professional development has been the cost to the school systems. This project was designed to take place on the campus of Southeast High School with no outside cost to the school system. Modular education allows the teachers to discuss and experience topics and solutions to various problems in small groups (Avargilet al., 2012; Dede et al., 2009). The small groups allow for open and continuous discussion on topics presented.

Modular education involves formal and informal knowledge that could bring about the enrichment of new knowledge and skills to assist teachers in their professional duties (Doherty, 2010). The use of modules to deliver and develop ideas is an effective method. Teachers' desire professional learning that helps them develop their in class room skills and emphasize the importance of keeping up with students evolving needs (Ens, Rietow Bertotti, & Gomes Bertotti, 2014; Gilpin & Liston, 2009; Mathur, Clark, & Schoenfeld, 2009). Mouza (2009) found in a multiple case study of seven teachers that

modular education had two defined outcomes for the teachers; sustained changes in practice and willingness for continued professional growth. Teachers who continue to grow professionally develop zeal for their profession.

Teacher enthusiasm grows when presented with professional development materials that assist in the instruction of their students. Samarawickrema, Benson, and Brack (2010) found that staff development that allows the opportunities for teachers to learn and practice new skills builds their passion about the pedagogical significance they present to their students. Enthusiastic teachers develop pedagogical practices that foster the idea they need to continue to develop and grow as a professional. Education is a continuously evolving profession and as such, professional educators need to continually evolve and become life-long learners of their profession (Cunsolo Willox & Lackeyram, 2009; Tsang, 2010). Teacher enthusiasm could lead to the improvement of interest in developing new student centered activities such as project-based learning and other differentiation strategies.

Project-Based Learning

Project-based learning has been found to be a highly effective educational tool to review, build, and deliver new knowledge to inclusion students. One of the qualitative results indicated that heterogeneous classes are perceived as offering more resources, materials, and time than homogeneous classes. Project-based activities will utilize these perceived resources to a greater degree. Filippatou and Kaldi (2010) found through their paired *t*-test results that students with learning disabilities scored significantly higher on the post-test after the completion of a project based on classification of sea creatures.

Kalyoncu and Tepecik (2010) support these findings as they conducted research that found a significant difference existed with eighth graders improving their post-test scores over their pre-test scores after completing a project-based activity. Project-based activities bridge the gap between factual knowledge and the applications associated with that knowledge.

Project-based learning is ideal for teaching students the interconnections of factual knowledge, the principles of the topics, and the skills necessary for the application (Verma, Dickerson, & McKinney, 2011). Researchers have found that project-based learning offers opportunities for students to be involved in real-world, multidisciplinary situations that require students to think critically, cooperate, collaborate, and engage with other students to solve a problem (Hubbard, 2012; Schwalm & Tylek, 2012). Another result of the qualitative data analysis found that teachers and inclusion students believed that inclusion students benefit most from being grouped according to their ability to participate and individual needs as outlined by their IEP. Project-based learning activities allow students to be grouped and worked in a classroom environment that is suited according to each student's ability to participate and individual needs. Project-based activities can be utilized to differentiate in the classroom.

Differentiation

The data analysis of the qualitative data showed that inclusion students and teachers alike believe the inclusion teacher and special accommodations are important for the inclusion students. The data also showed inclusion students behave better and are more focused in heterogeneous classes. Peer teaching is an important and beneficial

educational tool in heterogeneous classes emerged from the data analysis. And lastly inclusion students' individual needs need to be considered when developing an educational plan. Differentiation allows teachers to address such a wide range indicated by the qualitative results of this study.

Differentiation institutes a collection of student tasks that are aligned to specific outcomes that students should be able to do and understand at the end of a unit. Buehl and Fives (2009) found in their grounded theory research that teachers believe students learn through collaboration and interactive experiences. Students in experimental classrooms were found to have demonstrated higher scores on the spring post-tests after differentiated instruction was implemented (Gettinger & Stoiber, 2012). A statistically significant difference was found between teachers that implemented differentiated instruction and teachers that did not, in such as those that did showed significantly higher post test scores (Rayfield, Croom, Stair, & Murray, 2011). Differentiation of instruction allows teachers to reach a wide range of student abilities.

Differentiation is designed with the uniqueness of each student in mind. Inclusion students' IEP is the legal document that must be followed when outlining the student's educational goals (GADOE, 2012; IDEIA, 2004; NCLD, 2013). Teachers that use differentiated instruction can meet the needs of all students by giving options, allowing each learner to develop their own meaning from what is being taught and enabling each to express individually what they have learned (Bain & Swan, 2011; Patterson, Connolly, & Ritter, 2009). Differentiated instruction is based on the philosophy that instruction should adapt to student differences and has been a valuable tool for inclusion students

and students in urban schools (Cobb, 2010; Dixon, Yssel, McConnell, & Hardin, 2014). Dixon et. al (2014) continued by stating, "Differentiating instruction makes sense because it offers different paths to understanding content, process, and products, considering what is appropriate given a child's profile of strengths, interests, and styles" (p. 111).

Implementation

The implementation of the project will be conducted in three phases. The first phase will be a summary of results presentation to the superintendent and local board of education. A one-page summary (Appendix A) will be presented highlighting the data analysis results of the study and the plan to implement a professional development program for the local high school to address the results of the study. The second phase will be the execution of the three days of modules at Southeast High School (Appendix A). The third phase will be a final meeting where participating teachers will reflect on the outcomes of the units they developed because of the modules. The entire project will last one school year to allow individual teachers to attend the professional development modules and utilize their newly acquired knowledge in their classrooms.

The project is open to the entire faculty at Southeast High School. Since any faculty member and inclusion teacher could be assigned an inclusion class, the entire faculty is able to participate in the professional development project. The first two day modules will be conducted during pre-planning. The third day module will take place during the semester post-planning days. The time lapse between the modules is to allow for teacher – learners to implement the activities they have developed in their classes.

The project will be conducted twice during the school year. Once in the first semester for the faculty at Southeast High School and then again during the second semester for all faculty of the Southeast City School District. All faculty will receive a schedule outlining the overall professional development project as well as each module's content. Although teachers are not required to attend all modules, but they are highly encouraged to participate in all three modules as the lessons are scaffolded.

There will be limited resources needed for the implementation of this project. The presentations will be made utilizing existing computer hardware. The modules will be taught in the computer lab of the high school. The computer lab has more than enough computers for teachers to use when searching for activities as well as printer, projector, and all software available. Each teacher at Southeast High School has been issued a laptop computer and tablet as well that can serve as tools.

As the researcher, I will serve as the lead facilitator in the project. I will make all presentations to superiors and participating teachers as well. The participating teachers will be guided in their search for learning activities that could benefit their inclusion students. The participating teachers will be asked to return at the end of the project to reflect on their activities.

