

EDUCATOR EFFECT ON STUDENT ACHIEVEMENT ON  
GEORGIA HIGH SCHOOL ECONOMICS END-OF-COURSE TEST

by

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(Under the Direction of Wanda Stitt-Gohdes)

ABSTRACT

As economic conditions worsen in the United States, it is becoming increasingly important to educate high school students about the economic system and financial literacy. In the State of Georgia, public high school students are required to successfully complete an economics course and take an End-of-Course Test in Economics in order to graduate from a Georgia public high school. This course may be taught by members of either Business Education or Marketing Education teachers in the Career and Technical Education Department or the Social Studies Department based on school choice. This study aimed to identify if teacher background as defined by certification field (business education or economics) and teacher degree level as well as teacher gender have an impact on student achievement as measured by the Georgia Economics/Free Enterprise End-of-Course Test (EOCT) taken at the end of instruction. Of the 714 economics teachers who tested in spring of 2010, 41 teachers were randomly selected from the economics teacher population that tested in order to create a sample that was equal to the number of business education teachers who tested in spring of 2010. Descriptive statistics were performed to analyze the student achievement scores on the Economics EOCT based on teacher background as defined by teacher certification in business education or economics. One-way

ANOVA was performed to analyze the student achievement scores based on teacher certification. Two-way ANOVA was performed to analyze the student achievement scores based on (1) teacher background and teacher gender and (2) teacher background and teacher certification level. Descriptive statistics did show differences for teacher gender, teacher background, and teacher certification level. Results produced a mean student achievement score of 82.80% for the sample of business education teachers and 78.59% for the sample of economics teachers. There was a statistically significant difference in student test scores based on teacher background but not for the interactions of teacher background and teacher gender or teacher background and teacher certification level.

**INDEX WORDS:** High School, Business Education, Economics, End-of-Course Test, High Stakes Testing, Career and Technical Education, Georgia

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## DEDICATION

I would like to dedicate this page to the Georgia Public High School Business Education and Economics teachers. Without you, children would not be as prepared to enter post-secondary opportunities or the world of work. I could not have engaged in this process without your classroom instruction leading to students taking the Georgia High School End-of-Course Test in Economics. Thank you for giving every student quality instruction day-in and day-out and for being true to the profession of teaching.

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## TABLE OF CONTENTS

		Page
ACKNOWLEDGEMENTS .....		v
LIST OF TABLES .....		viii
CHAPTER		
1	INTRODUCTION .....	1
	Statement of Purpose .....	6
	Research Questions .....	7
	Conceptual Framework .....	9
	Significance of the Study .....	12
2	REVIEW OF RELATED LITERATURE .....	14
	Economics Education in the United States .....	14
	National Economics Content Standards .....	20
	Current Status of High School Economics .....	23
	Certification and Gender of the Economics Instructor .....	26
	High-Stakes Testing .....	33
3	METHOD .....	49
	Statement of Purpose .....	49
	Research Questions .....	51
	Design .....	52
	Participants .....	53



	Data Set Source.....	55
	Data Collection .....	58
	Data Analysis .....	58
4	RESULTS .....	63
	Purpose of Study .....	63
	Research Questions.....	64
	Analysis of Research Questions.....	62
	Summary .....	74
5	CONCLUSIONS AND RECOMMENDATIONS .....	75
	Purpose.....	75
	Research Questions.....	76
	Summary of Findings.....	76
	Conclusions.....	77
	Recommendations for Practice .....	80
	Recommendations for Research .....	81
	REFERENCES .....	84
	APPENDICES .....	95
A	Georgia Performance Standards (GPS) – Economics.....	96
B	Released Georgia High School Economics EOCT.....	101
C	Institutional Review Board Approval Letter.....	124

## LIST OF TABLES

	Page
Table 1: Certification for the States Requiring Economics for Graduation – 2009.....	28
Table 2: Data Analysis.....	61
Table 3: Descriptive Statistics for Sample of Economics EOCT Scores.....	66
Table 4: Variable Counts for Sample of Economics Teachers’ EOCT Scores.....	66
Table 5: Descriptive Statistics by Teacher Certification Area.....	69
Table 6: One-Way ANOVA Results.....	70
Table 7: Certification and Gender Two-Way ANOVA Results.....	72
Table 8: Certification and Certification Level Two-Way ANOVA Results.....	73
Table 9: Bonferroni Multiple Comparisons for Certification Level.....	74

## CHAPTER 1

### INTRODUCTION

Many researchers have studied the importance of teacher content knowledge and the presumed effects on student achievement scores (e.g. Clotfelter, Ladd, & Vigdor, 2007; Goldhaber & Anthony, 2007; Jepsen, 2005; Rockoff, 2004; Goldhaber & Brewer, 1997). The teacher is clearly a critical piece of every student's experience in the classroom (Ellwein & Glass, 1986). Investigations of teacher background can lead to uncovering certain characteristics of teachers whose students demonstrate high achievement. The question then becomes, how does one know that students demonstrate high achievement?

Research suggests that the only method for obtaining this data is through the use of testing to assess student achievement (Thorndike & Thorndike-Christ, 2010). The idea of accountability is central to the theory of school reform and testing is typically the tool used to measure the success of school reform models (Heubert & Hauser, 1999). In particular, the standards-based reform movement is “premised on the idea of setting clear, high standards for what children are supposed to learn and then holding students – and often educators and schools – to those standards” (Heubert & Hauser, 1999, p. 13). However, the use of tests as the only means to measure student achievement has raised controversy over the years due to the “high-stakes” nature of most tests (Kupermintz, 2002).

As a result of public opinion and legislative mandates, schools are being asked to account for the quality of their products (students) through demonstrated student achievement. Today,

there is also a strong belief among policy makers and the general public that test scores are directly related to the quality of teaching and teacher effectiveness (Clotfelter, Ladd, & Vigdor, 2007; Cross, 2003; Kupermintz, 2002; Vogler, 2002; Darling-Hammond & Young, 2002; Cohen & Haney, 1980). This implies there could be a direct relationship among teacher preparation, teacher quality, and student achievement (Jepsen, 2005; Clotfelter, Ladd, & Vigdor, 2007; Goldhaber & Brewer, 1997). As this potential relationship between teacher preparation, teacher quality, and student achievement in economics education is examined, conclusions may be drawn to assist teachers in better preparing students for life after high school.

For many students, the economics they learn in high school will be the only economics they will ever study (National Center for Education Statistics, 2009; Walstad, 2001; Siegfried, 2000), making that high school experience crucial. If the best opportunity for educating young American citizens about the importance of economics, personal finance, and responsible consumerism is through high school curriculum, then it is only logical to create programs in high schools that will prepare students to become productive and responsible citizens. However, economics courses vary considerably from state to state in amount of time allotted for the course, course titles, content coverage, and special topics included in the course (such as free enterprise, personal finance, business, or government and economics). Many efforts have been made by the Council for Economic Education (2009) to create national standards for high school economics for all states to follow and subsequently utilize when assessing student achievement.

In Georgia, there are 22 content standards (known as the Georgia Performance Standards or GPS) for the economics course (see Appendix A). The 22 content standards or GPS are divided into five sections: fundamental concepts, microeconomics, macroeconomics, international economics, and personal finance (Georgia Department of Education, 2004). While

variety of concepts is critical to a complete understanding of the content, it is speculated to be nearly impossible to cover the breath of content due to the number of content standards for the economics course in the amount of time allotted in the student's course schedule. In Georgia, the state required economics course is a half of a year or semester course (.5 Carnegie Units toward the 21 Carnegie Units required for graduation). This is half the amount of time allotted to other state-required courses in the areas of math, science, and English (Georgia Department of Education, 2009).

In the 2009 State Report by the National Council of Economic Education, only 21 states (Alabama, Arizona, Arkansas, California, Florida, Georgia, Idaho, Indiana, Louisiana, Michigan, Mississippi, New Hampshire, New Jersey, New Mexico, New York, North Carolina, South Carolina, South Dakota, Tennessee, Texas, and Virginia) require economics for high school graduation, with 11 of these states (Georgia, Louisiana, Michigan, Mississippi, New Hampshire, New Jersey, New Mexico, North Carolina, South Carolina, South Dakota, Tennessee, and Virginia) requiring some form of student testing (Council for Economic Education, 2009). Due to increases in educational agency accountability, most content areas in education rely upon standardized testing as a measure of student achievement (Linn, 2003). Georgia requires testing of the students' economic knowledge in the form of a standardized, end-of-course assessment (see Appendix B). The assessment is composed of questions pertaining to each of the five sections of Georgia Performance Standards for the high school economics course (Georgia Department of Education, 2009)

While assessment is often the focus of educational research, perhaps the most critical problem, according to Waldstad (2001), is the quality of instruction in the mandated courses. Waldstad (2001) concluded that quality of instruction varies dramatically by teacher. He further

stated that the variance in instructional quality could be due to limited teacher coursework and other factors including limited exposure to professional development. The issue of teacher quality is addressed in the standards-based education movement and more importantly addressed in federal legislation (Darling-Hammond, 2004). Across the United States, a variety of certification rules exist for the teachers of the economics courses; and many states are currently in the process of revising their certification rules due to No Child Left Behind legislation (Council for Economic Education, 2009).

No Child Left Behind (2002) changed the landscape of teacher certification by requiring states to ensure that teachers are “highly qualified” in each area they will be teaching. In previous years, federal mandates did not require school systems to employ teachers who were considered “highly qualified” in their specific content area. The concept of “highly qualified” was created to define teacher quality expectations and assist in closing the disparity gap in teacher quality around the United States (Darling-Hammond, 2004). A “highly qualified” teacher is defined by the federal government as a teacher who has at least a bachelor’s degree, has full state certification, and has demonstrated competency per the provisions of the Elementary and Secondary Education Act in each subject he or she teaches (NCLB, 2002). In addition, each state may have different provisions based on the state laws and rules of their certifying agency.

The Georgia Professional Standards Commission (GaPSC) serves as the certifying body for teacher licensure and identifies certification standards for each certification area in Georgia. As the certifying body, the GaPSC creates and enforces the “highly qualified” teacher employment rules and provisions for all public school systems in Georgia. In 2007, the GaPSC revised the certification requirements for the high school economics course to state that an instructor who is certified in Economics, Business Education, or Marketing Education may be

the instructor of the high school economics course (Georgia Professional Standards Commission, 2010). However, across the United States, teachers and school administrators are responsible for deciding which economics course should be taught, how it should be taught, and by whom.

High school instructor preparation also varies from college to college, and in Georgia an already professionally certified instructor can add on a certification field simply by taking the appropriate assessment (Georgia Professional Standards Commission, 2010). In Georgia, traditionally trained business education and marketing education instructors take a minimum of two courses in economics (at least one macroeconomics and one microeconomics course) in their undergraduate teacher preparation (The University of Georgia, 2010; The University of West Georgia, 2010; Valdosta State University, 2010). Currently at Georgia postsecondary institutions providing Social Studies Education as a major, there is no economics course requirement for completion of the program. Traditionally trained social studies instructors do have to take the Georgia Assessment for the Certification of Educators (GACE) in the content area of Economics to be considered highly qualified by No Child Left Behind guidelines. However, the GaPSC has ruled that educators holding business education or marketing education certification are highly qualified to teach the high school Economics course due to their coursework in economics and the number of questions on the Business Education and Marketing Education GACE exams in the category of economics. This ruling precludes business and marketing educators from having to take the GACE in Economics (Georgia Professional Standards Commission, 2010).

The literature discusses the differences between economics courses located in liberal arts departments versus business schools in a college or university. According to Dean and Dolan (2001), there are significant differences that exist in the respective economics curricula based on the collegiate department in which it is located. There is, however, a void in the literature

discussing the location and teaching assignment of high school economics courses. There is even more of a void in the literature regarding a possible relationship between students' achievement and the department or teacher background where the program is located. Shulman (1986) argued that curriculum was an experience and that teaching was shaped by personal and professional experiences teachers bring to their work with students. Recent studies generally support that a teacher's personal experience through course work or work experience in their particular content area has a positive effect on student test scores (e.g. Clotfelter, Ladd, & Vigdor, 2007; Goldhaber & Anthony, 2007; Goldhaber & Brewer, 1997; Jepsen, 2005; Rockoff, 2004). However, Jepsen (2005) stated assessing a relationship between teacher experience and student test scores assumes that the variance in achievement is due only to teacher and classroom factors rather than student factors such as motivation, parental support, and prior knowledge.

### **Statement of Purpose**

The purpose of this causal-comparative study was to compare Georgia High School Economics/Business/Free Enterprise End-of-Course Test scores for students in classes taught by an business education instructor (as defined by teacher certification in Business Education) to the Georgia High School Economics/Business/Free Enterprise End-of-Course Test scores for students in classes taught by a social studies instructor (as defined by teacher certification in Economics). Additional variables were analyzed in this study due to elements in the literature that suggested a relationship as well as a possible interaction between the variables. The other variables analyzed were teacher gender and highest degree held, as defined by the Georgia Professional Standards Commission through certification levels: BT-4, T-4, T-5, T-6, and T-7. The interactions between teacher certification and teacher gender as well as teacher certification and teacher certification level were analyzed through the use of ANOVA.



## Research Questions

Answers to the following questions were sought:

1. What are student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with a Business Education certification and students taught by teachers with a Social Studies certification?
2. Is there a statistically significant difference between student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with a Business Education certification and students taught by teachers with a Social Studies certification?
3. Is there a statistically significant difference between student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with a Business Education certification and students taught by teachers with a Social Studies certification based on teacher gender?
4. Is there a statistically significant difference between student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with a Business Education certification and students taught by teachers with a Social Studies certification based on teacher certification level (measured by the Georgia Professional Standards Commission as the highest degree earned)?

For this study, teachers were categorized based on the department in which they teach. If the teacher was classified by the school as belonging to the Career and Technical Education Department, they were considered to be a business education instructor. If the teacher was classified by the school as belonging to the Social Studies Department, they were considered to

be a social studies instructor. Although marketing education is also a permissible certification to teach the high school economics course in Georgia, as of spring 2010 no marketing education instructors reported test scores for the Economics EOCT. Thus for the sake of this study, no marketing teachers were reported as teaching the high school economics course. A Georgia business education instructor was defined as a person currently educating students in a Georgia public high school who was certified in business education according to the rules and regulations of the Georgia Professional Standards Commission and has completed either a traditional business education degree program or an alternative certification program in business education. A Georgia social studies instructor was defined as a person currently educating students in a Georgia public high school who had successfully completed a traditional social studies degree program and was certified in different fields within social studies to meet the requirements of highly qualified status for No Child Left Behind including Economics (National Center for Education Statistics, 2009; Georgia Professional Standards Commission, 2010).

Teacher gender was analyzed in order to establish whether there was a significant difference in the student achievement scores of students who had a male instructor versus a female instructor. Teacher gender was an area of interest in this study due to the history of both business education and social studies. Business education has beginnings in typewriting, bookkeeping, and shorthand, all of which were traditionally taught by a female instructor. Social studies had an early focus in history as the key content which was traditionally taught by a male instructor (National Center for Education Statistics, 2009).

Highest teacher certification level held also was analyzed to determine if significant differences existed in student achievement. In Georgia, certification levels are labeled thusly: BT-4, T-4, T-5, T-6, or T-7. The BT-4 is the certification level for a teacher who is provisionally

certified and has not completed teacher preparation coursework. The T-4 is the certification level for a teacher who is certified by passing the GACE exam in the content area and holds a bachelors degree (not necessarily in the content area in which they teach). The T-5 is the certification level for a teacher who is certified by passing the GACE exam in the content area and holds a masters degree. The T-6 is the certification level for a teacher who is certified by passing the GACE exam in the content area and holds a specialist degree. The T-7 is the certification level for a teacher who is certified by passing the GACE exam in the content area and holds a doctoral degree. For this study, due to the limited number of teachers in each group, T-6 and T-7 level certifications were analyzed together as advanced degrees. Highest degree held by instructor was included in this study as research suggests a relationship between highest degree (in this case, based on certification level) held by the teacher and the student achievement scores (Walstad, 2001).

### **Conceptual Framework**

Per the No Child Left Behind (NCLB, 2002) legislation, teachers in the United States are responsible for gains in student achievement which are measured through high-stakes testing. High-stakes tests include all academic achievement tests used to make important decisions about the evaluation of K-12 students, including promotion, retention, and graduation (Paris & McEvoy, 2000). In Georgia, required high school level high-stakes tests include End-of-Course Testing and graduation testing. The goal of high-stakes testing is to ensure that all students across the United States are receiving instruction by a teacher with a certain level of content knowledge in the subject area which they are teaching. High-stakes tests are also used as an indicator of the educational impact of a school or teacher on student achievement (Thorn & Mulvenon, 2002). High-stakes testing served as the conceptual framework for this causal

comparative study because the decision regarding who (i.e., Business or Social Studies) will teach the economics course is based on student achievement scores for the Economics End-of-Course Test.

Proponents of testing believe that a well-constructed test matched to common, clear goals can be used as an indicator of student success (Kreitzer & Madaus, 1995). When assessments are tied to high expectations for students and based on a set of curriculum standards, a strong connection occurs between the curriculum and the assessment (Thorndike & Thorndike-Christ, 2010). This is the goal of the standards-based movement, to clearly state the desired learning outcome and then develop assessments to indicate if students are meeting the standards (Stiggins, 2001). Mandated courses and testing requirements, proposals for improved teacher education programs, and school restructuring through a set of more challenging standards each have been a focus over the past 20 years for school improvement and increased student achievement (Darling-Hammond, 1997). Research shows testing is the most consistent and comparable tool to indicate if improvements or increases in student achievement have been met (Kreitzer & Madaus, 1995; Stiggins, 2001; Ward & Murray-Ward, 1999).