Project Evaluation Plan

The evaluation plan of this project is goal based. The project will address three goals. Goal 1 is that the teachers will be able to design and implement a project-based activity in their class. Goal 2 is that teachers will utilize differentiated instruction in their class attending to the special accommodations for the inclusion students. Goal 3 is that

teachers will be able to search, locate, and use a wide variety of internet resources to create future project-based and differentiated activities. To evaluate the accomplishment of these goals at the completion of the project, teachers will be asked to reflect on a 10 question Likert scale (Appendix A). There will be a free response section.

All suggestions for improvements will be considered for future professional development activities. The professional development project has been designed to be a continuing learning environment for teachers to grow, develop, and learn. The success or failure of the project will be measured on whether faculty at Southeast High School continue to utilize and develop future project based learning activities to assist in differentiation of their instruction. A binder with ideas, assessments, lesson plans, and internet locations will be created because of this project to be housed in the library for current and future teachers to use. This notebook will become a tool that is continually growing.

Social Change Implications

In the quantitative data analysis, I found a significant difference existed between heterogeneously-grouped inclusion students and homogeneously-grouped inclusion students on the senior economics EOCT. In the qualitative data analysis, I verified the quantitative data by indicating that inclusion students and teachers perceive heterogeneous classes have been beneficial for a number of reasons. This data can help the local policymakers make informed decisions about academic placement of inclusion students. The social change benefit of this project study is that inclusion students have greater options in their academic pursuits, thus allowing them greater opportunities to

pass high stakes tests. By placing inclusion students in academic classes with higher achieving academic students, the inclusion students have been shown to benefit academically from the higher rigor in the heterogeneously-grouped classes.

Inclusion student academic placement could change on a larger scale. Other schools might observe what is happening at Southeast High School and decide to implement a similar change in their inclusion student placement and curriculum design. Greater inclusion students' high stakes testing passing rates are possible statewide. If inclusion students can pass the high stakes tests, they have a greater possibility passing all their classes, not just senior economics.

When inclusion students pass their classes, they have a greater opportunity to graduate from high school. The literature review in section one stated a dual educational system world wide of students that are taught on the perceptions that can handle the material and students that are taught a lesser curriculum because they cannot. This study demonstrated that inclusion students could learn the material in a heterogeneous learning environment. The lasting social change implication of this study is that when inclusion students graduate from high school, they have a greater probability of obtaining jobs and becoming contributing members of society.

Section four of this project study discusses reflections and conclusions drawn because of this project study. Recommendations of addressing the problem from a different direction will be discussed. What was learned about scholarship, project development, leadership, and change are considered. The researcher examined self in

terms of a scholar, practitioner, and project developer. The importance of this particular study and possibilities for future research was reflected.

Section 4: Reflections / Conclusions

Introduction

In this section of the project study, I reflect on the strengths and limitations, what was learned during the development of the project, and possibilities for future research. There are strengths of this project study over similar studies that make this study unique and fill a gap in research. In section 4, I outline the concepts I learned as a scholar, practitioner, and project developer. The potential for future research will also be discussed in this section.

Strengths and Limitations

This project study has three strengths and improvements over similar studies. The first strength is that I used quantitative data for measuring whether a significant difference existed between inclusion students in heterogeneous classes and inclusion students in homogeneous classes in senior economics. In the quantitative data analysis, I found that a significant difference did exist when it pertained to high stakes testing, such as the EOCT. These data could lead to more classes being grouped heterogeneously at Southeast High School in an attempt to raise EOCT scores.

The second strength of this study was the perceptions provided by the former inclusion students on the quality of their education versus how they were grouped in high school. This study, like others, incorporated the observations of the professional educators. Unlike other studies, I employed the view points of the students being affected by the change in grouping students. The former students' insights added depth and explanation to the study.

A third strength of this study was its uniqueness to the local setting. Many professionals in the local setting debated whether heterogeneous or homogeneous grouping is best for the student body and their academic growth. This is the only study that has been conducted using quantitative and qualitative data to show that a significant difference did exist in EOCT testing and how the participants perceived the implementation.

There were three limitations to this study. I only researched one subject at Southeast High School. There have been other subjects and departments that have gone to the heterogeneous model since the start of this study. The other departments' testing and passing rates could have affected the significance of this study. A second limitation was the limited scope this study viewed in terms of course passing and graduation rates. There are other factors that contribute to passing courses and high school graduation. Other coursework besides the EOCT are calculated when determining passing a course. Georgia required a series of five graduation tests that must be passed to meet the requirement of graduation at the time of this study. If the graduation testing requirements did not exist, there is a possibility that more inclusion students in this study would currently hold a high school diploma. A final limitation to this study was the number of heterogeneous participants from which to choose. There was a year in senior economics when there was only one inclusion student in the senior economics class who was heterogeneously grouped. This could possibly skew the results.

How to Address Problem Differently

There are several different ways the problem of inclusion students' EOCT test scores, course passing rate, and graduation rate could be addressed. One way is to investigate inclusion students' results over the same parameters in other course subjects. Although the economics course within the social studies department was the only academic subject that was truly heterogeneous at Southeast High School, other academic courses; coordinate algebra, analytic geometry, physical science, biology, and English; have recently implemented heterogeneous grouping of inclusion students in classes that are not part of the honors curriculum.

Another method of researching the local problem could be to incorporate the use of quantitative data analysis on all of the course work required in a particular subject. This would determine whether a significant difference exists between students and their level of completing course requirements.

This problem could also be investigated by looking at the impact the inclusion students and environment has had on the regular education students. The regular education students EOCT scores could be compared from the homogeneous group and heterogeneous group to investigate if a significant difference exists. Interviews of regular education students could add their perspective to the study of the problem.

The Project Study Experience

What Was Learned About Research

I learned a great deal about research as a scholar through this project study. I was unfamiliar with quantitative, qualitative, and mixed methods research designs. Upon the

completion of the course work, I knew the definitions of each research design and their components, but I did not understand how to gather and analyze the data. Now, I believe I am fluent in quantitative data analysis and qualitative data analysis using the mixed methods design of this project study. I demonstrated that a significant difference existed on the economics EOCT between heterogeneously grouped classes and homogeneously grouped classes. That significant difference could lead to future research at the local level.

As a project developer, I learned how difficult project development could be. As an education professional, I have had several opinions, but have not the need or opportunity to develop a project that could benefit the entire faculty. The project resulting from this project study has the possibility to benefit the entire faculty and students as well as be a continuing resource for future faculty members to contribute and use.

The completion of this project study has thrust me into a leadership role of knowing and understanding the importance of student grouping in classes at Southeast High School. Before this project study, I did not believe that student grouping in classes mattered. I found that student grouping matters and that truly heterogeneous grouping yields the better results on high stakes testing. I have learned that a voice for the students, especially the inclusion students, will help prevent Southeast High School from returning to the old way of separating students into ability level classes.

What Was Learned About Self

The project study experience helped me grow as a scholar, practitioner, and project developer. I learned, as a scholar and developer, that project planning needs to be in-depth. The project needs a set of achievable objects and an outline of the project must be developed from those objectives. Each piece of the project is then researched and developed further to create an academically rich environment for those participating in the project. As a practitioner, I learned that skills I have obtained as a teacher and coach of students can transfer to leading adult professional educators. Practicing the skills obtained during the development of this project has already assisted in educating students. The pragmatic framework of this study has allowed for many of the concepts learned to be implemented in current classroom environment. As a project developer, I was surprised by the depth of which the project needed to be. In addition, the relative ease developing the project became when the needs of the educators and students, as observed through the qualitative analysis, were considered.

Importance of this Work

Most of the previous research that was located in the literature review was based on qualitative data and the perceptions of educators. This work has two major points of importance over previous work. First, I used quantitative data analysis to prove a significant difference does exist, 11 points higher, between the heterogeneous grouping and the homogeneous grouping on a high stakes test; senior economics EOCT. Second, I incorporated former inclusion students' perceptions of heterogeneous grouping and

homogeneous grouping of classes. None of the previous work had either of these positions in their studies.

Future Research

This study has many implications and applications for future research. One such idea could be research into the effects of heterogeneous grouping on inclusion students in other subjects. Since the start of this study, other departments have begun heterogeneously grouping their inclusion students. A possible research topic could be the effects of this change school wide instead of just one class.

Another research idea became known during the interview process. One participant asked the question of whether a significant difference existed within the higher academic students when heterogeneously grouped with the inclusion students as opposed to the previous three level academic groupings. That study would be significant if a proven similar positive effects on the high academic students as it has been perceived on the inclusion students.

Conclusion

In section 4, I discussed the strengths and weaknesses of this project study. The use of quantitative data analysis, perceptions of former inclusion students, and uniqueness of this study to the local setting are strengths of this study. The limited scope, one course, and limited number of inclusion students for 1 year were weaknesses of this study. However, if this study were to be re-examined across multiple courses and furthered for many years, these limitations could become strengths of a broader study.

This study could change the way other school systems nearby or state wide group there inclusion students.

The old way of separating inclusion students with learning disabilities into lower academic classes is ineffective. Heterogeneous grouping of inclusion students raises high stakes testing scores. It is believed to be beneficial by all parties involved when special accommodations are provided. Inclusion students have less behavior problems. There are also wide ranges of beneficial educational tools available including peer teaching, more resources, more materials, and more time.

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Appendix A: Project – Professional Development

First two days will occur during pre-planning and last day will occur during post planning of the semester.

Project Goal: The goal of this project is to develop a resource notebook that would be stored in the library for all faculty to utilize. This notebook will have project – based learning activities, differentiation ideas, and assessments to use. This notebook will become a tool that is continually growing. This notebook will be maintained by the professional development facilitator for as long as he is employed at the school.

I. Day 1 Project Based Learning

Objective: By the end of the day, each teacher will have a project – based learning activity to utilize in their classroom that meets at least one of their subject standards.

(8:30 am to 3:30 pm)

A. 8:30 to 8:45 Introduction of the facilitator

B. 8:45 to 9:15 Use of a power point presentation and one page handout to discuss the rationale, purpose, procedure, and results of the local study

C. 9:15 to 9:30 Overview of the purpose of the resulting project

E. 9:30 to 10:00 Facilitator will lead the whole group through an example of a project based learning lesson (page 100).

D. 10:00 to 10:15 Teacher – learners will be grouped according to their subject area and asked to choose one standard from their subject area to develop a project based learning activity.

E. 10:15 to 11:30 Teacher – learner groups should spend time developing a lesson plan; using the provided model; and project – based activity. They will have use of the internet through the school computer lab.

F. 11:30 to 12:15 Lunch

G. 12:15 to 1:00 Teacher – learners will develop a rubric to assess their students' on the project – based activity.

H. 1:00 to 1:30 Groups will develop a presentation of their project – based activity to present to the whole group. They can utilize any method they choose for their demonstration.

I. 1:30 to 3:30 Groups will present their project – based learning activity and assessment to the whole group.

Handout

A Mixed-Methods Investigation of Heterogeneously Grouped Inclusion Students at Southeast High School

by

James Ferry

Rationale for Study: The rationale of choosing this problem is a gap in practice of placing inclusion students in the lowest academic environment instead of the least restrictive environment. The school implemented a change in placement by heterogeneously grouping students in senior economics.

Sample and Setting: All inclusion students from 2008 to 2014 were included in this study. Thirteen participants were asked to partake in the qualitative interviews. Of the 13 participants; 5 were current or former faculty members, 4 were former inclusion students that did not graduate, and 4 were former inclusion students that graduated.

Results: The data analysis found a significant difference existed between the heterogeneous group and the homogeneous group on the economics EOCT, with the heterogeneous group scoring an average of 11 points higher. There was not a significant difference between the two groups on course passing or graduation rates. One reason could be the amount of extra variables associated with course passing and graduation.

The interviews added to the numerical data by providing faculty and former inclusion student perspective to the study. Inclusion students' viewpoint have not been noted in previous studies. These perspectives yielded six common themes the all 13 participants.

Project – Based Learning Activity to be use on Day 1

Lesson Plan

Course / Subject: Coordinate Algebra

Standard: CCGPS: MCC.9-12.A.CED.2 Create equations in two or more variables to represent relationships between quantities: graph equations on coordinate axes with labels and scales.

Essential Question: How can systems of linear equations be represented to show comparisons between two or more quantities?

Vocabulary: The following vocabulary terms have been taught in previous classes must need to be reviewed and reinforced during this lesson: coefficient, equation, ordered pair, solution, substitution, and variable.

Procedure: Students will use the accompanying worksheet to create systems of equation graphs and then answer questions based on their created graphs. The teacher will pass out worksheet, one piece of graph paper, and one color card to each student. The color cards represent which group the students will form. There are three cards for each color. The teacher will read the opening paragraph on the worksheet. Students will move to their groups and re-read the opening paragraph. Students will then use their previous knowledge about constructing linear equations from translating verbal sentences to algebraic equations. Once students in the groups have translated the verbal sentences they will use them to fill in the tables for each of the rental cars cost per miles driven. Students will use their tables to construct graphs, placing all three linear equations on the

same graph using different colors for each equation. Students will use there completed systems of equation graph to answer the questions on the worksheet.