Minimum competency testing is a process intended to establish if an individual has obtained the minimum level of academic skill considered necessary to indicate achievement in an academic program (Thorndike & Thorndike-Christ, 2010). An individual student's achievement is measured by meeting or exceeding some pre-established level of performance. According to McClung (1979), content validity for minimum competency testing consists of two types: curricular validity, which refers to the match between the test and the curriculum, and instructional validity, which is the establishment of a match between what is assessed on the test and what actually happens in the classroom. Since state achievement standards are intended to

align to what is taught in the classroom and the assessment, typically there is some degree of curricular and instructional validity with high-stakes assessments such as minimum competency tests (Thorndike & Thorndike-Christ, 2010). As this study sought to identify statistically significant differences in student achievement scores on the Economics EOCT, the notion of high-stakes testing (in this case, the EOCT) as the tool to measure the degree to which the standards were met through classroom instruction provided support for a relationship between about teacher background and the level of student achievement on the Economics EOCT.

On March 10, 2009, in an address to the Hispanic Chamber of Commerce, President Obama stated that he wanted states to adopt “tougher, clearer” standards that rival those in countries where students out-perform their American counterparts. He called on states to join together to “develop standards and assessments that don’t simply measure whether students can fill in a bubble, but whether they possess 21<sup>st</sup> century skills like problem solving, critical thinking, creativity, and entrepreneurship” (Transcript, President Obama, The New York Times, 2009). Most educators use the methods their teachers used as well as the framework under which they were taught. Thus, traditionally, social studies education has consisted of memorization and regurgitation of specific facts about topics receiving minimal coverage (Gerwin, 2004; Goodland, 1984; Grant, 2006; Powell, Farrar, & Cohen, 1985). According to studies on teacher quality reform, teachers’ lived experiences, as well as classroom experience and content knowledge affect the quality of instructors which, in turn, affect student achievement (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2008; Darling-Hammond & Young, 2002; Allgood & Walstad, 1999). According to John Dewey (1938), teachers are responsible for providing students with experiences that are immediately valuable and which better enable students to contribute to society. Teachers must draw upon both their knowledge of subject matter to select

appropriate topics and their knowledge of students' prior knowledge and conceptions to formulate appropriate representation of the content to be taught (Dewey, 1938). Dewey's (1938) philosophy of the interconnectedness between education and achievement served as a guiding framework for this study as the relationship between teacher background (content knowledge) defined by highest degree held (certification level) and student achievement was analyzed as determined by the Georgia High School Economics End-of-Course Test. Teacher degree held has been utilized as an indicator of "teacher quality" in many research studies (Goldhaber & Anthony, 2007; Jepsen, 2005; Vogler, 2002).

### **Significance of the Study**

This study sought to extend existing knowledge in high school economics practice and research. For high school administrators, this study may assist with the planning, scheduling, and staffing of high school economics courses. Moreover, this study may be used as a foundation for follow-up studies on student achievement in high school economics.

One implication of this study concerns the justification of multiple certifications for the course of economics. While Georgia maintains a certification policy enabling any educator holding a business education certificate, marketing education certificate, or economics certification to teach economics, other states such as Texas are contemplating removing business education teachers from the approved list to teach the high school economics course (Texas Education Agency, 2010). This information is critical because many states may model their educational policy decisions based on what occurs in Texas due to the influence Texas has on the instructional resource and textbook industry (Council for Economic Education, 2009). The data analysis in this study may be useful to justify the retention of business education and marketing education as certification areas permitted to teach economics in Georgia. With three content

areas certified to teach the high school economics course, school administrators will have more options with respect to staffing.

Data from this study may serve as a foundation for further research in high school economics. Test score data from this study may be used to identify teachers with high student achievement scores in order to create follow-up studies which might identify effective instructional methods and practices corresponding to increased student achievement scores. Through this study, teachers may also be identified to participate in focus groups to explain how they became the instructor (choice, specific placement, or lottery) for the Economics course. This information could be utilized by business education teachers in neighboring counties in their request to teach the Economics course.

## CHAPTER 2

### REVIEW OF RELATED LITERATURE

#### **Economics Education in the United States**

Individuals have to deal with a variety of economic problems affecting their own lives like how to budget to spend their incomes and what to do with their savings. Knowledge of economics is helpful in this respect so that citizens can understand the consequences of their economic actions. Many of the vital issues in government policy are economic in nature, and an active voting citizen will need to have a “grasp of economic theory to participate in our society” (Calderwood, 1970, p. 155).

Changes in economic education started to emerge in US schools after swings in the US economy during the 1970s changed the way that economic education was constructed. The content of economics courses began to shift with the addition of personal finance as well as an increased focus on the world of work. Elements of financial education such as reinforcing investment and the use of the stock market were beginning to be included in economics courses in place of the previous approaches that just outlined the historical contexts of economics. The Securities Industries Association developed the “Stock Market Game” to teach the role of markets in the United States to high school students in the late 20<sup>th</sup> century (Yarrow, 2008). Soon, other financial institutions followed in these efforts such as Junior Achievement and the Jump\$tart Collation. The School to Work Opportunities Act in 1994 and job shadowing incentives during President Clinton’s term were implemented to encourage schools to teach



secondary students about occupations in the labor market. Economic education continued to expand, although the curricular emphasis on the US economy's achievements diminished. The number of children taking the economics course increased significantly in the 1980s, particularly after several states began to require economics in high school (Yarrow, 2008).

Today, the need for economic and financial literacy in high school is more critical than ever. Research conducted by the Jump\$tart Collation (2007), a non-profit consortium for financial literacy and economic education, states that more universities lose students to personal problems credit card debt than to low academic achievement. In 2009, reports of job outsourcing, employee layoffs, complete product line discontinuation, and stock market failures exploded in the news. With the unstable nature of the economy, companies gain to focus on creating sustainable business practices. These trends in the economy have caused state school systems to analyze the importance of requiring a course in economics for high school graduation. To order to better understand the rationale behind requiring an economics course in high school, an overview will be provided in this chapter on the history of economics as a course in high school and history of economics in the field of business education as well national economics standards for high school. In addition, a review of the current status of high school economics including current teacher qualifications and characteristics including teacher certification and gender will be discussed.

Beyond content standards and teacher characteristics, another important element to be discussed in this chapter is assessment. According to the Council for Economic Education, 21 states require a course in Economics to graduate from high school; and 19 of those 21 states require a standardized assessment to measure student achievement in the course. Currently, eight other states are also requiring testing; however, the course is not mandated as a graduation

requirement (Council for Economic Education, 2009). This form of high-stakes testing will be reviewed as well as the specific Georgia assessment requirements for high school students and students enrolled in the required economics course. Before we begin the discussion on assessment, teacher quality, and standards, it is important to review the history of economics as a course and business education as a content area in American high schools.

### **History of US Economics Course**

Courses in economics education started to emerge in US public schools about 20 years after World War II, when there was a shift toward thinking of America in terms of a capitalist society. Americans were influenced by politicians, media, and businesses to think of their lives and the United States in economic terms which changed the lens through which citizens viewed themselves (Allgood, & Walstad, 1999; Becker, Green, & Rosen, 1990; Calderwood, 1970; & Yarrow, 2008). Due to this shift in the attitude of what the underlying values of America entailed and a new worldview that inspired leaders, the K-12 curriculum shifted to include economics in the history departments of US public high schools. This movement was begun by business and political figures and also was supported by many educators. The newly embraced economic literacy rationale pushed for the development of new courses for students that focused on the idea of making students more productive citizens by teaching them economic and business concepts (Yarrow, 2008).

As business and college leaders became increasingly concerned with the lack of general economic knowledge in the 1950s, an emphasis on including economics in the high school curriculum began to take shape (Bach & Saunders, 1965). Economics has long been infused in the high school social studies curriculum through the American history course. Walstad and Watts (1985), however, questioned how many students are exposed to significant economics

through infusion. Due to the advocacy effort by the Joint Council on Economic Education, economics began to be offered in the social studies department as a standalone elective for high school students in the late 1950s (Council for Economic Education, 2009).

As these concepts of including elements of economic standards started to appear in all schools, textbooks and other media used in the history classroom also changed to meet the needs of the curriculum; and the US started to see a shift toward “social studies” education and away from just “history” which included history, civics, geography, world cultures. The idea of “social studies” included teaching students standards that might affect social change and was supported and encouraged by early leaders in education reform like John Dewey, who believed in learning by doing and utilizing the experiences of both the student and the teacher to build educational knowledge (Yarrow, 2008).

### **History of Economics in the Business Education Content**

Business education began as typing, bookkeeping and other industry-supported skill courses. In 1827 Massachusetts passed legislation requiring municipalities with 500 or more families to establish a high school (Stitt-Gohdes, 2002). Bookkeeping was one of the specific required courses. By this time, Boston was a major seaport and a seat of commerce in New England, making bookkeeping a reasonable requirement (Hosler, 2000). In 1862 shorthand was offered in public high schools and it was also in 1862 that the first comprehensive high school was created (Stitt-Gohdes, 2002).

In the late 1800s, John Robert Gregg brought his shorthand system to the United States from Great Britain (Stitt-Godhes, 2002). Its popularity quickly outpaced the Pitman system, so that “. . . by 1935 it was offered in 96 percent of public high schools teaching shorthand in this country” (Hosler, 2000, p. 10). In 1868, Christopher Sholes invented the first practical

typewriter and it became necessary to educate people on the proper use of the typewriter (Stitt-Gohdes, 2002). Historically, typewriting and subsequently keyboarding courses frequently encouraged students to enroll in additional business education courses (Hosler, 2000). Prior to the Civil War women typically did not work in the business community. However, with large numbers of men at war, businesses found it necessary to employ women. To some degree, this employment practice continued after the war and into reconstruction (Stitt-Gohdes, 2002). In fact, “To encourage women to enroll in his New York Business School to be prepared as ‘typewriters,’ Silas S. Packard offered free tuition. His school was the first to teach stenography and typewriting” (Schrag & Poland, 1987, p. 3). In 1878 Frank McGurkin introduced touch typing; and “By 1900, his method was almost universally accepted” (Hosler, 2000, p. 8).

The 1960s brought significant change to business education. IBM introduced the first Selectric typewriter in 1961 and the magnetic tape selectric (MTST) typewriter in 1964 (Stitt-Gohdes, 2002). In 1963 the Joint Council on Economic Education brought together “over 60 collegiate and secondary school business educators . . . to discuss how economics could be implemented in business courses” (Hosler, 2000, p. 23). The year 1965 saw the first minicomputer invented and soon after word processing offered in the business education curriculum. The invention of the minicomputer marked the beginning of dramatic curricular change in business education, change that continues to permeate business education curriculum at every level today (Stitt-Gohdes, 2002).

Most of the early business education teachers received their training in private business schools (Bahr & Wegforth, 1976). Half of the students trained by business education institutions went into business and not education after World War II because of the economy. Business education in high school was seen as a strictly vocational subject to prepare people to enter the

new capitalist society; but as time went on, students began to see the value of business knowledge and skills for personal use, particularly typewriting (Walters & Nolan, 1950). Other courses such as sales, business law, contracts, and consumerism led to the implementation of Economics as a topic in all business education courses (Price, Hopkins, & Duff, 1972). Over the course of the 1970s, business education became more aligned with courses in collegiate business schools such as accounting, economics, finance, insurance, and investing (Bahr & Wegforth, 1976). Historically, the major goals of business education were to create students who would be able to be successful upon entrance into a business career, educate students to be intelligent consumers, and instill in students a “clear understanding of the nation’s economy” (Walters & Nolan, 1950, p. 9) or education for and about business.

The issue of the location and overlap in social studies and business education courses is not new. In 1938, W.C. Kimmel, who was the editor of the magazine *Social Studies*, in discussing the responsibilities of business education and social studies, said:

The major responsibility of social studies is to introduce youth to the many-sided social world and its complex relationships between men and the institutions in human affairs, to equip youth with an understanding of concepts evolved in the social sciences, to serve as guides to thought and social action, and to help youth to develop a series of techniques that will promote more effective social organization and community action. The major responsibility of business education is conceived to be that of helping youth apply the concepts of social sciences and their understanding of social relations to those areas of experience concerned directly with the business world and its practices. (p. 32)

Though this statement was made in 1938, it is still the general understanding of the public today. Many people believe that business education and career and technical education take academic

standards such as those learned in social studies and apply them to contextual situations or “real world” problems. This is not solely the case in the National Business Education Association content standards. In the standards, the business education curriculum also includes conceptual knowledge.

### **National Economics Content Standards**

As more schools across the United States began to offer economics as a course, non-profit groups created national standards in order to facilitate curriculum development for the states. When evaluating the content standards for each content area, a reader will also see an overlap in economic topics and levels of application of the standards in both the National Standards for Economic Education by the Council for Economic Education and National Standards for Business Education by the National Business Education Association utilized by many states when creating state standards (National Governors’ Association, 2010).

#### **Council for Economic Education Standards**

Founded in 1949 as the Joint Council on Economic Education (today called the Council for Economic Education) is the premier source for teacher training, education materials and curriculum reform in the area of economics (Council for Economic Education, 2010). Most states have their own affiliate of the Council for Economic Education. The Georgia Council for Economic Education was founded in 1972 and has multiple centers around the state which are typically housed at post-secondary institutions. These centers also have volunteer-lead teachers around the state to assist teachers with their instructional planning (Georgia Council for Economic Education, 2010). Another organization, the Foundation for Economics Education, is based in California and offers many regional workshops for teachers throughout the United States (Foundation for Economics Education, 2010). It is the hope of these organizations to help

prepare teachers who do not have the content knowledge due to a lack of course work in economics.

To create National Economics Content Standards, the Council for Economic Education brought together representatives from different professional organizations to write objectives to provide teachers and school systems a streamlined set of standards to teach economics education in grades K-12. This publication includes benchmarks for 4<sup>th</sup>, 8<sup>th</sup>, and 12<sup>th</sup> grade students as well as suggested activities for the teacher to use in the classroom when teaching the economic concepts. The standards are written in two sections; first, what the student will understand and second, what the student will be able to use this knowledge to do (Council for Economic Education, 2010). The standards cover the following twenty topic areas: scarcity, decision making, allocation, incentives, trade, specialization, markets and prices, role of prices, competition and market structure, institutions, money and inflation, interest rates, income, entrepreneurship, economic growth, role of government and market failure, government failure, economic fluctuations, unemployment and inflation, and fiscal and monetary policy (Council for Economic Education, 2010).

The standards are not national mandates but a suggestion for states or school systems to use when creating curriculum. These standards are principals of economics and not methods of application of the principles. The authors suggest this is because different states have different economic development needs and students would need to be aware of their individual state's economy. An example used in the text are that Florida and the vegetable growers might be more concerned with their high school students coming into the labor market to know the implications of free trade on the price of their products (Siegfried & Meszaros, 1998).

Siegfried and Meszaros believe that by not having nationally-based content standards the possibility exists that the economic concepts will not be taught in the classroom or they will be marginalized by other subject areas. The authors believe the standards not only assist teachers in knowing what needs to be taught and when (pacing guide), but they also establish a way for teachers to feel more confident with the teaching material because of the activities included in the benchmarks. Each standard has a fundamental principal of economics that an economically literate student should understand as well as a statement of what the students should be able to do with that knowledge when they leave high school (Siegfried & Meszaros, 1998).

### **National Business Education Association Standards for Economics**

The National Business Education Association (2007) listed economics and personal finance as one of the 11 key content areas for business education in the National Standards for Business Education. The rationale for including economics and personal finance is: “Individuals will be able to use knowledge about the economy and economic system to manage the individual’s role as an informed citizen and wise consumer and producer of goods and services; understand how to effectively manage personal finances” (Watts, 2006, p. 20-21). The statements of what the students should be able to accomplish when they leave high school all have real-world implications.

The National Business Education Association (NBEA) has published National Standards for Business Education since 1995. In the latest edition, NBEA (2007) listed nine topic areas in which the Economics standards were organized, allocation of resources, economic systems, economic institutions and incentives, markets and prices, market structures, productivity, the role of government, international economics concepts, and aggregate supply and aggregate demand. Within each topic area, the standard is stated and a performance level indicated, with level 1



providing a foundation recommended for elementary students, level 2 is recommended for middle school students, level 3 is recommended for secondary school, and level 4 recommended for two-year postsecondary or technical college students (NBEA, 2007). The stakeholders involved in the standards-writing process for Economics believed that all students should know include: scarcity, choice, opportunity cost, personal decision making, productivity, economic systems, institutions, incentives, exchange, money, interdependence, markets, prices, competition, supply and demand, as well as the roles of consumers, governments, and citizens (NBEA, 2007).

### **Current Status of High School Economics Course**

For many students, the economics they learn in high school may be all the economics they will ever study. If the best chance of educating United States citizens about the importance of economics, personal finance, and responsible consumerism is in high school, then it is only logical to create programs in high schools that prepare students in the best possible way (National Center for Education Statistics, 2009; Siegfried, 2000; Walstad, 2001). In the article by Siegfried and Meszaros (1998), the authors conclude with

if more high school students understood the effect on lifelong income of working after school for 20 hours a week, the monetary and nonmonetary incentives for taking a driver's education course, the cost of going into debt, and how to identify careers that will have fruitful job openings when they enter the labor market" then the economics courses have done their job. (p.141)

This article supports the need for standards in economics but it also unknowingly talks about elements of business education and key factors that are in the standards of not just economics but every business education course. If achievement in economics is something that

will pull the United States out of the current economic crisis by having more economically minded citizens, then there needs to be a study to determine if the economics courses are meeting

In the article “Economics Education in US High Schools” by Walstad (2001), the author discussed the results of an evaluation that was completed on the state of high school economics in United States public high schools. Most high schools have an economics course. Some students are required to take the course while others are simply given the opportunity to take economics as an elective. In high school, the economics course is only one course and is usually only taken by “college-bound” students. Less than half of the college-bound students take economics in college. Throughout the article the author discussed an assessment of economics courses that included: enrollments and demographics in the public high school economics courses, content within the public high school economics courses, testing in the public high school economics course, students’ achievement in public high school economics, economic content in other high school subjects, high school economics teacher education, and contributions from other organizations and economists (Walstad, 2001). In order to best situate the current situation, we must review the history and development of the economics course in United States public high schools.