Materials:

1. Worksheet
2. Graph paper
3. Rulers
4. Colored pencils
5. Color cards for grouping

Assessment (Attach to back if necessary): Students will be assessed on this project based on the attached rubric.

Car Rental Project

We are going to investigate the cost of renting a car from three different rental companies. Southeast Car Rental will rent us a midsize sedan for $35 a day and $0.25 a mile. Cheapo Motors will rent us the same car for $25 a day and $0.50 a mile. Economical Rentals will rent us the same model for a flat rate of $65 a day with no mileage charge.

Complete the following tables by finding the cost of renting the car from the appropriate company for 0 to 100 miles in intervals of 10 miles. Find a formula that can be used to calculate the cost for driving X miles in the last box.

Miles	0	10	20	30	40	50	60	70	80	70	90	100	X
Southeast													

Miles	0	10	20	30	40	50	60	70	80	70	90	100	X
Cheapo													

Miles	0	10	20	30	40	50	60	70	80	70	90	100	X
Economical													

Using the information in the previous three tables, draw separate graphs on the graph provided. Be sure to include a key, axis labels, and title. When completed answer

the following questions based on your tables and graph. Provide reasons for your answers.

1. Which company charges the least for a small number of miles?

2. Which company charges the least for a large number of miles?

3. Which company would you rent from if you planned to drive the car 60 miles?

4. Which company would you rent from if you planned to drive the car 100 miles?

5. Which company would you rent from if you planned to drive the car 20 miles?

6. How many miles must you plan to drive before Southeast Car Rental becomes the best deal?

7. How many miles must you plan to drive before Economical Rentals becomes the best deal?

8. How many miles must you plan to drive so that the rental cost from Cheapo Motors and Southeast Rental would be the same?

9. How many miles must you plan to drive so that the rental cost from Southeast Rental and Economical Rentals would be the same?

10. How many miles must you plan to drive so that the rental cost from Cheapo Motors and Economical Rentals would be the same?

Systems of Linear Equations Rubric

Worksheet	1 Constructed linear equations	2 Filled in one worksheet tables	3 Filled in all worksheet tables	4 Answered all 10 questions
Graphs	1 Constructed graphs	2 Constructed graphs utilizing different colors	3 Constructed graphs in different colors with correct intervals and labeling	4 Constructed graphs with an included key and title
Questions	1 Answered some questions	2 Answered all 10 questions	3 Answered all 10 questions correctly	4 Answered all 10 questions correctly with explanations for that require

Score: _____ (out of 12 points)

Percentage: _____

Project – Based Learning Activity

Lesson Plan

Course / Subject: US History

Standard: SSUSH4 The student will identify the ideological, military, and diplomatic aspects of the American Revolution.

Essential Question: What were the characteristics and motivations of the people involved in the American Revolution?

Vocabulary: Revolution, taxation, representation, Treaty of Paris 1763, Sons of Liberty, settlement, militia

Procedure: Students are grouped into threes according to a random method of grouping; such as color cards, numbering each student, or placing each student in a group by the teacher. The groups are given a list of characters from the American Revolution. Students are to choose one character and create a faux Facebook page for them. Once a person is chosen, another group cannot choose them. The page must include a drawn picture, the name of the character, a brief history of the character, some facts about the person, and a brief discussion through postings with at least two other people from that time period. The page must be created on a sheet of notebook paper first and approved by all members of the group and the teacher for accuracy. Once all approvals have been met, the group will transfer their creation to a poster board to be displayed in the hallway of the school.

Materials:

1. List of people involved in the American Revolution
2. Poster board
3. History textbooks for researching facts
4. Rulers
5. Color pencils / markers

Assessment (Attach to back if necessary): Rubric is attached.

American Revolution Facebook Rubric

Required Elements	4 The poster includes all required elements as well as additional information	3 The poster includes all required elements.	2 1 required element was missing	1 Several required elements were missing
Content Accuracy	4 At least 8 accurate facts are displayed on the poster	3 5-7 accurate facts are displayed on the poster	2 3-4 accurate facts are displayed on the poster	1 Less than 3 accurate facts are displayed on the poster
Relevance of Graphics	4 All graphics are related to the topic and make it easier to understand. All borrowed graphics have a source citation.	3 All graphics are related to the topic and most make it easier to understand. All borrowed graphics have a citation.	2 All graphics are related to the topic.	1 Graphics do not relate to the topic.
Originality	4 Several of the graphics used on the poster reflect an exceptional degree of student creativity in their creation and/or display.	3 One or two of the graphics used on the poster reflect student creativity in their creation and/or display.	2 The graphics are made by the student, but are based on the designs or ideas of others.	1 No graphics made the student are included.
Grammar	4 There are no grammatical errors on the poster.	3 There is 1 grammatical error.	2 There are 2 grammatical errors.	1 There are more than 2 grammatical errors.

Score: _____ (out of 20 points)

Project – Based Learning Activity

Lesson Plan

Course / Subject: American Literature and Composition

Standard: ELACC11-12W7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

Essential Question: What qualifications, skills and education are required in the chosen career?

Vocabulary: primary source, secondary source, observation, interview, inquiry, synthesis, citation, plagiarism, source, credibility

Procedure: Each student will be assigned a project where he/she is asked to research a chosen career path. To integrate unconventional research methods, students will be investigating his/her chosen career using interviews, field research and technology to find the following: skills and qualifications needed for career, job growth, yearly income and 3 post-secondary schools that offer educational degrees in that specific career. Students will report findings in a research paper submitted to teacher. Students will also create a power point that summarizes research and report to the class.

Materials:

1. Technology (computer lab)

Assessment (Attach to back if necessary): Rubric is attached

Organization	1 The information appears to be disorganized.	2 Information is organized, but paragraphs are not well-constructed	3 Information is organized with well-constructed paragraphs	4 Information is very organized with well-constructed paragraphs and subheading
Quality	1 Information has little or nothing to do with the main topic	2 Information clearly relates to the main topic. No details and/or examples are given.	3 Information clearly relates to the main topic. It provides 1-2 supporting details and/or examples.	4 Information clearly relates to the main topic. It includes several supporting details and/or examples.
Attractiveness	1 Use of font, color, graphics, effects, etc. but these often distract from the presentation content.	2 Makes use of font, color, graphics, effects, etc. but occasionally these detract from the presentation.	3 Makes good use of font, color, graphics, effects, etc. to enhance the presentation.	4 Makes excellent use of font, color, graphics, effects, etc. to enhance the presentation.
Originality	1 Uses other people's ideas, but does not give them credit.	2 Uses other people's ideas (giving them credit) but there is little evidence of original thinking.	3 Product shows some original thought. Work shows new ideas and insights.	4 Product shows a large amount of original thought. Ideas are creative and inventive.
Presentation	1 Delivery not smooth and audience attention often lost	2 Delivery not smooth, but able to maintain interest of the audience most of the time.	3 Rehearsed with fairly smooth delivery that holds audience attention most of the time.	4 Well-rehearsed with smooth delivery that holds audience attention.