Since 1990, the High School Transcript study (HSTS) has been analyzing the course-taking patterns of high school graduates based on transcripts from a national sample in conjunction with the National Assessment of Educational Progress (NAEP) 12<sup>th</sup> grade assessments (National Center for Education Statistics, 2009). A comparison between the results of the first study in 1982 and the most recent study in 2005 indicate that the percentage of high school graduates who have taken an economics course has risen from 49% to 66% (National Center for Education Statistics, 2009). The percentage of students taking an economics course

has steadily grown as state boards of education and/or state legislators have added requirements for all high school students to take a course in economics. According to the Council for Economic Education (2010), in 2001 only 13 states required an economics course for graduation and even fewer states required the students to take a test upon completion of the economics course. The majority of the states that required the course and assessment were in the South and West of the United States. The CEE publishes a bi-annual status of economics education report and the last report was for 2008-2009 school year. In this report, the CEE found that 21 states were requiring a course in economics for high school graduation. However, these mandated courses vary greatly in content and in teacher quality. Though many studies analyzing teacher quality exist, there is a lack of literature that describes the effect course location within the high school departments has on student achievement in economics.

### **Location of the Economics Course in US Colleges**

Where the economics courses reside in a school might be a key element in assessing the effectiveness of the education students are receiving in relation to their understanding of the standards and their relationship to the real world of business. If a student cannot relate the concepts to the reality that awaits them once they are out of school, then perhaps the pedagogy of the “department” does not match the needs of the student. Studies have been conducted in regard to the location of the course at the college level and what the differences in the program are based on the location (Dean & Dolan, 2001). The main problem addressed in the study by Dean and Dolan was if the location (either in the liberal arts school or business school) of the economics department alters the major. The purpose of the study was to look at character differences such as the scope of the standards in the courses offered in the program based on whether it was in the liberal arts school or the business school in order to identify difference in

content. In this study, empirical results strongly indicate that the administrative location of an economics department in business versus liberal arts schools significantly changes the character of the program offered to the majors (Dean & Dolan, 2001). However, this study looked at program quality, not student achievement.

### **Certification and Gender of Economics Educators at the High School Level**

Variables such as teacher certification, teacher content knowledge, and teacher gender may play a role in student achievement. According to many studies, teacher content knowledge is the most critical factor in student achievement outside of student motivation and other student specific variables (Clotfelter, Ladd, & Vigdor, 2007; Goldhaber & Anthony, 2007; Jepsen, 2005; Rockoff, 2004; Goldhaber & Brewer, 1997).

### **Instructor Content Knowledge Effect on Student Achievement**

Economists were the first professional group to initiate a movement for the reform of the social studies curriculum. From studies conducted with high school graduates, economists felt there was a lack of teacher preparation in the social studies content area (Fenton, 1966). Fenton went on to state, “while teacher receptivity to economic education is high, teacher confidence in handling economic ideas is low” (p. 340). Research in economic education finds that teacher knowledge is one factor affecting student learning (Allgood & Walstad, 1999). Clark and Davis (1992) found the number of economics credits the teacher earned played a large role in students’ achievement. In their study, 33% of the students taught by teachers who have more than three credits in economics posted cognitive gains; however, only 35% of those whose teachers had less than three credits in economics posted cognitive losses. Dills and Placone (2008) found that teacher economic knowledge positively and significantly affected student achievement. However, they found that teacher attitude had little or no effect on student achievement; but

students taught by a teacher who volunteered to teach the course and were not assigned the course by their administration posted higher achievement scores.

Soper and Walstad (1988) found that students' economic knowledge increased by .5 questions on the Test of Economic Literacy for each college economics course taken by their teacher during their teacher preparation or degree program. In their 1988 survey study, 11% of social studies teachers had no economics coursework in their undergraduate degree program. The study also found that 15.5% of Economics teachers also teach business education regularly, indicating that some Economics teachers are teaching both social studies and business education. In a survey of teacher options, from social studies teachers polled, the median requirement they thought was needed was 2.5 classes in economics (Highsmith, 1990).

In a 2005 study of preparation and experiences of Advanced Placement (AP) Economics instructors, Scahill and Melincan found the most popular undergraduate major of teachers of AP Economics was History (24.8%), followed by Economics (19.6%), Social Studies (16.4%), Political Science (8.7%), Education (8.0%), Business Education (7.7%), Government (1.4%), Sociology (1.4%), Accounting (1.0%), and other (no subject had more than two respondents – 10.8%). In the study it was found that 20 of the surveyed teachers (6.8%) had taken no undergraduate Economics courses. The study also found that 22.6% of the survey respondents had taken no more than three economics courses at either the undergraduate or graduate level (Scahill & Melincan, 2005).

Baumol and Highsmith (1988) found “the number of relatively untrained teachers in economics is quite large, with 25% of the high school economics teachers having accumulated less than six semester or quarter hours of course credit in the economics field” (p. 260). Taking just one or two courses in economics is inadequate preparation in the view of a distinguished

national committee of economists and educators who studied the issue of standards for teacher education in economics. The committee recommended that all prospective teachers of social studies, business education, and home economics (family and consumer sciences) take at least three semester courses in economics (Baumol & Highsmith, 1988). Teachers who specialize in teaching a regular economics course in high school should take at least six semester courses. In fact, several studies have reported that teachers needed about five or more college economics courses before substantial positive effects from course work were apparent in the economic understanding of teachers or their students (Bach & Saunders, 1965).

Walters and Nolan (1950) believed that “the fact that economics can be controversial in nature, and that the prosperity of our country depends upon the economic beliefs of our citizenry, makes it apparent that the subject should be taught only by one with adequate preparation” (p. 84). The authors reviewed many studies that suggested teachers of high school economics take at least six courses in economics themselves before teaching the high school course (Walters & Nolan, 1950). Recent studies generally support that teacher experience through coursework has a positive effect on student test scores (Clotfelter, Ladd, & Vigdor, 2007; Goldhaber & Anthony, 2007; Goldhaber & Brewer, 1997; Jepsen, 2005; Rockoff, 2004). In his 2005 report to the Council for Economic Education, Michael Watts stated,

given the enrollment patterns in the United States, it could easily be argued that not enough has been done to promote economic education in business education programs, given the clear content overlaps and stronger instructor training and interest in economics and business topics in these programs, vis a vis social studies teachers. (2006, p. 63)

This illustrates the need to enlist researchers to assist with the promotion of business education as quality coursework that is intended for all students, not just students on a “vocational track” as previously described in the literature (Becker, Greene, & Rosen, 1990).

### **Certification Requirements for Economics Instructors**

Across the United States, a variety of certification rules exist for the Economics course. The majority of the programs are housed in the social studies department (Council for Economic Education, 2009). No Child Left Behind (2001) requires teachers to be “highly qualified” in a content area by either completing degree work in the content area or passing an assessment of content knowledge (NCLB). Teachers are now required to obtain certification that is specific to the course they are teaching if they do not have a content area specific degree as per the “highly qualified” standards of No Child Left Behind. For example, a social studies teacher would need to be certified in different areas such as world history, United States history, government, geography, and economics, depending on the courses they taught in high school. This change in broad certification allows teachers who are certified in a content area to add another endorsement to their current certification. Due to this, more business education teachers are instructing the economics course than in previous years because the course specific certification (through degree work or certification assessment) is now required of all social studies teachers for each content course within the field (NCLB, 2001).

The most common certification test for this content area is the PRAXIS II created by the Educational Testing Service (ETS); however, many states such have their own required certification tests (Council for Economic Education, 2009). Below is a summary of the certification requirements for the 21 states requiring students to take economics for graduation per the Council for Economic Education Report of the States.

Table 1

*Certification Information for the States Requiring Economics for High School Graduation - 2009*

State	Certification Required	Certification Test	Additional Requirements
Alabama	Economics	PRAXIS II	None
Arizona	Economics	State Test	24 content credit hours
Arkansas	Social Studies		
California	Social Studies	State Test	(continued)
Florida	Social Studies	State Test	
Georgia	Business Education Economics Marketing Education	State Test	Business Education and Marketing Education certifications are permitted without PRAXIS II
Idaho	Social Studies	PRAXIS II	–
Indiana	Social Studies	–	–
Louisiana	Business Education Marketing Education Social Studies	–	–
Michigan	Economics Social Studies	–	–
Mississippi	Economics endorsement	PRAXIS II	Business Education, Marketing Education, and Social Studies may add endorsement
New Hampshire	Social Studies	–	–
New Jersey	Finance/Economics/Law Social Studies	PRAXIS II	Only Business Education may add endorsement
New Mexico	Social Studies	State Test	–
New York	Social Studies	–	Local system may allow Business Education
North Carolina	Economics	PRAXIS II	– (continued)



State	Certification Required	Certification Test	Additional Requirements
South Carolina	Economics Social Studies	–	–
South Dakota	Business Education Economics	PRAXIS II	Business Education certification is permitted without PRAXIS II
Tennessee	Economics	PRAXIS II	–
Texas	Business Education Social Studies	–	Proposed striking Business Education
Virginia	Social Studies	PRAXIS II	6 semester hours of Economics coursework

### **Certification Requirement of Economics Instructors in Georgia**

The Georgia Professional Standards Commission serves as the certifying body for teacher licensure. In 2007, the Georgia Professional Standards Commission established that the Economics course can be taught by the following certification fields: Economics, Business Education, and Marketing Education. State-created teacher content knowledge assessments referred to as the Georgia Assessment for the Certification of Educators (GACE) were implemented to distinguish which instructors were “highly qualified” or had an appropriate amount of content knowledge in the subject area. The GACE is currently utilized in Georgia in place of the PRAXIS II (Georgia Professional Standards Commission, 2010). Teachers who were once certified as “social studies” teachers must now take specific subject area GACE exams to be certified and to meet the mandates of No Child Left Behind (2001) in regard to “highly qualified” teachers (Georgia Department of Education, 2009). Georgia teachers holding certificates in business education (6-12) and marketing education (6-12) do not have to take the Economics GACE assessment in order to be certified to teach the Georgia High School Economics course (Georgia Professional Standards Commission, 2010). Beyond teacher

qualifications defined by No Child Left Behind (2001), the Georgia law also requires student achievement to be measured through an assessment tool to be discussed later.

### **Gender of the Economics Instructor Effect on Student Achievement**

The 2009 NCES Digest of Educational Statistics (National Center for Education Statistics, 2009) reported that in the United States 68% of teachers in the secondary subject matter “social studies” were male. In a 2009 survey of social studies teachers in American high schools by the Center for Survey Research and Analysis at The University of Connecticut, it was reported that 70% of the 300 economics teachers sampled were male.

In a study conducted by Dyan and Rouse (1997), the researchers surveyed students to analyze what they characterized as the role model effect. Female students currently enrolled in an introduction to economic course were asked several survey questions about their choice to take more economics courses and an analysis was performed based on instructor gender. This study was performed because the researchers were concerned with the limited numbers of women in the field of economics. The researchers did not find that females are more likely to take more economics courses if they are instructed by a female, as hypothesized by the researchers (Dyan & Rouse, 1997).

In a 1999 study performed by Robb and Robb, students were placed in classrooms with female instructors and male instructors to see if gender of the instructor played any difference on the achievement and the attitudes of the students toward economics. All variables were controlled to establish a comparable group of students as well as a comparable set of instructors. The only difference in the instructors was gender because their backgrounds (personal and academic) were highly similar as were other factors such as method of instruction, pacing of the course, and teaching materials which were exactly the same for a female classroom and a male

classroom. The study included 1,581 male students and 823 female students. After analysis of student grades as well as student and teacher surveys, interviews, and observations, no difference was found in the students based on whether they were instructed by a female or a male (Robb & Robb, 1999).

### **High-Stakes Testing**

High-stakes testing is the conceptual framework that will be utilized in this study. High-stakes testing guides most policy decisions made in schools today such as instructor placement and curriculum decisions. In order to understand the current use of high-stakes testing in high school economics, it is critical to review the historical uses of assessment in education.

#### **Overview of High-Stakes Testing**

Throughout modern American history, many efforts have been made to assess the quality of education in the states' public school systems. Many educators saw publication of the report, *A Nation at Risk*, as the spark that lit the fire of the modern standards and evaluation movement. After this expose on public education, state and local leaders set out to improve the education system through new policies such as increasing rigor in schools. These policies began the movement to create national goals and standards for education in order to address these words of *A Nation at Risk*: "The educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and a people" (National Commission on Excellence in Education, 1983, p. 5).

Even though *A Nation at Risk* was written in 1983, the federal government began to play a role in the evaluation or testing of students in public education as early as the late 1800s. Written exams for government-funded schools were introduced in Boston in 1845, and Harvard started the first entrance exams in 1851. However, the history of standardized testing does not

begin in the United States. Before Americans were using standardized testing, the earliest recorded use was in China in 2200 BC. The Chinese government used written exams to test candidates interested in Civil Service (which was a highly regarded occupation) in their memorization of received wisdom. Standardized testing was also used in Europe in the Middle Ages as entrance exams to universities. The Industrial Revolution ushered in a time where literacy became more important to all citizens, not just those attending universities. At this time, immigration rates were rising; and this created a need for standardization in education to ensure that all students had the same quality of education throughout the country (Black, 1998).

In 1929, E. F. Lindquist, at The University of Iowa, initiated the first statewide testing program using the Iowa Test of Basic skills. The tests soon were made available outside of the state of Iowa and added to this shift in testing away from sorting and selecting students back toward diagnosis and remediation (Office of Technology Assessment, 1992). Thus, two fundamental functions of measurement came from the beginning of educational testing. One function is sorting and selecting by comparing students with one another for purposes of placement or selection. The second is improving the quality of education. At times, these categories overlap when tests are used both to determine which students earn a high school diploma and to encourage better student effort to meet the standards in place (Darling-Hammond, 2004).

In the 1930s, planning began for the “Eight Year Study,” which was a research study to investigate the result of applying the principles of progressive education to the high school curriculum (Tyler, 1949). Dr. Ralph Tyler of The University of Chicago established a new “objectives-based framework” for testing and created guidelines for assessment and curriculum development and improvement. “Formative assessment” and “continuous improvement models”

created decades later claim to have their roots in Tyler's framework. As he later articulated in the *Best Principles of Curriculum and Instruction* (Tyler, 1949), Tyler stressed four principles: define appropriate objectives; establish useful learning experiences; organize learning experiences to have a maximum impact; and evaluate whether the objectives have been achieved, revising as necessary those aspects of learning that were not effective. The student assessments were to serve as a method to monitor student progress and guide instructional planning. They also afforded school-level accountability and were used in the evaluation of educational programs and policies. Information from the student assessments, combined with teacher observations and judgments, were used to develop comprehensive records of student performance that were to be used by colleges for admission purposes (Tyler, 1949).

From the 1950s through the 1970s, the principal focus of theory and application of educational testing was measurement-driven instruction, which was a model that showed strong foundations in Tyler's rationale (e.g. Bloom, Hastings, & Madaus, 1971). This educational testing model found its greatest application at the elementary school level, although curricula were designed along the same lines for learners of all ages, including adults. Material to be taught was analyzed into narrow and carefully sequenced learning objectives, each with a highly focused diagnostic test. These concise, frequent tests were used to direct instruction for individual learners; and passing a test was mandatory to proceed to the next section. Under this model, students worked independently, using textbook lessons covering learning objectives in an arranged sequence. Self-tests could be used to check progress and to help students determine when they were prepared to take the teacher-administered assessment (Tyler, 1949).

The 1950s brought a renewal of interest in task analysis and individualized learning management due to work by psychologists like B. F. Skinner who had shown that complex

patterns of animal behavior could be shaped through carefully scheduled reinforcements (Skinner, 1953). Skinner drew implications for human learning from his work with animals, proposing a model for teaching in which the material to be learned was presented in a series of small steps, with questions to check for understanding that provided instant feedback on accuracy of response.

In 1956, Dr. Benjamin Bloom and colleagues at The University of Chicago established their *Taxonomy of Educational Objectives, Handbook 1: Cognitive Domain* (Bloom, Englehart, Furst, Hill, & Krathwohl, 1956). They shared Tyler's belief that the design of curriculum and instruction must begin with clearly stated objectives. Bloom's taxonomy contributed considerably to the popularity of "measurement driven instructional approaches" by showing how test items could be created to measure "higher order thinking" (analysis, synthesis, and evaluation) as well as "lower order learning" outcomes like knowledge, comprehension, and application. The taxonomy gave teachers and curriculum developers a common language to talk about the different kinds of learning objectives (Bloom, 1968).

Along with Bloom's taxonomy, Robert Mager's (1962) *Preparing Instructional Objectives* helped popularize the idea of using tests for instructional pacing by showing teachers how to formulate narrow learning objectives and measurable terms. Using tests informed instructional decisions by using a qualitatively different kind of test that assisted in the "re-teaching" of key objectives that were not mastered on the assessment. This was achieved when, instead of interpreting students' scores with reference to the performance of a norm group as with breaking percentiles, the score of an individual student was compared with a fixed mastery criterion to determine whether that individual was ready to proceed. The kind of test designed to

show directly what an examinee was able to do, without reference to the performance of anyone else, was formalized by Glaser (1963) as “criterion referenced testing.”

In the 1960s and 1970s, various models and curricular materials were developed that relied on “criterion referenced testing” for individualized learning management. The best known system of this kind was Bloom's (1968) "Mastery Learning" model. Under “Mastery Learning,” the material to be taught was divided into series of units for the students to master sequentially; and mastery tests were created for each unit. End-of-unit tests indicated which students were ready to move on to the next learning unit and which were not. Those not yet demonstrating mastery were re-taught, ideally using approaches different from the initial instruction. The goal was to enable all students to attain mastery by assessing if each learner possessed all the prerequisite cognitive entry behaviors before embarking on a next unit of instruction. Pre-tests were introduced to measure student progress at the end of the unit when pre-test and post-test scores were compared (Bloom, 1968).