Score: _____(Out of 20 points)

II. Day 2 Differentiation

Objective: By the end of the day each teacher will a variety of activities for students to choose to complete to meet one of their subject standards.

(8:30 – 3:30)

A. 8:30 – 9:00 The facilitator will discuss the meaning of class instruction differentiation and how it was derived from the results of the study.

B. 9:00 – 9:15 Teacher – learners will be grouped according to their subject area. Each group will be asked to choose a standard from their subject area that is different than the one they chose on day one.

C. 9:15 – 11:30 Groups will utilize the computer lab and internet to develop different differentiation concepts based on the subject and standards they chose.

D. 11:30 – 12:15 Lunch

E. 12:15 to 1:00 Teacher – learners will develop a rubric to assess their students' on the differentiated assignments.

F. 1:00 to 1:30 Groups will develop a presentation of their differentiation activity to present to the whole group. They can utilize any method they choose for their demonstration.

G. 1:30 to 3:30 Groups will present their project – based learning activity and assessment to the whole group.

III. Day 3 Share results from class implementation and Reflection

This day will occur during post planning days of the semester.

Objective: Teacher – learners will share results of implementing earlier developed activities and assessments as well as sharing methods to improve the activities and assessments.

(8:30 – 3:00)

A. 8:30 – 11:30 Teacher – learners will be asked to share how they implemented their project – based learning activity and assessment results; deleting student names to maintain anonymity. The audience will be allowed questions at the conclusion of each discussion.

B. 11:30 – 12:15 Lunch

C. 12:15 – 1:45 Teacher – learners will be asked to share how they implemented their differentiation activities and assessment results; deleting student names to maintain anonymity. The audience will be allowed questions at the conclusion of each discussion.

E. 1:45 – 2:15 The facilitator will summarize the results of the activities presented. All activities, assessments, and lesson plans will be copied and placed in the project notebook by subject area.

F. 2:15 – 3:00 Teachers will be asked to reflect on a 10 question Likert scale. There will be a section for free response.

Powerpoint Slides

Project-Based Learning
&
Differentiation

Facilitator: James Ferry

Rationale of project

- Homogeneous grouping of students based on academics
- Led to low EOCT scores, course passing rates, and graduation rates for inclusion students
- A few years ago the administration decided to heterogeneously group all students academically.
- EOCT scores and passing rates in senior economics as well as graduation rates for the years 2008 – 2014 were examined

EOCT Scores in senior economics

The resulting data analysis showed a significant increase in EOCT scores

Mann Whitney U Test on EOCT Score by Class Type (Homogeneous vs. Heterogeneous)

			Homogeneous		Heterogeneous	
Variable	*z*(42)	*p*	*M*	*SD*	*M*	*SD*
EOCT score	-2.58	.010	55.71	7.48	66.00	12.30

Passing rates in senior economics

The data analysis did not show a significant difference occurring in course grades

Independent Sample t-Test for Course Grade by Class Type (Homogeneous vs. Heterogeneous)

			Homogeneous		Heterogeneous	
Variable	*t*(40)	*p*	*M*	*SD*	*M*	*SD*
Course grade	-0.87	.390	71.29	8.94	73.91	7.45

Graduation rates

Graduation rates did not significantly improve

Fisher's Exact Test of Probability between Graduation Rates and Class Type

	Class Type		
Graduation	Homogeneous	Heterogeneous	*p*
No	21 [20.7]	7 [7.3]	>.999
Yes	10 [10.3]	4 [3.7]	

Note. Numbers in brackets represent the expected values of the cell.

Qualitative results from the study

1. Heterogeneous class grouping has been beneficial for inclusion students.
2. Inclusion teachers and special accommodations are important for inclusion students.
3. Inclusion students are better behaved and more focused in heterogeneously grouped classes.
4. Peer teaching has become a beneficial educational tool for inclusion students in heterogeneous classes.
5. Heterogeneous classes are perceived as offering more resources, materials, and time than homogeneous classes.
6. Students benefit most from being grouped according to ability to participate and individual needs.

From the quantitative analysis and the six resulting themes a three day professional development module was developed to enhance the benefits of heterogeneously grouped classes.

Day 1: Project – Based Learning Activities

Day 2: Differentiation

Day 3: Share results from implementation and reflection

** To be held at the end of the semester **

Project Goal

The goal of this project to develop a notebook of activities, assessments , lesson plans for faculty to utilize in their class.

The notebook will be housed in the school library.

The success of this project will be determined by the construction and maintenance of this notebook

Project – Based Learning Activity

Lesson Plan

Course / Subject: _____

Standard:

Essential Question:

Vocabulary:

Procedure:

Materials:

Assessment (Attach to back if necessary):

Differentiated Learning Activity

Lesson Plan

Course / Subject: _____

Standard:

Essential Question:

Vocabulary:

Procedure:

Materials:

Assessment (Attach to back if necessary):

Professional Development Evaluation

Directions: On a scale from 1 (being the least) to 10 (being the best) please answer the following questions. Circle the number that best correlates to your feelings.

The Professional Learning Sessions

1. The materials were engaging and useful.	1	2	3	4	5	6	7	8	9	10
2. The professional development activities were well planned and organized.	1	2	3	4	5	6	7	8	9	10
3. The atmosphere was enthusiastic, interesting, and conducive to a collegial professional exchange.	1	2	3	4	5	6	7	8	9	10
4. The method of delivering the professional development was efficient and effective.	1	2	3	4	5	6	7	8	9	10
5. Content and strategies proved to be useful in my classroom as demonstrated by student performance	1	2	3	4	5	6	7	8	9	10

The Program Facilitator

6. There was adequate time in the workshop sessions to allow for learning and practicing new concepts.	1	2	3	4	5	6	7	8	9	10
7. I would participate in future professional development activities organized through Southeast High School.	1	2	3	4	5	6	7	8	9	10
8. The facilitator demonstrated knowledge of the local problem and clearly established effective methods of researching the local problem.	1	2	3	4	5	6	7	8	9	10
9. The facilitator was encouraging and supportive before, during, and after the professional development sessions.	1	2	3	4	5	6	7	8	9	10
10. I would participate in future professional development activities organized by the facilitator.	1	2	3	4	5	6	7	8	9	10

Please use the space below and/or the back of this paper for additional comments or suggestions about this professional learning experience.

Appendix B: Letter to Superintendent.