Glaser and Nitko (1971) drew a comparison between the field of teaching to the field of medicine. They stated that teachers are asked to make a "detailed diagnosis of the initial state of the learner" which they compared to "prescribing medication without first examining the symptoms" (p. 631-632). The great hope was that distinct kinds of instruction might eventually be offered that would be tailored to each individual student's own learning ability. This was the idea of “Aptitude Treatment Interaction” research set forth in Cronbach's (1957) paper, "The Two Disciplines of Scientific Psychology" and later summarized in Cronbach and Snow's (1977) *Aptitude and Instructional Methods*. Rather than mandating that all students have to be taught using a single mode of instruction and sorting them according to their degrees of success, “Aptitude Treatment Interaction” used instruction that was adapted to each student's needs,

enabling nearly all to obtain levels of success previously enjoyed by only a few. The aptitude measures required would go far beyond the one-dimensional rankings provided by IQ tests used for decades before. The hope was that a post-test would measure specific abilities that could be used to prescribe the optimum form of instruction for each learner. At the same time, it became clear that while the principles of task analysis might be suitable for beginning instruction in reading and mathematical computation, they do not work as well for intricate learning outcomes. Nonetheless, these principles are seen in more recent test-based reform initiatives, including performance assessments in standards-based reform (Glaser & Nitko, 1971).

Standardized testing took on another form when the federal government became more interested in overall school program evaluation. With the passage of the Elementary and Secondary Education Act (ESEA) of 1965, evaluation of public education programs greatly expanded. Under Title I of the ESEA, school districts received federal funds to provide extra support for children from low-income families. Extensive regulations were put in place to help assure that the money was being spent appropriately. At Senator Robert Kennedy's insistence, annual testing requirements were added for all children in Title I programs to determine whether the programs were meeting their objectives (Cross, 2003). The idea of the evaluation was not new, but the mid-1960s brought federally funded educational assessment of unprecedented size. This use of evaluation, in particular the use of objective test data, for program oversight was based on management practices pioneered in the military (Lagemann, 1997).

Supporters of compensatory education hoped that evaluations documenting program effectiveness would build support for social programs. Madaus, Stufflebeam, and Scriven (1983) observed the one problem with these evaluations was with the types of tests they employed. The standardized tests used at the time were designed to provide accurate individual measurements



and stable rankings of children of average ability. They measured a wide range of abilities developed over years of schooling. As general ability tests, they were not designed to measure short-term instructional effects and did not accurately reflect what was taught in the classroom. The biggest concerns in measuring Title I program effectiveness was that they were difficult for disadvantaged students and were not aligned with learning objects appropriate for Title I student populations (Madaus, Stufflebeam, & Scriven, 1983).

In the 1970s, the problem of high levels of youth unemployment received much attention; and inadequate academic skills were viewed as contributing to the problem (Resnick, 1980). The media and other reports from education reform panels created the popular perception that students have just been passed along from grade to grade, and a high school diploma no longer means much of anything (Office of Technology Assessment, 1992). In response to the cynicism of education reform policies that were focused on inputs such as improved resources, improved curriculum, and new teaching methods, policymakers transferred interest to interventions that focused on outcomes such as student achievement. During this time, policymakers and school system administrations began to pilot processes such as performance contracting including monetary incentives for teachers whose students reached benchmarks and with the accountability systems that tied state funding to school-level test scores; but these were short lived because of the limitations of funds (Cohen & Haney, 1980).

An approach popular in the 1970s was “minimum competency testing,” which formed the “Back to Basics” movement. A “minimum competency test” was a basic skills test, usually in reading and mathematics. Students were required to pass the test in order to receive a regular high school diploma. It is estimated the actual level of proficiency required was probably around the eighth-grade level. Some found this reform tended to be largely symbolic and, in turn, did not

value the results since the proficiency levels were lowered so that politically unacceptable numbers of students would not fail and was so diluted that few systematic changes in instruction and learning occurred (Ellwein & Glass, 1986). Nonetheless, a national study found that students who did not pass their tests on the first try more likely to drop out of school (Catterall, 1989). By 1980, statewide “minimum competency testing” requirements had been implemented in 29 states, most having been initiated in 1975 or later. In 1985, 33 states required students to take a minimum competency test; but only 11 made passing the test a requirement for the high school diploma. The popular concerns shifted from an emphasis on basic skills toward complex, higher-order thinking skills, and the “minimum competency test” movement faded (Office of Technology Assessment, 1992).

Outside testing development, events in the United States and across the globe also played a large role in the creation of the government-regulated accountability or testing movement as well as educational reform in general. In 1957, the launch of the Russian satellite Sputnik created a sense of panic in many Americans who questioned the education American students were receiving in public schools. As a result, the federal government responded with the Elementary and Secondary Education Act (ESEA) in 1965. This act required all schools that received federal money to prove they were accomplishing educational improvement goals. This act was part of a larger movement demanding accountability and the specified proof was standardized test results. The National Assessment of Education Progress or NAEP was established to assess educational progress for the entire country to assist with data collection for schools receiving money through ESEA. These assessments set benchmarks and assessment cut scores that were required by ESEA to demonstrate that funds were supporting student achievement. In the pilot years, NAEP

tested a sample of children ages 9, 13, and 17 and adults from 25-36 years old in writing, science, citizenship, career development, art, etc. (Ward & Murray-Ward, 1999).

In 1989, President George H. Bush and the nation's governors met at an "education summit" where national goals for education were adopted and that stressed outcomes over delivery. States pledged to issue information for an annual "report card" on the progress toward these goals (Finn, 1990, p. 591). In 1993, the National Education Standards and Improvement Council reported that "a national examination system provides a further mechanism for setting standards through specifications of examinations, syllabi, regulations, preparations for tests, grading of answers, and establishment of cutoff points" (p. 51). Through the standards-based education movement, researchers have established that content standards are critical but performance standards are as well.

The Georgia State Board of Education and the Georgia General Assembly have implemented testing requirements as prerequisites to earning a high school diploma since 1983. Prior to 1983, students earned a general high school diploma by completing a certain number of Carnegie units. No exit exam was required to establish minimum competency. The first method of establishing minimum competency through assessment was the Basic Skills Test (BST) and remained the method of choice until 1994. The BST required students to attain a minimum passing score in order to earn a high school diploma. The BST contained tests in language arts, mathematics, and writing. The Georgia High School Graduation Test (GHSGT) replaced the BST for students who entered the 9<sup>th</sup> grade beginning with the 1991 school year. THE GHSGT phased in tests in the five areas of language arts, mathematics, writing, social studies, and science (Georgia Code § 20-2-282; State Board Rule {SBR} 160-4-2-.30, Georgia Governor's Office of Student Achievement, 2004).

### **Student Achievement as Defined by No Child Left Behind Legislation**

On January 8, 2002, President George W. Bush signed into law the No Child Left Behind Act of 2001, making assessment and accountability the cornerstone of federal policies to promote educational opportunities for the disadvantaged and to reduce the achievement gap between disadvantaged students and their more advantaged peers. The statute says that all children can and will achieve high standards and requires that schools show regular progress toward this goal on state-developed and standards-based tests. Every child in grades three through eight and at the high school level must be tested annually in reading and mathematics, and all districts and schools must show adequate yearly progress to enable all their students to achieve proficiency in the standards by the year 2014. Those districts and schools that fail to meet annual, state-established proficiency targets for every numerically significant subgroup are subject to progressive corrective actions, which over five years can result in reconstitution and takeover of the school. Parents with students in schools that fail to meet their targets may request their children be transferred to another school and over time may enroll their children in private, supplementary services, all at the district's expense. With such sanctions, the law exerts an unprecedented degree of pressure upon districts and schools to improve the test performance; moreover, for most districts and schools, adequate yearly progress targets imply improvement trajectories that have rarely, if ever, been seen (Linn, 2003).

There is a straightforward logic to current accountability policy: the state establishes standards, sets goals, measures progress, and enforces expectations with sanctions. Educators and students are expected to focus teaching and learning on the standards and to use feedback from the tests to inform their efforts, to refine their educational program and strategies, and to improve student learning. The reality of assessment and accountability is not as simple. Complex

decisions must be made about what should be assessed, whose values are represented in the questions, what kind of test should be developed, and how various elements of this system are designed and analyzed. The No Child Left Behind legislation incorporates various testing policy mechanisms. It relies on testing to focus attention on learning outcomes; to galvanize a collective effort on the part of administrators, teachers, and students; to help parents become better informed about school quality; and to direct all allocation of educational resources, including within school allocations of time and effort, toward groups of students who have lagged behind. Companion federal initiatives rely on testing to identify and to promote effective instructional programs (Thorndike & Thorndike-Christ, 2010).

Before No Child Left Behind became law, most states had accountability systems in place by the mid-1980s. The Clinton administration required all states to create a plan to measure student achievement. As part of the plan, state leaders created goals and assessment systems. The premise of No Child Left Behind was to hold public schools accountable for eliminating achievement disparities between high-performing and low-performing students, especially between minority and non-minority students, taking Title I of the Elementary and Secondary Schools Act of 1965 to a new level (Suderman, Kim, & Orfield, 2005).

For the 2004-2005 school year, Georgia implemented a “single statewide accountability system” (SSAS) to meet NCLB accountability requirements (Georgia Governor’s Office of Student Achievement, 2004). The SSAS complies with federal and state educational laws governing student achievement and is overseen by the Governor’s Office of Student Achievement (OSA). According to the OSA, progress toward meeting AYP determinations is “based on a State Progress Index that reflects a school’s progress over the prior year on indicators identified by the Office of Student Achievement;” thus, credit is given to schools for

improving student achievement over time (Georgia Governor's Office of Student Achievement, 2004).

### **National Assessments in Economics Education**

Standardized multiple choice tests for precollege economics have been available since 1963, when the Test of Economic Understanding (TEU) for high school economics and social studies courses was published by the Psychological Corporation. The TEU was the first nationally validated economics test and was created especially for use in high schools (Lewis & Orvis, 1971). The Test of Economic Understanding was replaced with the Test of Economic Literacy developed by Dr. John Soper and Dr. William Walstad in 1979. The development of the Test of Economic Literacy (TEL) (Soper & Walstad, 1988) provided a new instrument for assessing the impact of economics courses taken by teachers on the learning of their 11<sup>th</sup> and 12<sup>th</sup> grade students. Soper and Walstad (1988) tested the effects of teacher training in economics on student performance on the TEL. They found a positive and significant impact of teacher course work on the performance of students on the TEL. These tests were an important barometer of achievement in high school economics classes. The National Assessment of Educational Progress (NAEP) includes an economics assessment for 12<sup>th</sup> grade students and was last conducted in 2006 with the next assessment scheduled for 2012 (Buckles & Walstad, 2008). Despite the successes of existing multiple-choice instruments, there is a growing awareness of the shortcomings of tests that rely exclusively on multiple-choice questions, particularly in assessing students' complex thinking skills (Harris & Kerby, 1997).

### **High-Stakes Graduation Tests**

In the state of Georgia, the Governor's Office of Student Achievement oversees the assessment system of the Georgia Department of Education as well as the other education

institutions in Georgia. For high school students, Georgia requires High School Graduation Tests as well as End-of-Course Tests to measure student achievement and determine if students have mastered the content of the standards they learned in the classroom. In addition to standardized exit exams, many school systems have also incorporated senior projects, service learning projects, or portfolios as a means of exit examination in high school and a more robust high school experience.

According to Warren and Grodsky (2009), a generation ago high school students earned their diplomas simply by showing up for class, keeping up with their grades, and staying out of trouble. Starting in the late 1970s, many states began to require students to take “exit exams” in order to graduate. These exams were typically over basic skills. In 2009, it is estimated by the researchers that two out of three high school students in America have to pass an exit exam in order to receive their diploma (Warren & Grodsky, 2009). Advocates of exit exam use cite students “simply getting credit for seat time” as a problem as previously many students were graduating without mathematic skills and literacy skills (Warren & Grodsky, 2009, p. 646). Critics challenge that such exam policies are “unfair” to students who have mastered the classroom curriculum yet do not “test well” or have limited English proficiency or other inequalities. Critics also stated that teachers become more likely to “teach to the test” instead of assisting students with their mastery of classroom instruction through differentiation (Warren & Grodsky, 2009, p. 646).

Warren and Grodsky (2009) found that state exit exams reduce high school graduation rates particularly in states with higher competency exit exams. Nationally, for each percentage point the graduation rates goes down, about 35,000 fewer students leave high school with a diploma (Warren & Grodsky, 2009). According to the National Center for Education Statistics

(2009), 26 states required high school exit exams in the 2008-2009 school year. Leading the charge, Florida adopted exit exams in 1979. In the first year of implementation, the test was challenged in court (*Debra P v. Turlington*) where students claimed the exit exams were “racially biased” and were “imposed without adequate notice” (Warren & Grodsky, 2009, p. 648). The plaintiffs won, and Florida had to delay the beginning of the exit exams until the 1982-83 school year; and the state also had to demonstrate instructional validity of the test. Florida had to revise and assess the scoring structure of the test after students repeatedly failed and were retained or dropped out. Most states met the same challenges as Florida when they began to set standards and created exit exams to hold students to these standards (Warren & Grodsky, 2009).

Georgia began using the “Georgia High School Graduation Test” in 2004 (Georgia Department of Education, 2009). All students seeking a Georgia high school diploma must pass the Georgia High School Graduation Tests (GHS GT) in four content areas (English Language Arts, Mathematics, Science, and Social Studies) in the spring of the eleventh grade as well as the Georgia High School Writing Assessment. According to the Georgia Department of Education (2009):

Students with disabilities and English Language Learners may receive appropriate standard accommodations based on their needs and the specifications of their Individualized Education Program, their Individual Accommodation Plan, or their ELL Testing Participation Committee Plan which addresses the issues brought forth by Florida’s litigation. The policy goes on to state, “Students who do not pass all the required tests but have met all other graduation requirements may be eligible for a Certificate of Performance or a Special Education Diploma. Students who have left school with a Certificate of Performance or a Special Education Certificate may return to



attempt the graduation test(s) again, as often as necessary to qualify for a high school diploma” (Georgia Department of Education, 2009).

### **Georgia End-of-Course Test in Economics**

For accountability measures, the State Board of Education is required by Georgia law (A+ Education Reform Act of 2000, O.C.G.A §20-2-281) to adopt End-of-Course Tests (EOCT) designed to measure student achievement in core subjects in grade levels nine through twelve. At this time, both the GHSGT and EOCT are being utilized until the EOCT replaces the GHSGT; and it will be discontinued on a schedule devised by the state board (Georgia Code § 20-2-281). The EOCT requires students to take cumulative exams in the eight areas of ninth grade Literature and Composition, American Literature and Composition, Algebra I, Geometry, Biology, Physical Science, Economics, and United States History. The End-of-Course Test (EOCT) in all content areas has two sections and contains 90 multiple choice questions. Each test is created based on the state-approved performance standards for classroom instruction (Georgia Department of Education, 2009). Due to the presence of uncontrollable variables, many things could possibly influence student performance on the EOCT or the GHSGT. These variables could be students’ ability, technology, demographics, motivation, testing environment, and teacher knowledge or gender. There is also no pre-test and post-test situation to judge for students’ growth in the subject matter.

The main difference between the GHSGT and the EOCT is that the EOCT is not the sole factor in determining if a student will graduate from high school. For example, the Economic/Business/Free Enterprise End-of-Course Test also represents 15% of a student’s course grade in the Economics course. This leaves 85% of each student’s grade to be determined by their coursework (Georgia Department of Education, 2010). The 85% of the student’s grade

being determined by coursework is a comfort to most students and teachers because as stated by an Educational Testing Service (ETS) staff member, multiple choice tests “tend to leave out many important abilities (of students) untested and untaught” (Harris & Kerby, 1997, p. 123).

In summary, high-stakes testing drives many staffing decisions made at the local level. With quality controls in place through federal legislation, high-stakes testing is the only data-driven standard by which student achievement can be assessed and teacher quality can be compared. Many local system administrators base their teacher placement decisions for the economics course on previous student achievement scores because of the high-stakes nature of End-of-Course Testing. With the recent addition of business education and marketing education as certification areas that may teach the economics course in Georgia, support for local systems through teacher workshops on the content standards and assessment as well as providing research analyzing the high-stakes scores of students will be critical to closing the achievement gap for student achievement in economics.

## CHAPTER 3

### METHOD

In 1990, Lynch found the only situation in which students had statistically significant gains in learning was when they were taking their economics course from a well-trained instructor who had content knowledge through coursework or extensive professional development. Bosshardt and Watts (1990) reported that teacher training in economics and the “quality of students” are important factors in student achievement in economics courses (p. 274). With decreases in state and local budgets, professional development opportunities for teachers will decline, causing broad field teachers without coursework in economics to continue to lack economic knowledge (Watts, 2006). The “quality of students” referred to in the Bosshardt and Watts (1990) article is out of the control of state and local public school systems as the charge of these school systems is to educate the masses. Thus, one of the only factors school systems can manipulate is the teacher of the economics course. By assigning teachers with content knowledge in economics to instruct the course, school systems have the potential to increase student achievement scores (Becker, Greene, & Rosen, 1990).

#### **Statement of Purpose**

The purpose of this causal-comparative study was to compare Georgia High School Economics/Business/Free Enterprise End-of-Course Test scores for students in classes taught by an instructor with a business education background to the scores for students in classes taught by an instructor with a social studies background. For this study, business education teachers and

social studies teachers will serve as independent variables as well as teacher gender and highest degree held. A Georgia business education instructor is defined as a person currently educating students in a Georgia public high school who is certified in business education according to the Georgia Professional Standards Commission guidelines. Business Education and Marketing Education certified teachers are considered to be highly qualified to teach economics without taking the GACE exam in Economics due to coursework and the questions about economics on the Business Education and Marketing Education GACE exams. A teacher with social studies background is defined as a teacher in a Georgia public high school who completed a traditional social studies degree program and is now certified in different fields within social studies to meet the requirements of highly qualified status for No Child Left Behind including Economics (NCLB, 2002).