January 29, 2014

Dear School Superintendent:

The purpose of this letter is to grant James Ferry, a doctoral student at Walden University permission to conduct research at the high school. The project, "A mixed-methods investigation of heterogeneously grouped inclusion students at Southeast High School" entails utilizing archival data of individual inclusion students' passing rates of senior economics, the Georgia End-of-Course Test in economics, and graduation. I will also conduct interviews lasting approximately thirty minutes with five teachers and eight adult inclusion students that no longer attend the high school. All archival data will be coded using letters and numbers to ensure confidentiality. Interviews will be recorded with participants identities concealed utilizing numbers. All data will be stored for five years after the completion of the study, at that time it will be destroyed. The purpose of this study is to determine whether or not a significant difference exists between inclusion students in homogeneous grouped classes or heterogeneous grouped classes. Southeast High School was selected because it is my home school and a significant difference could warrant the change of all courses from homogeneous grouping to heterogeneous grouping of inclusion students. At the conclusion of the study, a summary of the findings will be prepared and presented to the superintendent and school board. By providing the information below, you electronically sign and show your approval of this study.

Sincerely,
James Ferry
Researcher / Teacher

Superintendent Name: Garrett Wilcox
Phone Number: 912-537-3058
Email: gwilcox@vidalia-city.k12.ga.us

Appendix C: Letter to Principal

January 29, 2014

Dear Principal:

The purpose of this letter is to grant James Ferry, a doctoral student at Walden University permission to conduct research at the high school. The project, "A mixed-methods investigation of heterogeneously grouped inclusion students at Southeast High School" entails utilizing archival data of individual inclusion students' passing rates of senior economics, the Georgia End-of-Course Test in economics, and graduation. I will also conduct interviews lasting approximately thirty minutes with five teachers and eight adult inclusion students that no longer attend the high school. All archival data will be coded using letters and numbers to ensure confidentiality. Interviews will be recorded with participants identities concealed utilizing numbers. All data will be stored for five years after the completion of the study, at that time it will be destroyed. The purpose of this study is to determine whether or not a significant difference exists between inclusion students in homogeneous grouped classes or heterogeneous grouped classes. Southeast High School was selected because it is my home school and a significant difference could warrant the change of all courses from homogeneous grouping to heterogeneous grouping of inclusion students. At the conclusion of the study, a summary of the findings will be prepared and presented to the superintendent and school board. By providing the information below, you electronically sign and show your approval of this study.

Sincerely,
James Ferry
Researcher / Teacher

Principal Name: John E. Sharpe, Jr. John E. Sharpe Jr
Phone Number: 912 537-7931
Email: jsharpe@vidalia-city.k12.ga.us

Letter of Cooperation from a Community Research Partner

Vidalia Comprehensive High School
John Sharpe, Principal
1001 North Street, West
Vidalia, Gerogia 30474

January 29, 2014

Dear James Ferry,

Based on my review of your research proposal, I give permission for you to conduct the study entitled, "A mixed-methods investigation of heterogeneously grouped inclusion students at Southeast High School" within the Vidalia Comprehensive High School. As part of this study, I authorize you to utilize archival data of individual inclusion students' passing rates of senior economics, the Georgia End-of-Course Test in economics, graduation rates, and conduct interviews lasting approximately thirty minutes with five teachers and eight adult inclusion students that no longer attend the high school. All archival data will be coded using letters and numbers to ensure confidentiality. Interviews will be recorded with participants identities concealed utilizing numbers. All data will be stored for five years after the completion of the study, at that time it will be destroyed. At the conclusion of the study, a summary of the findings will be prepared and presented to the superintendent and school board. Individuals' participation will be voluntary and at their own discretion.

We understand that our organization's responsibilities include: Allowing you access to archival records, faculty willing to be interviewed, a room to conduct interviews, and use of the vault to store confidential records. We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Walden University IRB.

Sincerely,

Principal Name: John E. Sharpe, Jr.
Phone Number: 912 537-7931
Email: jsharpe@vidalia-city.k12.ga.us

Walden University policy on electronic signatures: An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically. Electronic signatures are regulated by the Uniform Electronic Transactions Act. Electronic signatures are only valid when the signer is either (a) the sender of the email,

or (b) copied on the email containing the signed document. Legally an "electronic signature" can be the person's typed name, their email address, or any other identifying marker. Walden University staff verify any electronic signatures that do not originate from a password-protected source (i.e., an email address officially on file with Walden).

Appendix D: Consent Form

A mixed-methods investigation of heterogeneously grouped inclusion students at Southeast High School

You are invited to be in a research study of academic grouping of inclusion students. You were selected as a possible participant because you have had direct contact and influence with the decision of heterogeneous grouping of inclusion students or you are a former student at Southeast High School . You are asked to read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by: James Ferry, a doctoral student at Walden University seeking a degree in Teacher Leadership.

Background Information

The purpose of this study is: The purpose of this study is to measure whether or not a significant difference exists between inclusion students' passing rates in heterogeneously grouped classes and homogeneously grouped classes. Heterogeneously grouped classes are classes that have students of all academic ability and skill levels. These students may be the highest ranking student to the lowest ranking student. Homogeneously grouped classes are classes that have students on the same academic ability and skill level. These students would be grouped according to how much they are able to do.

Procedures

If you agree to be in this study, you will be asked to do the following things:

I will conduct an interview with you. The interview will include questions about your perceptions and understandings concerning heterogeneously grouped inclusion students and homogeneously grouped inclusion students. The interview will take place in the sound proof interview room located in the interior of Southeast High School. The interview will take place on a day when school is not in session and will take about 30 minutes to complete. With your permission, the interview will be tape recorded. After

completion of transcribing the tape recorded interview into a word document it will be analyzed for common themes from all interview participants. After this analysis you will be contacted to be presented with the results for accuracy. This process is called member checking.

Risks and Benefits of being in the Study:

I do not anticipate any risks to you participating in this study other than those encountered in day-to-day life. The researcher holds a teaching position in the mathematics department. The researcher's role is separate from the work role currently held by the researcher.

There are no direct benefits to participating in this study. The practical implications of this study could change the scheduling of students at the local setting. Heterogeneous grouping of students could benefit all students from the mixing of students with all academic abilities. If a significant difference exists, the perceived benefits to heterogeneously grouped students could lead to higher passing and graduation rates for those students.

Compensation:

You will not be compensated for this interview.

Confidentiality:

The records of this study will be kept private. In any sort of report that might publish, any information that will make it possible to identify a participant will not be included. Research records will be stored securely and only researchers will have access to the records. Study data will be encrypted according to current University policy for protection of confidentiality. Research records will be kept in a locked file; only the researchers will have access to the records. I will tape-record the interview, I will destroy the tape recording five-years after the completion of the study by incineration.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the high school, researcher, or Walden University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

Contacts and Questions:

The researcher conducting this study is: James Ferry. You may ask any questions you have now. If you have questions later about the study, you are encouraged to contact him, 912-690-1711, james.ferry@waldenu.edu. You may also contact the researcher's study advisor with general questions about the study, Dr. Linda Sorhaindo at Walden University, linda.sorhaindo@walden.edu. Questions concerning your rights to participate should be directed to the Walden University Institutional Review Board at irb@waldenu.edu.