Additional independent variables analyzed in this study included teacher gender and teacher certification level which indicates the highest degree earned by each educator. Teacher certification levels in the State of Georgia that will be analyzed in this study are T-4, T-5, T-6, and T-7. The T-4 certification level is the level for teachers who have a bachelor's degree in Education and have passed the GACE. The T-4 is also for teachers who are hold a bachelor's degree in a content area, have passed the GACE, and have successfully completed the requirements for initial certification. The T-5 certification level is for a teacher holding a master's degree. The T-6 is the certification level for a teacher holding a Specialist or "6 year" degree. The T-7 certification level is for teachers holding an EdD or PhD in Education (Georgia Professional Standards Commission, 2010).

For this study, the dependent variable was the student achievement scores on the Georgia End-of-Course Test in Economics/Business/Free Enterprise. The Georgia End-of-Course Test

(EOCT) is defined as the high-stakes test mandated by the Georgia Department of Education and the Georgia State Legislature to satisfy No Child Left Behind requirements to measure student achievement in the high school course of Economics (Georgia Department of Education, 2009).

### **Research Questions**

For this study, answers to the following questions were sought:

1. What are student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with a Business Education certification and students taught by teachers with a Social Studies certification?
2. Is there a statistically significant difference between student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with a Business Education certification and students taught by teachers with a Social Studies certification?
3. Is there a statistically significant difference between student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with a Business Education certification and students taught by teachers with a Social Studies certification based on teacher gender?
4. Is there a statistically significant difference between student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with a Business Education certification and students taught by teachers with a Social Studies certification based on teacher certification level (measured by the Georgia Professional Standards Commission as the highest degree earned)?

## Design

This study used a casual-comparative research design. A casual-comparative design is a type of non-experimental investigation in which researchers seek to identify cause-and-effect relationships in groups of individuals in whom the independent variable is present or absent and then determining whether the groups differ on the dependent variable. The critical feature of casual-comparative research is a lack of control over the delivery of an independent variable since it has already occurred, and the researcher is only observing relationships or results. This design is considered *ex post facto* or *after the fact* research since there is no experimental treatment or manipulation of variables. Generally this design involves the use of pre-existing groups to explore differences (Gall, Gall, & Borg, 2007).

A general advantage of causal-comparative design rests in the process of forming groups to measure the independent variable because this is often more consistent with how practitioners and other educational stakeholders think about the world. Naturally, this increases the external validity of this design as opposed to other methods. Statistical results from casual-comparative analysis are typically easier to comprehend and interpret due to the researcher computing descriptive statistics such as group mean and standard deviation for the groups in the study and then testing for statistical significance utilizing analysis of variance (Gall et al., 2007).

The primary disadvantage of causal-comparative design is the limited internal validity. This research design does not permit strong conclusions about cause-and-effect relationships because the independent variable is not being manipulated. The researcher cannot make inferences about causality because there is no random assignment (Schenker & Rumrill, 2004). Potential threats to internal validity or control in this study are the lack of random assignment of independent variable and dependent variables, as well as the lack of control for outside effects

such as school location (rural, urban, suburban, etc.), testing administration procedures, socioeconomic levels of students, intellectual level of the students, student's parental support, student's prior knowledge of the content, and student's motivation and self-efficacy while taking the Georgia High School End-of-Course Test.

Every student in a Georgia public high school must take and pass an Economics course in order to graduate; however, the EOCT represents only 15% of the student's grade and does not account for the other 85%. Hence, a student failing the EOCT could still pass the Economics course and graduate from a Georgia public high school. This creates issues regarding control. Due to the nature of local school control, individual schools ultimately decide who will instruct the course; and students are assigned to teachers, courses, and sections of the course based on other courses and scheduling mechanisms. The exact process or method by which a teacher is selected to instruct the economics course also varies; usually, the method is either: (a) teacher direct assignment to the course by the principal or assistant principal over curriculum (or department chair), (b) teacher request to be assigned to the course, or (c) departmental lottery where teachers are randomly assigned to the courses they will be teaching. Causal-comparative design yielded statistical results to establish if there is a statistically significant interaction between teacher background and student achievement. The casual-comparative design also was useful for exploratory investigation regarding the impact gender and highest degree held by the teacher has on student achievement. Data provided through this analysis could assist school systems with staffing solutions.

### **Participants**

The population involved in this study was teachers of the high school Economics course (Course Number 45.06100) taught in Georgia. The Georgia Professional Standards Commission

has approved teachers with Business Education certification, Marketing Education certification, and Economics certification to teach the high school economics course. While the samples for this study consisted of teachers who are certified and teach in either business education or in social studies education programs, Georgia also has “dual certified” teachers in both content areas. Teachers who are “dual certified” or have certification in both content areas will not be included in the study. Teachers were identified utilizing the database provided by the Georgia Department of Education and the Georgia Professional Standards Commission. According to the Georgia Professional Standards Commission (2010), there are 3027 teachers holding Business Education certification and 6098 teachers holding Economics certification.

The method of sampling used was stratified random sampling. A stratified random sample is a group of research participants formed by identifying subgroups with certain characteristics in the population and then drawing a random sample of individuals from each subgroup (Gall et al., 2007). In order to utilize this method of sampling for this study, participants were placed into groups formed by certain characteristics in the population. The groups for this study were based on teacher program, either business education or social studies education. There were 714 eligible social studies teachers in the population and 41 eligible business education teachers. As the population was stratified and then sampled, the study sought to secure the same number of business education teachers as social studies teachers in each sample. The number of business education teachers who teach and have had students who have tested in economics is lower than that of social studies teachers because of the recent certification rule change. In the spring 2010 testing administration, 41 business education teachers’ average student assessment scores were reported to the Georgia Department of Education (Georgia Department of Education, 2010). Thus, 41 social studies teachers’ student



achievement scores were selected as the random sample. The social studies population was presented in alphabetical order by the data provider. A random number generator was used to identify the participant be extracted from the database and utilized as the random sample for the social studies as defined as Economics certified teachers.

The advantage of stratified random sampling is it enables the researcher to divide the population into distinct independent strata which allows for extrapolation of data concerning specific subgroups that may be lost in a more generalized random sample (Gay, 1996). This method also focuses on the important subpopulations of the study and research questions. Different sampling approaches can be applied to the different strata which enables the researcher to use the most suitable method. Overall this improves accuracy of estimation. This method was applicable to this study because the variables upon which the population was stratified – teacher certification (Siegfried & Meszaros, 1998), gender (Dyan & Rouse, 1997; Robb & Robb, 1999), and highest degree held (Allgood & Walstad, 1999) – related to the research questions.

### **Data Set Source**

The data set source for this study was the student scores on the Economics/Business/Free Enterprise End-of-Course Test for the Georgia high school Economics course. The scale for the EOCT is as follows: scale score below 400 (grade conversion below 70) – does not meet, scale score 400-449 (grade conversion 70 to 89) – meets expectations, and scale score 450 or above (grade conversion 90 or above) – exceeds expectations. For the spring 2009 administration of the EOCT, 49,179 students were tested with a mean score of 422.11 (grade conversion score of 79) and a standard deviation of 44.39. The percentages of students in each performance level are: below expectations equaled 31.7%, meets expectations equaled 40.4%, and exceeds expectations equaled 27.8% students (Georgia Department of Education, 2009).

The assessment date is selected by each county based on the Georgia Department of Education's Assessment Calendar for the EOTC. The calendar states the allowable dates from a starting date to an ending date for when the test may be administered to the students before the scores are required to be submitted to the Georgia Department of Education. There are strict administration guidelines for the test; and each school has a testing coordinator who trains the proctors, organizes distribution and collection of the testing materials, and submits the scores either to the county office or directly to the Georgia Department of Education depending on the size of the school system. Guidelines are established by the Georgia Department of Education Assessment Division and provided for view the Georgia Department of Education website (Georgia Department of Education, 2010). All test administrators are trained and all training materials are also available on the Georgia Department of Education website (Georgia Department of Education, 2010). These administrators also are trained to adhere to the guidelines for accommodations for Special Needs students as well as English Language Learners (Georgia Department of Education, 2009).

Reliability is the consistency of the results obtained from a measurement. When a score is reported for a student, there is an expectation that if the student had instead taken a different but equivalent version of the test, a similar score would have been achieved. A test that does not meet this expectation has little or no value. Validation is the process of collecting evidence to support inferences from assessment results (Creswell, 1994).

For the Georgia High School Economics/Business/Free Enterprise End-of-Course Test appropriate measures were taken by Pearson, the test producers, to establish reliability. The internal consistency alpha values are in the range of 0.8 – 0.9 for the spring 2009 administration (Georgia Department of Education, 2009). These scores are in the acceptable range by industry

standards for a criterion-referenced test like the EOCT (Pearson, 2008). The standard error of measurement (SEM) expresses score inconsistency (or unreliability) in terms of the reported score metric. The SEM is an estimate of how much error there is likely to be in an individual's observed score or how much score variation would be expected if examinees were tested multiple times with equivalent forms of the test (Pearson, 2008). The standard error of measurement for the spring 2009 Form 1 equals 3.64 and Form 2 equals 3.56 (Georgia Department of Education, 2009). The SEM for a particular true score is defined as the standard deviation of the observed scores of the students with that of the true score (Georgia Department of Education, 2009). This standard deviation is called the conditional standard error of measurement (CSEM). The CSEM for the spring 2009 Form 1 and Form 2 equals 18.30 with the minimum equaling 12 and the maximum equaling 84 (Georgia Department of Education, 2009). The EOCT has classifications of "Does Not Meet," "Meets," and "Exceeds;" and these ranges are based on cut scores. This index is calculated by comparing the expected number of scores that fall into each category with the actual number of scores in each category (Pearson, 2008).

For the Economics End-of-Course Test, appropriate measures were taken by the test producers to establish validity (Georgia Department of Education, 2009). Since validity is the process of collecting evidence to support inferences from the assessment results, the prime consideration in validating an assessment like the EOCT is determining if the test measures what it is said to measure. During the process of evaluating if the test measures the construct of interest; a number of possible threats to validity must be considered (Georgia Department of Education, 2009). For example, one must determine if the test is biased toward certain cultural groups or students who might not be motivated to complete the test. It is equally important to establish that the interpretations made by the users of the test's results are limited to those that

can be legitimately supported by the test. Content/curricular validity is established through committees of educators who have collaborated with item development experts, assessment experts, and GaDOE staff annually to review new and field-tested items (Georgia Department of Education, 2009). Item-standard match is established based on the content standards and the percentages of each area to be tested. The term construct validity refers to the degree to which the test score is a measure of the psychological characteristics of interest. Rasch fit statistics (one-dimensional IRT model) are used in this process to provide evidence of construct validity. Statistics show that the items fit the measurement model and the assumptions were held up, establishing construct validity (Pearson, 2008).

### **Data Collection**

As this study is causal-comparative and after the fact, the data has been collected by the Georgia Department of Education and reported to the schools and the general public. The researcher used the database from the spring 2010 administration of the EOCT. The database with school system and individual high school scores is available to the public through the Georgia Department of Education website (Georgia Department of Education, 2010). Additional data required for this study were teacher certification area and highest degree held. This data is compiled and posted by the Georgia Professional Standards Commission for public view on their website through the CAPS web link. This study also utilized student scores on Economics EOCT per teacher available through the Georgia Department of Education and the Governor's Office of Student Achievement which are available by request to either office.

### **Data Analysis**

This study was causal-comparative and sought to identify a possible cause-effect relationship between teacher background and student achievement scores. Students are tested

after taking the economics course which served as the treatment in this study. Causal-comparative studies typically involve two groups for each independent variable (Huck, 2008). The study was designed to compare the EOCT scores for the spring 2010 testing administration of students taught by a business educator and students taught by a social science educator (see Table 2). Dual certified teachers (teachers who have certification in business education and in Economics Education) were not included in the study as they fall into both categories of teacher background. Teachers who no longer have a registered certificate with the Georgia Professional Standards Commission were not included in the study. Teacher gender and teacher certification level also were analyzed in this study. Teachers in this study could not be randomly assigned or manipulated because they were already in groups due to their background and certification.

The first step in most causal-comparative studies is to utilize exploratory data analysis to establish descriptive statistics for each comparison group in the study. Next, a test of statistical significance will engage these descriptive statistics further to establish if there is something that can be compared or related (Gall et al., 2007). Based on the information provided in the statistical test, the study established if statistically significant differences existed between the groups. The advantages of this analysis are that descriptive statistics allow for organizing, summarizing, and displaying a set of numerical data such as the means of the classes, mean of the students taught by each type of educator, and mean of the students taught by teachers based on highest degree held. Two disadvantages of this type of statistical analysis are that causal-comparative does not take other factors into account (such as student motivation) and causal-comparative does not provide true experimental data (Gay, 1996).

The statistical test used was Analysis of Variance or ANOVA. ANOVA is a statistical procedure that compares the amount of between-groups variation in individuals' scores with the

amount of within groups variation. When there is a high ratio of between-group variance to within groups variance, this indicates there is more difference between the groups and their scores than there is within each group. If the results of the ANOVA show that there is a statistically significant difference, effect size is calculated to identify how large of an effect exists. If the results of the ANOVA do not show there is a statistically significant difference, ad hoc testing are performed. Ad hoc testing involves pairwise comparisons of means and then rank order the means for comparison in order to set up statistical hypotheses for each pairwise comparison to establish an observed  $q$  value similar to the  $t$  test and  $z$  scores (Gall et al., 2007).

For this study, one One-Way ANOVA test and two Two-Way ANOVA tests were performed to detect statistical significance. The One-Way ANOVA was performed to measure the effects of one factor, teacher certification area which in this study was either business education or social studies, on student achievement scores on the Economics/Business/Free Enterprise EOCT. Due to historical implications of teacher gender in business education as well as teacher gender in social studies stated in the literature, the question of gender of the teacher is necessary to see if there is a statistical significance. Historically, more females teach business education than males; and more males teach social studies than females (National Center for Education Statistics, 2009). For the question of student achievement related to teacher experience with the Economics course, it was vital to test for statistical significance of the teacher's practice, knowledge, and familiarity with the course as defined by highest degree earned and presented as teacher certification level. In this study, post-hoc tests were calculated for the teacher certification level as it had more than two groups for the independent variable (Pallant, 2007). The post-hoc test that was utilized in this study was the Bonferroni post-hoc test.

Table 2

*Data Analysis*

Objectives/Questions	Independent Variable	Dependent Variable	Statistics
1. What are student achievement scores on the Georgia High School Economics/Business/Free Enterprise EOCT for students taught by teachers with Business Education certification and students taught by teachers with a Social Studies certification?	Teacher certification 1 = Business Education 2 = Social Studies	EOCT scores	Descriptive  Mean, Standard Deviation, Minimum, Maximum, Mode, Median
2. Is there a statistically significant difference between student achievement scores on the Georgia High School Economics/Business/Free Enterprise EOCT for students taught by teachers with Business Education certification and students taught by teachers with Social Studies certification?	Teacher certification 1 = Business Education 2 = Social Studies	EOCT scores	One-way ANOVA  Effect Size
3. Is there a statistically significant difference between student achievement scores on the Georgia High School Economics/Business/Free Enterprise EOCT for students taught by teachers with Business Education certification and students taught by teachers with Social Studies certification based on teacher gender?	Teacher gender 1 = males 2 = females  Teacher certification 1 = Business Education 2 = Social Studies	EOCT scores	Two-way ANOVA  Effect Size

(continued)

Objectives/Questions	Independent Variable	Dependent Variable	Statistics
4. Is there a statistically significant difference between student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with Business Education certification and students taught by teachers with social studies certification based on teacher certification level?	Teacher's highest degree held per certificate level 4 = Bachelors degree (T4) 5 = Masters degree (T5) 6 = Education Specialist or higher degree (T6 & T7)  Teacher certification 1 = Business Education 2 = Social Studies	EOCT scores	Two-way ANOVA  Effect Size

The alpha level is the probability that a Type I error (the probability of rejecting the null hypothesis when in fact the null is true) might exist. Type II error is the probably of failing to reject the null hypothesis when in fact the null is false (Gay, 1996). This study used an alpha level of .05 as an alpha of .05 is a good compromise between the likelihood of making both types of error. The advantage of Two-Way ANOVA is that the research tests subgroups that differ on more than one factor. The disadvantage is there might be a difference between the groups on a particular variable that can be explained by another difference other than the one being studied. The effect size is the measure of the strength of the relationship between the variables in the population and is used to assume a relationship and that the relationship is not due to chance (Gay, 1996). For this study, Cohen's *d* was used to establish the effect size as it is the difference between the two means divided by the standard deviation (Gall et al., 2007). To answer the question of student achievement related to teacher's highest degree held, testing for statistical significance of the teacher's practice, knowledge, and familiarity with the course was required.



## CHAPTER 4

### RESULTS

This chapter details results from the statistical analyses used in the study. Results for each of the research questions are presented. The data addresses each independent variable in the research questions. A summary of descriptive statistics for each teacher certification sample, Business Education certification and Economics certification, utilized in this study is presented in this chapter. Additional information for the other independent variables, teacher gender and teacher certification level, are also provided in this chapter.

#### **Purpose of Study**

The purpose of this causal-comparative study was to compare Georgia High School End-of-Course Test (EOCT) in Economics/Business/Free Enterprise scores for students in classes taught by an instructor with a business education background to the scores for students in classes taught by an instructor with a social studies background. For this study, business education teachers and social studies teachers were the independent variables. Additional independent variables that were analyzed in this study included teacher gender and teacher certification level. For this study, the dependent variable was the student achievement scores on the Georgia End-of-Course Test (EOCT) in Economics/Business/Free Enterprise. The EOCT in Economics/Business/Free Enterprise is defined as the high-stakes test mandated by the Georgia Department of Education and the Georgia State Legislature to satisfy NCLB requirements to measure student achievement in Economics (Georgia Department of Education, 2009).