You will be given a copy of this information to keep for your records.

Statement of Consent:

I have read the above information. I have asked questions and have received answers. I consent to participate in the study.

Signature of Participant:_____Date:_____

Printed Name of Participant:_____

Signature of Investigator:_____Date:_____

Appendix E: Educator and Administrator Interview Questions

Interview Questions for Educators and Administrators

Interview Date: Location / Setting of the Interview:

Position at Southeast High School:

Gender:

Interview Number for Recording Purposes:

RQ: To what extent has the program change from homogeneous grouping to heterogeneous grouping had on the passing rate of inclusion students in senior economics at Southeast High School?

1. From your experience, do you believe there has been a significant difference in course passing rates of inclusion students with the change from homogeneous grouping of students to heterogeneous grouping of students?

RQ: To what extent do inclusion students' senior economics passing rates differ for inclusion students in heterogeneous versus homogeneous classes at Southeast High School?

2. If so, what do you believe the change has been?

3. If there has been a change in course passing rate, what would you attribute that change?

4. To what extent have you experienced inclusion students' passing rates differ in heterogeneous versus homogeneous classes at Southeast High School?

5. What have been some challenges for you in the implementation of a heterogeneously grouped classroom?

RQ: To what extent do inclusion students' passing rates on the senior economics End-of-Course Test differ when heterogeneously grouped compared to homogeneously grouped at Southeast High School?

6. Has the preparation for the End-of-Course Test assessment changed from implementing a heterogeneously grouped class from a homogeneously grouped class?

7. From your experience, to what extent have inclusion students' passing rates on the senior economics End-of-Course Test differ when heterogeneously grouped compared to homogeneously grouped at Southeast High School?

8. Do you believe that inclusion students benefit from heterogeneously grouped classes?

RQ: To what extent do heterogeneously grouped inclusion students' graduation rates differ from homogeneously grouped inclusion students at Southeast High School?

9. Have the inclusion students graduation rates differed from changing to heterogeneous grouping from homogeneous grouping of inclusion students at Southeast High School?

10. How have you differentiated instruction to accommodate all levels of academic achievement including the inclusion students' needs?

11. What is your philosophy on inclusion verses segregated special needs classrooms?

Appendix F: Adult Former Inclusion Student Interview Questions

Interview Questions for Adult former Inclusion Students

Interview Date: Location / Setting of the Interview:

Position at Southeast High School:

Gender:

Interview Number for Recording Purposes:

RQ: To what extent do inclusion students' senior economics passing rates differ for inclusion students in heterogeneous versus homogeneous classes at Southeast High School?

1. Did you pass senior economics at Southeast High School?

2. From your experience, do you believe there was a significant difference in course passing rates of inclusion students with the change from homogeneous grouping of students to heterogeneous grouping of students?

RQ: To what extent do inclusion students' passing rates on the senior economics End-of-Course Test differ when heterogeneously grouped compared to homogeneously grouped at Southeast High School?

3. If so, what do you believe the change has been?

4. If there has been a change in course passing rate, what would you attribute that change?

5. To what extent do you attribute your passing or not passing senior economics at Southeast High School?

6. Was the preparation for the End-of-Course Test assessment changed from implementing a heterogeneously grouped class from a homogeneously grouped class at Southeast High School?

7. Did you pass your economics End-of-Course Test?

8. To what extent do you believe that being in a heterogeneously grouped class helped you prepare for the economics End-of –course Test?

9. Do you believe that inclusion students benefit from heterogeneously grouped classes?

RQ: To what extent do heterogeneously grouped inclusion students' graduation rates differ from homogeneously grouped inclusion students at Southeast High School?

10. Did you graduate from Southeast High School with a regular education diploma?

RQ: To what extent has the program change from homogeneous grouping to heterogeneous grouping had on the passing rate of inclusion students in senior economics at Southeast High School?

11. Have the inclusion students graduation rates differed from changing to heterogeneous grouping from homogeneous grouping of inclusion students at Southeast High School?

12. What is your philosophy on inclusion verses segregated special needs classrooms?

Appendix G: Sample Educator and Administrator Interview Questions

Interview Questions for Educators and Administrators

Interview Date: 5/7/14 Location / Setting of the Interview: School Interview Room

Position at Southeast High School: Special Education Department Head

Gender: F

Interview Number for Recording Purposes: T-1

RQ: To what extent has the program change from homogeneous grouping to heterogeneous grouping had on the passing rate of inclusion students in senior economics at Southeast High School?

1. From your experience, do you believe there has been a significant difference in course passing rates of inclusion students with the change from homogeneous grouping of students to heterogeneous grouping of students?

I believe there has been a change I am not sure if it is significant. The special education student being in with general education students have learned good study habits, good social skills, they have been improvements. The general education students have learned from them too, because not every general education student is good at everything. So there are some things that the special education student might be better at. Been good for both groups. But being a significant improvement, I can't really say that it is or is not.

RQ: To what extent do inclusion students' senior economics passing rates differ for inclusion students in heterogeneous versus homogeneous classes at Southeast High School?

2. If so, what do you believe the change has been?

** answered above

3. If there has been a change in course passing rate, what would you attribute that change?

** answered above

4. To what extent have you experienced inclusion students' passing rates differ in heterogeneous versus homogeneous classes at Southeast High School?

I can just observe that it has benefitted them it appears that they do better in class, do better on their tests, do better overall, as far as saying more have passed, I don't know because I have not looked at that data.

5. What have been some challenges for you in the implementation of a heterogeneously grouped classroom?

Differentiating instruction is the most difficult thing because they are all at varied levels so you really have to get to know your students and know what their strengths and weakness are. And that's all students, special ed. and the general ed. students. So that you can design activities that really work with those different levels. So the differentiated instruction is the hardest part.

Are there any only challenges that you found besides differentiated instruction?

Yes there are other challenges. The students are in special education for a reason, they get services for a reason, so they have a lot of various needs that need to be address on a daily basis. And you have to address those needs while still working in the general education classroom. So, yes it's hard to adjust their needs when you have so many students. But I think the benefits outweigh.

Are there some that have emotional needs such as EBD students?

Yes that's right

RQ: To what extent do inclusion students' passing rates on the senior economics End-of-Course Test differ when heterogeneously grouped compared to homogeneously grouped at Southeast High School?