### **Research Questions**

For this study, answers to the following questions were sought:

1. What are student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with Business Education certification and students taught by teachers with Social Studies certification?
  
2. Is there a statistically significant difference between student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with Business Education certification and students taught by teachers with Social Studies certification?
  
3. Is there a statistically significant difference between student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with Business Education certification and students taught by teachers with Social Studies certification based on teacher gender?
  
4. Is there a statistically significant difference between student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with Business Education certification and students taught by teachers with Social Studies certification based on teacher certification level (measured by the Georgia Professional Standards Commission as the highest degree earned)?

### **Analysis of Research Questions**

The spring 2010 data set was comprised of the Georgia High School Economics/Business/Free Enterprise EOCT scores for 755 teachers with 714 scores for Economics certified teachers (also known as social studies teachers) and 41 scores for Business

Education certified teachers. Of the 714 economics teachers, 41 teachers were randomly selected from the economics teacher population who tested in spring of 2010 in order to create a sample that was equal to the entire population of business education teachers who tested in spring of 2010. The 41 economics teachers were selected using a random number generator. Teacher duplications were removed from the data set and their highest EOCT score was utilized in the analysis. Teacher names that were not inputted correctly by the school system and thus were not in the Georgia Professional Standards Commission CAPS program were removed from the data set. Any instructor who had less than 10 students participate in the exam was not analyzed as no data was reported to the Georgia Department of Education for teachers testing less than 10 students (Georgia Department of Education, 2010).

Descriptive statistics (see Table 3 & Table 4) were performed to analyze the differences for mean student achievement scores on the Georgia High School Economics/Business/Free Enterprise EOCT based on teacher certification area (Business Education or Social Studies). Variable interactions were also analyzed in this study using analysis of variance (ANOVA). The interaction between teacher certification area and teacher gender as well as the interaction between teacher certification area and teacher certification level (highest degree earned) were analyzed. The alpha level was set at .05 for all statistical tests. The summaries of descriptive statistics, the One-way ANOVA test for statistical significance, and the Two-way ANOVA of interactions between (a) teacher certification area and teacher gender, and (b) teacher certification area and teacher certification level (as defined by highest degree earned with 3 groups, Bachelors degree = T4, Masters degree = T5, and Educational Specialist or higher = T6 and T7) were performed using SPSS software. The test for homogeneity as well as post-hoc tests were also performed using SPSS software.

### Research Question 1

What are student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with a Business Education certification and students taught by teachers with a Social Studies certification? Mean scores for students enrolled in an economics course taught by a business education teacher were 82.8 as compared with a mean score of 78.59 for students enrolled in an economics course taught by a social studies teacher.

Table 3

#### *Descriptive Statistics for Sample of Economics EOCT Scores*

	Certification Area	
	Business Education	Economics
N	41	41
Mean	82.80	78.59
SD	8.911	9.806
Maximum	92	94
Minimum	62	56
Median	84	79
Mode	90	91

Little more than half the business education teachers in this study were female, while a majority of the social studies teachers were male. Refer to Table 4.

Table 4

#### *Variable Counts for Sample of Economics Teachers' EOCT Scores*

Gender	Certification Area	
	Business Education	Economics
Females	23	9
Males	18	32

(continued)

	Certification Area	
	Business Education	Economics
Ethnicity		
Asian	0	0
Black	2	2
Hispanic	1	0
White	38	39
Certification Level		
BT4	0	0
T4	5	11
T5	17	22
T6	17	7
T7	2	1

**Business education descriptive statistics.** The Georgia Professional Standards Commission (2010) reports that 3,027 teachers hold Business Education certification; however, only 41 business teachers teach economics. There were 23 females and 18 males in the business education sample. Of the 41 teachers in the sample, 2 teachers were African Americans, 1 teacher was Hispanic, and 38 teachers were white (see Table 4).

In the business education sample of the data set, 27 county and/or local school systems were represented: Ben Hill County, Bibb County, Brantley County, Bullock County, Catoosa County, Cherokee County, Chickamauga City Schools, Cobb County, Coweta County, Dawson County, Dodge County, Fayette County, Forsyth County, Gwinnett County, Hall County, Harris County, Henry County, Jackson County, Laurens County, Liberty County, Lowndes County, Mitchell County, Muscogee County, Richmond County, Wayne County, and White County. Of these 27 represented, geographically, 13 are considered North Georgia, 6 are considered Middle Georgia, and 8 are considered South Georgia. Six of the school systems had more than one business education certified teacher's test scores represented in the spring 2010 data set: Cobb

County (8 teachers), Gwinnett County (3 teachers), Fayette County (3 teachers), Ben Hill County (2 teachers), Coweta County (2 teachers), and White County (2 teachers).

The highest score for students who were taught by a teacher holding business education certification was 92% and the lowest score was 62% (see Table 5). Of the 41 business education certified teachers with scores reported, 5 teachers had an average of 92%, 3 teachers had an average of 91%, and 7 teachers had an average of 90%, which was the mode of the business education sample. Thus, 36% of the business education certified teachers had a class average of a letter grade of “A” with 90% or higher. Of the 41 business education certified teachers with scores reported, 5 teachers had an average less than 70%, providing a 12% test failure rate (based on the class’ average score) for students taught by business educators. All of the 92% class averages were for teachers holding higher than a bachelor’s degree with 1 teacher holding a level 7 certification, 2 teachers holding level 6 certification, and 1 teacher holding a level 5 certification. For the 5 teachers in the sample holding a level 4 Business Education certification, the average was 80%. For these 5 teachers holding a level 4 Business Education certification, the highest average score was 90% and the lowest average score was 65%.

**Social studies descriptive statistics.** While 6,098 teachers are certified in the field of “economics” for grades 7-12 in the State of Georgia, only 714 of those teachers tested in spring of 2010 and had complete information in the data set. For the economics certified teacher population, 446 of the 714 were male and 381 of the 446 were white males, equaling 53% of the entire population of economics teachers from spring 2010. For this study, there were 9 females and 32 males in the sample. Of the 41 economics teachers in the sample, 2 teachers were African American and 39 teachers were white (see Table 4). All counties and city school systems were represented in the population.

The highest score for students who were taught by a teacher holding economics certification was a 94% and the lowest score was a 56% (see Table 5). Of the 41 economics certified teachers with scores reported, 8 teachers had an average of 90% or above. Thus, 19.5% of the economics certified teachers had a class average of a letter grade of “A” with 90% or higher. Of the 41 economics certified teachers in the sample, 8 teachers had an average less than 70% providing a 19.5% test failure rate (based on the class’ average score) for students taught by economics teachers in the sample. Of the 8 teachers with 90% or above class averages, 1 teacher held a level 6 certification, 6 teachers held level 5 certification, and 1 teacher held a level 4 certification. For the 11 teachers in the sample holding level 4 certification, the average was 76.64%. For these 11 teachers holding a level 4 economics certification, the highest average score was 90% and the lowest average score was 59%. The 1 economics teacher who held the level 7 certification, indicating that they held a doctorate degree, had an average of 78%.

Table 5

*Descriptive Statistics for Economics EOCT Scores by Teacher Certification Area*

	Business Education			Economics		
	X	sd	N	X	Sd	N
Total Sample	82.80	8.911	41	78.59	9.806	41
Gender						
Females	79.52	10.04	23	79.56	9.14	9
Males	87.00	4.81	18	78.31	10.11	32
Certification Level						
T4	79.60	9.40	5	76.64	11.03	11
T5	85.76	8.59	17	79.73	10.19	22
T6	80.29	8.84	17	78.14	7.95	7
T7	87.00	8.91	2	78.00	0	1

## Research Question 2

Is there a statistically significant difference between student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with a Business Education certification and students taught by teachers with a Social Studies certification?

Utilizing SPSS software to perform One-Way ANOVA for statistical analysis, the following findings were generated at the  $\alpha = .05$  level,  $F(1, 82) = 4.158$ ,  $p = .049$  (see Table 6). There was a statistically significant difference based on teacher certification area,. The effect size was calculated using Cohen's  $d$ . Cohen's  $d = .45$  and effect size  $r = .22$ . Cohen (1988) defined effect sizes as "small,  $d = .2$ ," "medium,  $d = .5$ ," and "large,  $d = .8$ ", stating that "there is a certain risk inherent in offering conventional operational definitions for those terms for use in power analysis in as diverse a field of inquiry as behavioral science" (p. 25). Thus, this study had a medium effect as Cohen's  $d$  was rounded to  $d=.5$ . Partial eta squared = .049.

Table 6

*Economics EOCT Scores by Certification Area – One-Way ANOVA Results*

	Sum of Squares	df	Mean Square	F	Partial Eta Squared
Between Groups	364.99	1	364.99	4.158	.049
Within Groups	7022.39	80	87.78		
Total	7387.38	82			

\* $p < .0$



### Research Question 3

Is there a statistically significant difference between student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with a Business Education certification and students taught by teachers with a Social Studies certification based on teacher gender?

Utilizing SPSS software to perform Two-Way ANOVA for statistical analysis, the following findings were generated at the  $\alpha = .05$  level. There was no significant difference found for the interaction of teacher certification and gender,  $F(1,82) = 3.812, p = .054$ . Teacher gender (see Table 7) was analyzed in this study and as research shows the majority of teachers in the social studies area are male and the majority of the teachers in the business education area are female (National Center for Education Statistics, 2009).

Descriptive statistics for male business education teachers show a 7.48 point difference in the mean scores over students taught by a business education teacher who was female. Male business educators had an average mean score of 87%, while female business educators had an average mean score of 79.52%. The scores for Economics certified teachers showed only a 1.25% difference based on teacher gender, with female economics teachers having a mean score of 79.56% and male economics teachers having a mean score of 78.31%. These differences could be because of the number of teachers in each group. Twenty-three business teachers in the sample were female and 18 were male. Nine economics teachers in the sample were female and 32 were male. This holds true to the literature which stated that males are more likely to teach social studies than females (National Center for Education Statistics, 2009).

Table 7

*EOCT Scores by Certification Area and Gender – Two-Way ANOVA Results*

	Type III Sum of Squares	Df	Mean Square	F	Sig	Partial Eta Squared
Certification	310.22	1	310.22	3.75	.056	.046
Gender	161.06	1	161.06	1.95	.167	.024
Certification * Gender	315.09	1	315.09	3.81	.054	.047
Error	6446.84	78	82.65			

\* $p < .05$

**Research Question 4**

Is there a statistically significant difference between student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with a Business Education certification and students taught by teachers with a Social Studies certification based on teacher certification level (measured by the Georgia Professional Standards Commission as the highest degree earned)?

There was no significant Certification and Certification Level interaction,  $F(2,82) = .259$ ,  $p = .772$  (see Table 8). Teacher certification was analyzed in this study as research shows that students typically have higher student achievement scores when instructed by a teacher with an advanced degree (Clotfelter, Ladd, & Vigdor, 2007; Bosshardt & Watts, 1990; Baumol & Highsmith, 1988). For this study, the teacher's degree (BA, MEd, MAT, EdS, EdD/PhD) is defined by the teacher's level of certification (T-4, T-5, T-6, or T-7) with T-6 and T-7 certification level combined and analyzed as Educational Specialist degree or higher.

Table 8

*EOCT Scores by Certification Area and Certification Level Two-Way ANOVA Results*

	Type III Sum of Squares	df	Mean Square	F	Sig	Partial Eta Squared
Certification	246.22	1	246.22	2.79	.98	.04
Certification Level	277.32	2	138.66	1.58	.214	.04
Certification *						
Certification Level	45.64	2	22.82	.26	.77	.01
Error	6688.04	76	88.00			

\* $p < .05$

This study did not produce a statistically significant difference for the student test scores based on teacher certification area and teacher certification level. However, descriptive statistics show a difference in the highest mean score based on the teacher certification levels for the two certification areas analyzed in this study. The highest mean score by teacher certification level for teachers certified in Business Education is the level 7 certificate holders with a mean score of 87.00%. The highest mean score by teacher certification level for teachers certified in Economics is the level 5 certificate holders with a mean score of 79.73%. For the teachers certified in Economics, the level 5 certificate holders are also the largest group within the sample; this could cause a difference in the mean. The lowest mean score by teacher certification level for teachers in both groups was the level 4 certificate holders. This information is consistent with the research that students typically have lower student achievement scores with teachers who have less content knowledge (Scahill & Melincan, 2005; Walstad, 2001; Shulman, 1986; Walstad & Watts, 1985). Bonferroni was utilized as the post-hoc test for this study (see Table 9).

Table 9

*Bonferroni Multiple Comparisons for Certification Level*

Comparisons	Mean Difference	Std. Error	95% CI	
			Lower Bound	Upper Bound
Level 4 vs. Level 5	-4.80	2.79	-11.61	2.02
Level 4 vs. Level 6	-2.59	2.96	-9.83	4.66
Level 5 vs. Level 4	4.80	2.79	-2.02	11.61
Level 5 vs. Level 6	2.21	2.35	-3.54	7.96
Level 6 vs. Level 4	2.59	2.96	-4.66	9.83
Level 6 vs. Level 5	-2.21	2.35	-7.96	3.54

\* $p < .05$ **Summary**

The results of this study reveal statistically significant differences between student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test based on teacher certification in Business Education. No statistically significant differences were found for the interaction between teacher certification and teacher gender. There were also no statistically significant differences found for the interaction between teacher certification and teacher certification level (as defined by highest degree held). Descriptive statistics for this study suggest a potential relationship between teacher certification and teacher gender for business education teachers. Descriptive statistics also suggest a potential relationship between teacher certification and teacher certification level.

## CHAPTER 5

### CONCLUSIONS AND RECOMMENDATIONS

This chapter restates the purpose and research questions for this study. Conclusions drawn from the analysis of data are discussed. The chapter concludes with recommendations for effective practice and policy as well as future research.

#### **Purpose**

In this causal-comparative research study, the purpose was to identify whether or not student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test (EOCT) have statistically significant differences based on educator certification in Business Education or Social Studies Education (defined as Economics certification). With the recent addition of Business Education as a certification area that may instruct the Georgia High School Economics course, this study aimed to bring awareness to decision makers and teachers that business education teachers in Georgia are highly qualified to teach this required high school course as demonstrated by student achievement scores on the Georgia End-of-Course Test in Economics/Business/Free Enterprise. Administrators and teachers throughout Georgia may be unaware this certification rule has changed for the required high school economics course. The administrators who are aware this rule has changed are concerned about allowing an instructor outside of the Social Studies department to teach the course because of the high stakes End-of-Course Test involved and the limited experience Georgia Career and Technical Education teachers have with high stakes testing.

### **Research Questions**

For this study, answers to the following questions were sought:

1. What are student achievement scores on the Georgia High School Economics End-of-Course Test for students taught by teachers with Business Education certification and students taught by teachers with Social Studies certification?

2. Is there a statistically significant difference between student achievement scores on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for students taught by teachers with Business Education certification and students taught by teachers with Social Studies certification?

3. Is there a statistically significant difference between student achievement scores on the Georgia High School Economics End-of-Course Test for students taught by teachers with Business Education certification and students taught by teachers with Social Studies certification based on teacher gender?

4. Is there a statistically significant difference between student achievement scores on the Georgia High School Economics End-of-Course Test for students taught by teachers with Business Education certification and students taught by teachers with Social Studies certification based on teacher certification level (measured by the Georgia Professional Standards Commission as the highest degree earned)?

### **Summary of Findings**

There was a statistically significant difference for Teacher Certification,  $F(1, 82) = 4.158$ ,  $p = .049$ . The descriptive statistics show that business education teachers had a higher mean score and a lower standard deviation on the Georgia High School Economics/Business/Free Enterprise End-of-Course Test for the spring 2010 administration. Business education teachers in

the sample had a mean score of 82.80% and a standard deviation of 8.911. Economics certified instructors, also known as social studies instructors, in the sample had an average mean score of 78.59% and a standard deviation of 9.806. No statistically significant differences were found for the interaction between teacher certification and teacher gender or the interaction between teacher certification and teacher certification level in this study. However, based on the descriptive statistics for teacher gender, the study provides evidence that administrators also need to diversify the demographics of teachers who are selected to instruct the high school economics course as over half of the economics instructors are white males.

### **Conclusions**

The following conclusions were drawn based on the finds of this study:

#### **Conclusion 1**

Students of Business Education teachers perform at the same level or in the case of the spring 2010 data set, higher than students of Social Studies teachers on the Georgia Economics/Business/Free Enterprise End-of-Course Test.

This study did produce statistically significantly results, and the study does show a higher average mean EOCT score for the students who were taught by a business educator. Legislation guides most local and state policy decisions. With the teacher certification requirements of No Child Left Behind, many state agencies have changed their policies on who is considered to be “highly qualified” to teach certain content courses. This study supports the Georgia policy decision to include business education as a certification area that is highly qualified to teach the economics course without taking the GACE in Economics.

With higher mean student achievement scores on the Economics/Business/Free Enterprise EOCT, Business Education certification should remain on the Georgia Professional

Standards Commission list of approved certifications for the Economics course in Georgia High Schools. Teachers who are interested in offering the Economics course through the Career and Technical Education Department may be able to utilize this information in discussions with local administration as the study does demonstrate that students of business educators did have higher student achievement scores than the social studies teachers. The certification policy should maintain business education as a certification that is highly qualified to teach economics in high school. Teachers should be allowed to teach the economics course if they are business education certified, regardless of the historical practice of only allowing social studies educators to teach this course. This study demonstrates to school level administration that social studies teachers do not demonstrate significantly higher student achievement scores. Administrators need to ensure stakeholders such as parents and the local school board they are placing the most qualified teacher in the classroom to instruct the students. It is critical to know all of the facts before making decisions on staffing when there is a high-stakes test involved.

## **Conclusion 2**

There may be limited awareness among teachers, local system administration, and stakeholders that teachers holding Business Education certification may instruct the Economics course.

This conclusion has been drawn from the business education data set in this study. Only 41 business education teachers had student achievement scores for the spring 2010 administration of the Economics/Business/Free Enterprise End-of-Course Test. Business education was recently (2007) added as a certification that is listed by the Georgia Professional Standards Commission as highly qualified to teach the Economics course without being certified



in Economics by passing the Economics GACE (Georgia Professional Standards Commission, 2007). Slowly, business educators have begun to request and teach the economics course.

Also, only 27 counties and/or local school systems were represented with student scores on the EOCT in Economics/Business/Free Enterprise in the business education data set. Business educators as well as the Georgia Business Education Association need to create an administrator and teacher awareness campaign to inform administrators of their qualifications to teach the high school economics course. Of the 27 counties and/or local school systems reporting, geographically, 13 are considered North Georgia, 6 are considered Middle Georgia, and 8 are considered South Georgia. It would be beneficial for the teachers and the professional organizations to target the schools in the Middle Georgia region of the state, as they have the fewest business education teachers currently instructing the high school economics course according to the study.

### **Conclusion 3**

Business Education teachers need to promote their student achievement scores to stakeholders such as the local and state government, local school board, parents, and administrators.

High-stakes testing provides data required by both the Federal and state governments when making hard choices about funding for school systems. As a program area, career and technical education needs to increase the amount of data we collect on student achievement. On March 8, 2011, through a pre-recorded speech addressed to Career and Technical educators at the ACTE National Policy Seminar in Washington, DC, the current Secretary of Education, Arnie Duncan, expressed his concern about the lack of data for Career and Technical Education programs (ACTE, 2011). As the only End-of-Course Test in Georgia that may reflect a career

and technical educator's teaching ability, the data on the Economics/Business/Free Enterprise EOCT needs to be conveyed not only to local administrators, but also to Georgia representatives and senators, U. S. Department of Education, the Office for Vocational and Adult Education, the U.S. Department of Labor, and the current Presidential Administration. Career and technical educators across the United States need to produce measurable data to indicate their role in advancing student achievement. Business education teachers need to utilize their student achievement scores on the EOCT to promote their ability to demonstrate gains in student achievement.

### **Recommendations for Practice**

In order to produce an educated citizenry, the United States must invest in economic and personal financial literacy in American public schools through mandates on courses, testing, and teacher professional learning. It is the hope of the Council for Economic Education, most economists, and most economics professors across America that these students can apply this knowledge to rise above the current economic downturn and make America flourish (Council for Economic Education, 2009). Thus, a course in economics and financial literacy should remain a mandated course in all high schools in Georgia (Council for Economic Education, 2009). The Council for Economic Education (2009) stated on their website that,

The recent economic downturn has brought nationwide attention to the dangers of an economically and financially illiterate society. Now more than ever, policy makers, business leaders, media figures, educators and parents are demanding that their children graduate from school with an understanding of basic economic and financial concepts (<http://www.councilforeconed.org/about/survey2009/>).

In 2009, 21 states required economics to graduate from a public high school which is 4 less than in 2007. The 21 states requiring economics to graduate make up 65% of the United States population (Council for Economic Education, 2009). Only 19 states require an assessment of student knowledge (Council for Economic Education, 2009). All remaining states should join these states currently requiring economics and economics knowledge tests. It is also important for the states to make policy decisions for teacher certification requirements that accurately reflect what is taught at the teacher preparation institutions and honor the content knowledge of teachers in business education as legitimate for teaching the economics course in high school.

It is also reported that only 30% of the teachers currently teaching stand-alone economics and/or personal finance courses have received course specific professional learning through instructional strategy workshops or other means (Council for Economic Education, 2010). Through business education teacher preparation programs, particularly in the state of Georgia, many teachers receive the content knowledge and teaching strategies that will make them confident teaching economics and/or personal finance. For the teachers who do not participate in these specific teacher preparation programs, more emphasis needs to be given to professional learning and instructional development in order for the teachers to have gains in student achievement scores on high-stakes testing as well as gains in student content knowledge that students can apply to their “real life” upon exiting high school. The goal is to have the most qualified and best prepared teachers in the classroom providing the students with transferable skills to be successful on the Economics/Business/Free Enterprise EOCT and in life.

### **Recommendations for Research**

The results of this study suggest that business education teachers are legitimately highly qualified to teach high school economics. These results also suggest that students enrolled in

business education courses could possibly have higher student achievement scores on the Economics/Business/Free Enterprise EOCT. The Business Essentials and Entrepreneurial Ventures courses in the Business Education Georgia Performance Standards both contain several standards that focus on economics. Further research can be conducted to analyze Georgia High School Economics End-of-Course Test achievement scores for students who have earned credit for a business education course prior to or concurrent with their enrollment in the required economics course. A sample of students who have successfully completed either of the Georgia business education courses, Business Essentials or Entrepreneurial Ventures, would be compared to a sample of students who have not successfully completed either Business Essentials or Entrepreneurial Ventures prior to or concurrent with their enrollment in the economics course. The goal of this study would be to assist with the sequencing of courses and requirements for students who have traditionally performed below average on the Georgia End-of-Course Test in Economics, in hopes this will help facilitate student success. Another aspect of the study could include a precision review of the Georgia Business Education Course Performance Standards and the Georgia Economics Course Performance Standards to identify standards and elements that are similar or reinforce the same content knowledge.

Additionally, further research could be done to analyze the student achievement scores on the Economics/Business/Free Enterprise EOCT of students who participate in work-based learning opportunities. A sample of students who are enrolled in the work-based learning program, internship program, or co-operative learning program at their high school would be utilized to compare to a sample of students who were not enrolled in work-based learning during their high school experience. The goal of this study would be to analyze if students who were able to put economic and personal finance content into action in the workplace fared better on

the EOCT than students who simply took the economics course and did not put the content into practice. This study would explain further if application of knowledge into real world settings affects student achievement as the questions on the EOCT require some application of concepts.

Lastly, it is recommended that this study be replicated with Marketing Education certified teachers. Marketing education is the third certification (along with Business Education and Economics) that is highly qualified to teach the Economics per the Georgia Professional Standards Commission (Georgia Professional Standards Commission, 2007). In Georgia, to earn a degree in Marketing Education, a teacher must complete a minimum of two courses in economics (The University of Georgia, 2010; The University of West Georgia, 2010; Valdosta State University, 2010). The Marketing Education GACE also has questions that require teacher candidates to apply economic concepts in order to pass the exam and be certified in Marketing Education. At the time of this study, there was not a data set for Marketing Education teachers. With the increase of public awareness, it is possible that there will be a data set of Marketing Education teachers in the future.

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## APPENDICES

Appendix A  
Georgia Performance Standards  
High School  
Economics Course

## Economics

The economics course provides students with a basic foundation in the field of economics. The course has five sections: fundamental concepts, microeconomics, macroeconomics, international economics, and personal finance. In each area, students are introduced to major concepts and themes concerning that aspect of economics.

### Fundamental Economic Concepts

**SSEF1 The student will explain why limited productive resources and unlimited wants result in scarcity, opportunity costs, and tradeoffs for individuals, businesses, and governments.**

- a. Define scarcity as a basic condition that exists when unlimited wants exceed limited productive resources.
- b. Define and give examples of productive resources (factors of production) (e.g., land (natural), labor (human), capital (capital goods), entrepreneurship).
- c. List a variety of strategies for allocating scarce resources.
- d. Define opportunity cost as the next best alternative given up when individuals, businesses, and governments confront scarcity by making choices.

**SSEF2 The student will give examples of how rational decision making entails comparing the marginal benefits and the marginal costs of an action.**

- a. Illustrate by means of a production possibilities curve the trade offs between two options.
- b. Explain that rational decisions occur when the marginal benefits of an action equal or exceed the marginal costs.

**SSEF3 The student will explain how specialization and voluntary exchange between buyers and sellers increase the satisfaction of both parties.**

- a. Give examples of how individuals and businesses specialize.
- b. Explain that both parties gain as a result of voluntary, non-fraudulent exchange.

**SSEF4 The student will compare and contrast different economic systems and explain how they answer the three basic economic questions of what to produce, how to produce, and for whom to produce.**

- a. Compare command, market, and mixed economic systems with regard to private ownership, profit motive, consumer sovereignty, competition, and government regulation.
- b. Evaluate how well each type of system answers the three economic questions and meets the broad social and economic goals of freedom, security, equity, growth, efficiency, and stability.

**SSEF5 The student will describe the roles of government in a market economy.**

- a. Explain why government provides public goods and services, redistributes income, protects property rights, and resolves market failures.
- b. Give examples of government regulation and deregulation and their effects on consumers and producers.

**SSEF6 The student will explain how productivity, economic growth, and future standards of living are influenced by investment in factories, machinery, new technology, and the health, education, and training of people.**

- a. Define productivity as the relationship of inputs to outputs.
- b. Give illustrations of investment in equipment and technology and explain their relationship to economic growth.
- c. Give examples of how investment in education can lead to a higher standard of living.

#### Microeconomic Concepts

**SSEMI1 The student will describe how households, businesses, and governments are interdependent and interact through flows of goods, services, and money.**

- a. Illustrate by means of a circular flow diagram, the Product market; the Resource (factor) market; the real flow of goods and services between and among businesses, households, and government; and the flow of money.
- b. Explain the role of money as a medium of exchange and how it facilitates exchange.

**SSEMI2 The student will explain how the Law of Demand, the Law of Supply, prices, and profits work to determine production and distribution in a market economy.**

- a. Define the Law of Supply and the Law of Demand.
- b. Describe the role of buyers and sellers in determining market clearing price.
- c. Illustrate on a graph how supply and demand determine equilibrium price and quantity.
- d. Explain how prices serve as incentives in a market economy.

**SSEMI3 The student will explain how markets, prices, and competition influence economic behavior.**

- a. Identify and illustrate on a graph factors that cause changes in market supply and demand.
- b. Explain and illustrate on a graph how price floors create surpluses and price ceilings create shortages.
- c. Define price elasticity of demand and supply.

**SSEMI4 The student will explain the organization and role of business and analyze the four types of market structures in the U.S. economy.**

- a. Compare and contrast three forms of business organization—sole proprietorship, partnership, and corporation.
- b. Explain the role of profit as an incentive for entrepreneurs.
- c. Identify the basic characteristics of monopoly, oligopoly, monopolistic competition, and pure competition.

Macroeconomic Concepts

**SSEMA1 The student will illustrate the means by which economic activity is measured.**

- a. Explain that overall levels of income, employment, and prices are determined by the spending and production decisions of households, businesses, government, and net exports.
- b. Define Gross Domestic Product (GDP), economic growth, unemployment, Consumer Price Index (CPI), inflation, stagflation, and aggregate supply and aggregate demand.
- c. Explain how economic growth, inflation, and unemployment are calculated.
- d. Identify structural, cyclical, and frictional unemployment.
- e. Define the stages of the business cycle, include peak, contraction, trough, recovery, expansion as well as recession and depression.
- f. Describe the difference between the national debt and government deficits.

**SSEMA2 The student will explain the role and functions of the Federal Reserve System.**

- a. Describe the organization of the Federal Reserve System.
- b. Define monetary policy.
- c. Describe how the Federal Reserve uses the tools of monetary policy to promote price stability, full employment, and economic growth.

**SSEMA3 The student will explain how the government uses fiscal policy to promote price stability, full employment, and economic growth.**

- a. Define fiscal policy.
- b. Explain the government's taxing and spending decisions.

International Economics

**SSEIN1 The student will explain why individuals, businesses, and governments trade goods and services.**

- a. Define and distinguish between absolute advantage and comparative advantage.
- b. Explain that most trade takes place because of comparative advantage in the production of a good or service.
- c. Explain the difference between balance of trade and balance of payments.

**SSEIN2 The student will explain why countries sometimes erect trade barriers and sometimes advocate free trade.**

- a. Define trade barriers as tariffs, quotas, embargoes, standards, and subsidies.
- b. Identify costs and benefits of trade barriers over time.
- c. List specific examples of trade barriers.
- d. List specific examples of trading blocks such as the EU, NAFTA, and ASEAN.
- e. Evaluate arguments for and against free trade.

**SSEIN3 The student will explain how changes in exchange rates can have an impact on the purchasing power of individuals in the United States and in other countries.**

- a. Define exchange rate as the price of one nation's currency in terms of another nation's currency.
- b. Locate information on exchange rates.
- c. Interpret exchange rate tables.
- d. Explain why, when exchange rates change, some groups benefit and others lose.

**Personal Finance Economics**

**SSEPF1 The student will apply rational decision making to personal spending and saving choices.**

- a. Explain that people respond to positive and negative incentives in predictable ways.
- b. Use a rational decision making model to select one option over another.
- c. Create a savings or financial investment plan for a future goal.

**SSEPF2 The student will explain that banks and other financial institutions are businesses that channel funds from savers to investors.**

- a. Compare services offered by different financial institutions.
- b. Explain reasons for the spread between interest charged and interest earned.
- c. Give examples of the direct relationship between risk and return.
- d. Evaluate a variety of savings and investment options; include stocks, bonds, and mutual funds.

**SSEPF3 The student will explain how changes in monetary and fiscal policy can have an impact on an individual's spending and saving choices.**

- a. Give examples of who benefits and who loses from inflation.
- b. Define progressive, regressive, and proportional taxes.
- c. Explain how an increase in sales tax affects different income groups.

**SSEPF4 The student will evaluate the costs and benefits of using credit.**

- a. List factors that affect credit worthiness.
- b. Compare interest rates on loans and credit cards from different institutions.
- c. Explain the difference between simple and compound interest rates.

**SSEPF5 The student will describe how insurance and other risk-management strategies protect against financial loss.**

- a. List various types of insurance such as automobile, health, life, disability, and property.
- b. Explain the costs and benefits associated with different types of insurance; include deductibles, premiums, shared liability, and asset protection.

**SSEPF6 The student will describe how the earnings of workers are determined in the marketplace.**

- a. Identify skills that are required to be successful in the workplace.
- b. Explain the significance of investment in education, training, and skill development.

Appendix B

Released Georgia High School Economics End-of-Course Test

Spring 2004

Student Name \_\_\_\_\_

Form 601

**Georgia****End-****Of-****Course****Tests**

**Economics/Business/  
Free Enterprise  
Released Test Booklet  
Spring 2004**



Georgia Department of Education  
Kathy Cox, State Superintendent of Schools  
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**ECONOMICS**

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**SECTION I****Directions:**

Today you will be taking the Economics/Business/Free Enterprise End-of-Course Test. Read each question carefully and then choose the *best* answer.

Be sure that the question number on the answer sheet matches the number on the test. Then mark your answer by filling in the circle on your answer sheet. Do not write your answers in the test booklet. If you do not know the answer to a question, skip it and go on. You may return to it later if time permits.

If you need to change an answer on your answer sheet, be sure to erase your first mark completely. Do not make any stray marks on the answer sheet.

If you finish the section of the test early, you may review your answers in that section only. You may not go on to the next section or return to a previous section.

The two practice test questions below are provided to show you what the questions in the test are like. For each question, you should choose the one *best* answer and fill in the circle in the space provided on your answer sheet.

**Practice Items:**

**P1** Mr. Jacobs obtained a loan from the local bank to purchase seed and fertilizer. Which of the following was the bank's MOST important consideration in giving Mr. Jacobs a loan?

- A the amount of farming experience he had
- B the value of his farmland and equipment
- C the kind of crop he was growing
- D the location of his farm

**P2** Coal miners are often paid more than other workers with similar levels of education. This increased pay is primarily a result of

- A successful collective bargaining
- B physical labor requirements
- C overtime hours worked
- D hazardous working conditions



## ECONOMICS

- 1 Kim works on an automobile assembly line. Kim's job illustrates a production process that relies on
- autonomous work groups
  - team decision making
  - quality circles
  - division of labor
- 2 The minimum wage is a type of
- price floor
  - comparable worth
  - price ceiling
  - marginal price
- 3 What would you conclude about an economy characterized by increasing real gross domestic product (GDP), low unemployment, and increasing inflationary pressures?
- This economy is in a slowdown.
  - The government needs to address the unemployment problem.
  - This economy is in the expansion phase of a business cycle.
  - The Federal Reserve should expand the money supply.
- 4 Which of these is MOST likely to lead to inflation?
- an increase in the costs of production
  - reduced prices for goods and services
  - an increase in the aggregate supply of goods and services
  - the application of price ceilings
- 5 An individual decides to pay \$8 to see a movie instead of buying an \$8 meal. What is the opportunity cost of the movie?
- the satisfaction missed by not eating the meal
  - the \$8 paid to see the movie
  - the time spent watching the movie
  - the satisfaction received by going to the movie
- 6 Armand is a skilled carpenter who lives in Minnesota. He builds homes from April to November. Which of the following has the greatest impact on why Armand's company shuts down for the winter?
- economic slowdown from December to March
  - extreme weather conditions
  - cost of building materials
  - shortage of labor
- 7 The table represents the number of bushels of wheat and rice that the United States and China can produce in one day (numbers are in thousands).

	Wheat	Rice
United States	50	35
China	40	30

Which of these conclusions can be drawn from the data?

- The United States has an absolute advantage in the production of wheat, and China has an absolute advantage in the production of rice.
- The United States has an absolute advantage in the production of rice, and China has an absolute advantage in the production of wheat.
- China has an absolute advantage in the production of both wheat and rice.
- The United States has an absolute advantage in the production of both wheat and rice.