6. Has the preparation for the End-of-Course Test assessment changed from implementing a heterogeneously grouped class from a homogeneously grouped class?

They all have to take the same test. But because they learn differently I think even though they are homogeneously grouped I know we have done a lot of small group work at that time, because they are all taking the same test and it seems like they are going to be treated the same but really our students still learn differently so I know we've done a lot of small group and in put in some different interventions at that point.

7. From your experience, to what extent have inclusion students' passing rates on the senior economics End-of-Course Test differ when heterogeneously grouped compared to homogeneously grouped at Southeast High School?

I don't have any experience. Knowing those scores exactly I can't say. The reason for that is? I don't teach economics. The only experience I really have is looking at transcripts and meeting and on the transition side of it. The students can still pass the course without passing the test and I think that's probably the case for most of our students but I can't say for sure.

8. Do you believe that inclusion students benefit from heterogeneously grouped classes?

Yes, I believe they benefit from it. Most do, there some exceptions. There are some students That's not the least restrictive environment, but most benefit from it. Our school with our population.

You stated the least restricted environment, can you expand on what that means; the least restrictive environment?

Yes, the students need to be educated in the environment where they can get educational benefits and it's the least restrictive and it differs for all students. For some students to put them in a large classroom with 30 kids that's going to be restrictive to them because there are attention issues or their behavioral issues are so severe. So for them it might be a smaller group setting that's least restrictive.

RQ: To what extent do heterogeneously grouped inclusion students' graduation rates differ from homogeneously grouped inclusion students at Southeast High School?

9. Have the inclusion students graduation rates differed from changing to heterogeneous grouping from homogeneous grouping of inclusion students at Southeast High School?

We think we have more graduating with regular diplomas, however I can't say it's because of the grouping for sure. Because over the years the requirements, the graduation requirements have changed so much. So I can't say for sure that that's the reason or the only reason. It probably has something to do with more students graduating but because there have been so many other changes in the requirements and the curriculum you can't say it's one thing ir the other at this point, I don't think.

Changes in the curriculum, how has the curriculum changed recently?

We have gone to common core so we are in the process of that. Right now we have out of our four grade levels three of those grades are on different requirements at this point.

10. How have you differentiated instruction to accommodate all levels of academic achievement including the inclusion students' needs?

For students who have reading disabilities or writing disabilities sometimes I will give them an oral test instead of a written test. For students who have attention issues it may take longer to through a test, I might shorten that test or shorten the homework. Instead of having to do five problems do one problem so I know you understand it. Sometimes students will actually get different assessments based upon their level and where they are at. There's no reason to assess students something that you know they have not mastered. You might change it to see what they have mastered.

11. What is your philosophy on inclusion verses segregated special needs classrooms?

I think schools need to offer a variety of services, a continuum of services. Because like I was saying, what's least restrictive for one student may not be for another. I think you need to have all levels of inclusion, co-teaching, consultation, self-contained based upon the student needs. But you're not offer just self-contained if nobody needs it. Maybe one year someone does, maybe the next year no students do. You got to offer what the students need.

Appendix H: Sample Adult Former Inclusion Student Interview Questions

Interview Questions for Adult former Inclusion Students

Interview Date: 5/26/14 Location / Setting of the Interview: High School Interview Room

Position at Southeast High School: Former Inclusion Student – Graduated (Heterogeneous Group)

Gender: M

Interview Number for Recording Purposes: HE-1

RQ: To what extent do inclusion students' senior economics passing rates differ for inclusion students in heterogeneous versus homogeneous classes at Southeast High School?

1. Did you pass senior economics at Southeast High School?

Yes sir.

2. From your experience, do you believe there was a significant difference in course passing rates of inclusion students with the change from homogeneous grouping of students to heterogeneous grouping of students?

No sir, I don't.

You think it didn't matter what class you were in you were going to get the same experience?

Yes sir.

RQ: To what extent do inclusion students' passing rates on the senior economics End-of-Course Test differ when heterogeneously grouped compared to homogeneously grouped at Southeast High School?

3. If so, what do you believe the change has been?

** Since you don't think there was a change, do you think there's any reason that there was not a change, that there was a similarity in both classes?

From my experiences I think it was the best way to be taught for me. It was good.

** Being heterogeneous grouped, being mixed? Being mixed.

** What do you think could be attributed to that change?

If some kids didn't really understand, they had different problems learning. If they needed more time, like me I needed a little bit more time, it probably would be an issue for some kids. Some kids learn different.

** Do you think there possibly was a change as far as thinking from your same ability group class such as support classes in math to your heterogeneously grouped class in economics there might have been a change in behavior as far as overall class behavior?

Probably about the same depending on who's in there. Some teachers, when there's one teacher in there it's harder but when they have the support in there it's a little bit more easier for some classes.

4. If there has been a change in course passing rate, what would you attribute that change?

5. To what extent do you attribute your passing or not passing senior economics at Southeast High School?

Being responsible for a lot of information that the teacher gave us so we could study. She really supported us, she really helped us with all the notes and stuff. She made sure we was prepared for any test or quiz that we had.

6. Was the preparation for the End-of-Course Test assessment changed from implementing a heterogeneously grouped class from a homogeneously grouped class at Southeast High School?

Yes it has a little bit. In the homogeneous class it was easier. In the heterogeneous class you see the good academic student and they might try to push you and make you want TO succeed more.

** Do you think the other kids that were more academically able were able to guide you along?

Yes sir.

** Do you think some of that was you wanted to be like them, you felt like if they can do it I can do it too?

Yes sir.

7. Did you pass your economics End-of-Course Test?

Yes sir.

8. To what extent do you believe that being in a heterogeneously grouped class helped you prepare for the economics End-of –course Test?

It was good, it was enough for me to pass. She prepared us a lot of stuff to study with.

9. Do you believe that inclusion students benefit from heterogeneously grouped classes?

It depends on the situation. Some kids can't be around a bunch of people. They feel they need more help and don't know who to go to. It's based on the kids' ability.

RQ: To what extent do heterogeneously grouped inclusion students' graduation rates differ from homogeneously grouped inclusion students at Southeast High School?

10. Did you graduate from Southeast High School with a regular education diploma?

Yes sir.

RQ: To what extent has the program change from homogeneous grouping to heterogeneous grouping had on the passing rate of inclusion students in senior economics at Southeast High School?

11. Have the inclusion students graduation rates differed from changing to heterogeneous grouping from homogeneous grouping of inclusion students at Southeast High School?

I think more graduated before.

12. What is your philosophy on inclusion verses segregated special needs classrooms?

I think it depends on the individual student. If a kid can do the work in the heterogeneous class then he should be allowed to take it. It the work is too hard or he thinks he can't do the work then or his needs are too much then the student needs to be in a separate classroom.