## ECONOMICS

8 A tariff can BEST be described as which of the following?

- A a tax on an imported good
- B a limit on the amount of imports
- C government payments to domestic producers to help them compete in world markets
- D a law that sets a limit on the amount of a good that can be imported

9 Prices act as signals in the market because

- A prices indicate to sellers the types of goods and services to offer for sale
- B prices can determine dividends for businesses
- C high prices for goods and services signal a healthy economy
- D entrepreneurs become motivated as prices rise

10 Study the following graph and use it to answer the question.



What is one conclusion that can be made from the graph?

- A Companies that develop new products are bought out by larger companies.
- B Stockholders value immediate return on investment the most.
- C Research and development is the largest corporate expenditure.
- D Long-term growth is the goal of many companies.

11 When the Federal Reserve buys government securities on the open market, what effect does this action have on the nation's money supply and aggregate demand?

- | <u>Money Supply</u> | <u>Aggregate Demand</u> |
|---------------------|-------------------------|
| A increases         | increases               |
| B increases         | decreases               |
| C decreases         | increases               |
| D decreases         | decreases               |

## ECONOMICS

- 12 When the U.S. government purchases a submarine from a company, the government has made a major transaction in the
- A factor market
  - B public market
  - C product market
  - D foreign exchange market
- 13 What is the primary purpose of the North American Free Trade Agreement (NAFTA)?
- A to reduce trade barriers among the United States, Canada, and Mexico
  - B to decrease quotas but increase tariffs among the member countries
  - C to establish trade policy between the member countries and the rest of the world
  - D to counter the establishment of the European Union
- 14 Use the information from the scenario below to answer the following question.
- Amanda decided to open a carpet cleaning business. She hired ten employees, rented a small commercial office with storage, and took out a business loan to buy three vans and carpet cleaning equipment. Two of Amanda's employees ordered supplies and processed the paperwork; one employee was responsible for marketing and the rest actually cleaned carpets. After one year, *Amanda's Carpet Cleaning* cleared \$40,000 after expenses.
- Which of the following BEST represents capital investment?
- A renting commercial office space
  - B marketing the business
  - C purchasing carpet cleaning equipment
  - D hiring ten employees
- 15 What is the unit of study in microeconomics?
- A individual businesses and households
  - B inflation and recession
  - C national consumption and expenditures
  - D imports and exports
- 16 In which type of union organization are only workers with the same or similar skills eligible for membership?
- A a craft union
  - B an industrial union
  - C a closed shop
  - D an agency shop

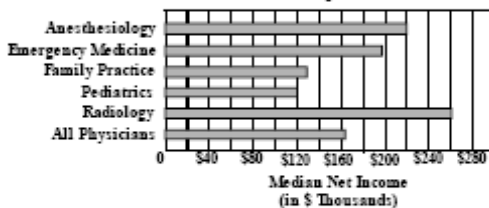
## ECONOMICS

- 17 The idea that producers make goods that consumers like and are willing to pay for is a principle of which of the following economic systems?
- A traditional
  - B command
  - C market
  - D socialism
- 18 Which of the following is primarily responsible for the control of the money supply?
- A the United States Treasury
  - B the Federal Reserve System
  - C the Federal Deposit Insurance Corporation
  - D the Comptroller of the Currency
- 19 Which of the following is MOST likely to cause wages to increase for United States workers?
- A an increase in interest rates
  - B an increase in the value of the dollar
  - C an increase in worker productivity
  - D an increase in retirement rate among United States workers
- 20 Sharon decided to open a dry-cleaning business. She borrowed some money from her sister and took a loan from a bank. She hired one helper. What is a disadvantage of Sharon's business as described?
- A no separation of ownership and control
  - B ease of organizing the firm
  - C unlimited liability
  - D double taxation
- 21 FIELD TEST ITEM
- 22 FIELD TEST ITEM
- 23 FIELD TEST ITEM

## ECONOMICS

- 24 Study the information below and use it to answer the question that follows.

Median Net Income of Medical Doctors  
After Expenses



*Occupational Outlook Handbook: 2009-2011,  
U.S. Department of Labor*

How many categories of medical doctors had a median income that was lower than the median income for all physicians combined?

- A 1  
B 2  
C 3  
D 4
- 25 Brandon had \$5,000 in his saving account when his bank declared bankruptcy. Which of the following is true?
- A Brandon's savings will be transferred to an Individual Retirement Account.  
B Some of Brandon's savings will be returned to him after the bank's assets are sold off.  
C Brandon's savings will be lost due to the bankruptcy.  
D Brandon's savings will be protected by the FDIC.

- 26 Countries X and Y will NOT trade shoes and wheat if which of the following is true?

- A Country X can produce more shoes and wheat than can country Y.  
B Country Y can produce enough shoes and wheat to satisfy the demand of its public.  
C The opportunity costs of producing shoes and wheat are the same in both countries.  
D The opportunity cost of producing shoes is greater in country X than it is in country Y.

## ECONOMICS

- 27 Use the information below to answer the following question.

Gloria recently graduated from college and has accepted a job as an accountant at a firm located in an Atlanta suburb. A summary of Gloria's financial situation for a single month is shown below.

Gloria's Financial Information for April

Expenses		Income	
Fixed Expenses	\$1100	Gross Wages (April)	\$3700
Variable Expenses	\$1500	Mandatory deductions from Gloria's wages (April)	
		Personal income tax	\$660
		FICA contribution	\$280
		Medical insurance	\$40
		Other	\$20

After considerable thought, Gloria decided to purchase a new refrigerator on an installment credit plan. Under the conditions of the installment loan, Gloria will repay the loan in twelve monthly payments of \$150 each, starting in May. Which of the following statements BEST describes Gloria's current financial situation?

- A Gloria can afford to make the additional \$150 monthly payments without changing her current income or expenses.
- B Gloria's variable expenses will increase by \$150 per month over the next twelve months.
- C Gloria will have to increase her income or reduce her flexible expenses in order to pay all of her bills in May.
- D Gloria's income and current expenses do not allow her to purchase the refrigerator at this time.

- 28 Higher demand for U.S. exports will typically result in

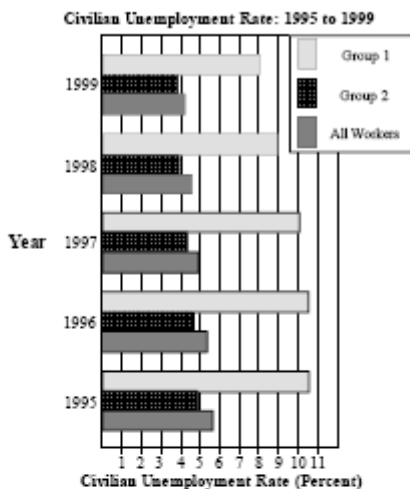
- A an increase in the international value of the dollar
- B an increase in the international value of foreign currencies
- C an increase in the trade deficit of the United States
- D an increase in the price of foreign-produced goods in U.S. markets

- 29 When economists refer to "demand," they mean which of the following?

- A how much satisfaction buyers receive from a purchase
- B how much consumers will purchase at different prices
- C how much sellers will supply at a particular price
- D how much people want the product if it is free

## ECONOMICS

- 30 Study the information below and use it to answer the question that follows.



*Economic Report of the President: 2000,*  
Bureau of Labor Statistics

The data in the bar graph shows

- A that the number of unemployed workers in Group 1 is greater than the number of unemployed workers in Group 2 from 1995 to 1999
- B that the unemployment rate for all workers was a serious economic problem by the late 1990s
- C that the percentage of unemployed workers in Group 1 was roughly twice as high as the percentage of all unemployed workers in the labor force from 1995 to 1999
- D that the percentage of unemployed workers in Group 2 was higher than the percentage of all workers who were unemployed from 1995 to 1999
- 31 People against raising the minimum wage argue that when a legal minimum wage is established above the equilibrium wage in the labor market
- A there will be an increase in unemployment
- B the quantity of labor demanded by firms will increase
- C the quantity of labor supplied will decrease
- D employers will have an incentive to use more labor and less capital
- 32 What basic economic problem do both higher-income nations and lower-income nations have in common?
- A too many unskilled laborers
- B lack of capital goods
- C too much government
- D scarcity of resources



## ECONOMICS

- 33 Study the information below and use it to answer the question that follows.



The data shows that the U.S. Gross Domestic Product in 1998 was about

- A \$3 trillion  
 B \$6 trillion  
 C \$8.5 trillion  
 D \$11.5 trillion
- 34 Which of the following is MOST important for economic growth?
- A efficient use of resources  
 B ample tax revenues  
 C availability of resources  
 D a large labor force

- 35 Which of the following is an attempt by a firm to increase the demand for its product?

- A the imposition of a price ceiling on the product  
 B an advertising strategy designed to change consumer tastes and preferences  
 C a marketing strategy to make the good scarce and therefore more expensive  
 D a production strategy to flood the market with the good or service

- 36 Study the information below and use it to answer the question that follows.

Year	Yen per Euro
1	90
2	115
3	80

The table shows the hypothetical international value of the Japanese yen in terms of the European euro. Which of the following BEST explains why the yen per euro changed from year 1 to year 2?

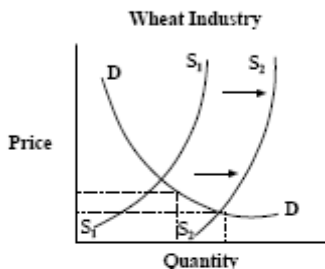
- A Japanese consumers increased the demand for European goods and services.  
 B Japanese business firms increased their exports to European markets.  
 C Japanese investment in European securities increased.  
 D The inflation rate in Europe increased at a faster rate than it did in Japan.
- 37 When the value of money was based on its silver content, new discoveries of silver were frequently followed by periods of
- A recession  
 B recovery  
 C shortage  
 D inflation

## ECONOMICS

38 The Federal Reserve System conducts its business directly with

- A the government and banks
- B stock markets and bond markets
- C individuals and firms
- D product markets and factor markets

39 Study the information below and use it to answer the question that follows.



Of the following, which situation would cause the shift of the supply curve from  $S_1$  to  $S_2$ ?

- A The government reduces subsidies to wheat farmers.
- B New fertilizers increase wheat crop yields.
- C Firms exit the wheat industry.
- D Drought reduces industry output by 25%.

40 Entrepreneurship and labor interact in which of the following ways?

- A Entrepreneurship makes decisions about the use of labor.
- B Labor makes decisions about the use of entrepreneurship.
- C Both entrepreneurship and labor receive payment in the form of interest.
- D Both entrepreneurship and labor receive payments in the form of rent.

41 FIELD TEST ITEM

ECONOMICS

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42 FIELD TEST ITEM

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45 FIELD TEST ITEM

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ECONOMICS

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## **SECTION II**

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## ECONOMICS

46 In the American economy, the goal of economic equity is MOST connected with

- A giving participants a fair chance to succeed
- B restoring laissez-faire capitalism
- C creating limits on corporate profits
- D subsidizing businesses that would otherwise fail

47 On the island of Yap, large circular stones are used for money. The main reason why this type of money serves its function as a medium of exchange is because it is

- A very portable
- B highly divisible
- C accepted as payment
- D prized in foreign transactions

48 Study the information below and use it to answer the question that follows.

Foreign Exchange Rates  
(Tuesday, July 3, 2001)

Country/ Currency	Foreign Currency in U.S. Dollars	U.S. Dollars in Foreign Currency
Canada/ Dollar	.6625	1.5095

Keisha traveled to Canada and took \$100 in U.S. currency. When Keisha exchanged the \$100 for an equivalent sum in Canadian dollars, she received about

- A 33 Canadian dollars
- B 66 Canadian dollars
- C 100 Canadian dollars
- D 150 Canadian dollars

49 Which of the following situations BEST illustrates the concept of regional specialization?

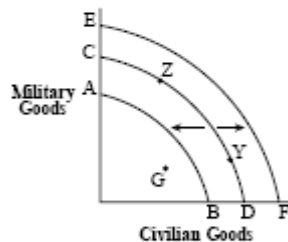
- A cattle ranching in Connecticut
- B evergreen nurseries in Florida
- C grape vineyards in California
- D pineapple plantations in Idaho

50 In the U.S., how are public goods paid for?

- A Private firms collect fees from their employees.
- B Non-profit organizations collect charitable donations from people.
- C The government collects tax revenues from individuals and firms.
- D Corporations make profits from selling goods and services.

51 Study the information below and use it to answer the question that follows.

Production in the  
United States: World War II



The entry of women into the American labor force during World War II was one important reason for

- A a shift from curve CD to point G
- B a shift from curve EF to curve CD
- C a movement from point Y to point Z
- D a shift from curve CD to curve EF

## ECONOMICS

- 52 Which form of business organization is easiest to organize but is LEAST able to benefit from specialization?
- A sole proprietorship  
B partnership  
C limited partnership  
D corporation
- 53 Firm X has developed a new mechanical device and has patented all of the key components used in its production. As the sole producer of this device, Firm X is a
- A geographic monopoly  
B natural monopoly  
C technological monopoly  
D government monopoly
- 54 Of the following groups, the one hurt the LEAST by unanticipated inflation is
- A workers who have cost-of-living adjustments in their labor contracts  
B people who have saved money in accounts with a fixed interest rate  
C banks that have made long term, fixed rate mortgage loans  
D consumers who buy goods and services at prevailing market prices
- 55 Country X is currently investing heavily in research and development (R&D), mainly in the areas of information and communications technologies. All of the following are predictable results of these investments EXCEPT
- A future economic growth  
B future increases in labor productivity  
C the creation of labor-intensive industries  
D the creation of advanced capital goods

- 56 Study the information below and use it to answer the question that follows.

Per Capita GNP for Selected Countries:  
1998

Countries	Per capita GNP
Country 1	\$410
Country 2	\$2,260
Country 3	\$8,600
Country 4	\$34,310

*Human Development Report: 2000, United Nations Development Program*

Which of these matches the per capita GNP for Countries 1, 2, 3, and 4, respectively?

- A Haiti, Norway, Russia, South Korea  
B Russia, Haiti, South Korea, Norway  
C South Korea, Haiti, Norway, Russia  
D Haiti, Russia, South Korea, Norway
- 57 The MOST important factor affecting consumer spending is
- A the level of current consumer debt  
B the amount of assets held by consumers such as homes, cars, stocks, or bonds  
C the expectations of consumers of what the economy will be in the future  
D the level of current consumer income
- 58 The BEST example of a progressive tax in the United States is
- A the federal excise tax on gasoline  
B the Social Security tax  
C the federal personal income tax  
D state sales taxes

## ECONOMICS

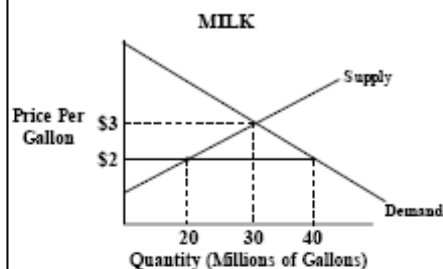
59 If a nation encourages entrepreneurship, then which of the following is likely to occur?

- A very little change in overall production of goods and services
- B the development of many new products and process methods
- C fewer applications to the United States Patent Office
- D a decline in the number of new businesses started

60 FIELD TEST ITEM

61 FIELD TEST ITEM

62 Use the graph below to answer the question that follows.



Suppose the government set a binding price ceiling at \$2. What would be the quantity demanded and the quantity supplied?

	<u>Demanded</u>	<u>Supplied</u>
A	20	40
B	30	30
C	40	30
D	40	20

63 Which of the following is an example of an investment in human capital?

- A A company builds a new factory.
- B A state puts in a new highway.
- C A person goes to college.
- D A country builds new schools.

64 In the year 2000, Microsoft founder Bill Gates was the world's richest person. The origins of Gates' vast financial fortune stemmed from his

- A inherited wealth
- B entrepreneurial skills
- C experience in human relations
- D concern for the natural environment

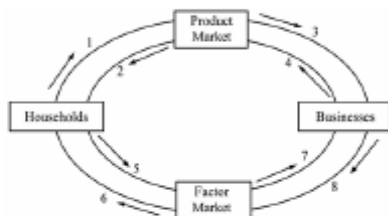


## ECONOMICS

65 The BEST example of structural unemployment in an economy is someone

- A between jobs or entering the work force
- B out of work due to a change in the business cycle
- C out of work due to a seasonal downturn in business
- D whose job skills do not match the economy's needs

66 Study the information below and use it to answer the question that follows.



The flow of goods and services to consumers is illustrated by

- A 4 to 2
- B 8 to 6
- C 2 to 5
- D 6 to 1

67 The payments for land, labor, capital, and entrepreneurial ability respectively are

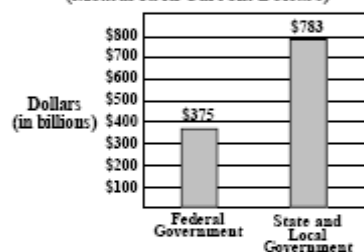
- A rent, profit, wages, and interest
- B profits, wages, interest, and rent
- C rent, wages, interest, and profit
- D wages, rent, profit, and interest

68 Which of the following is true about a shareholder in a corporation?

- A A shareholder is part owner of that business.
- B A shareholder may not share in the earnings of that corporation.
- C A shareholder may not transfer his share to another party without permission.
- D A shareholder is liable for any debts accumulated by that corporation.

69 Study the information and use it to answer the question.

U.S. Government Expenditures and the GDP : 1999  
(Measured in Current Dollars)



Survey of Current Business (Feb. 2001),  
U.S. Department of Commerce

The nominal GDP in 1999 was \$9.3 trillion. What percentage of the nation's nominal GDP was comprised of government expenditures?

- A about 5%
- B about 12%
- C about 17%
- D about 21%

## ECONOMICS

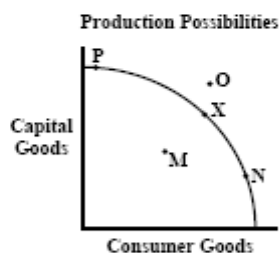
70 In which economic system does the government own the means of production?

- A traditional
- B mixed
- C market
- D command

71 Eric received a \$2,000 bonus from his employer. He deposited the entire amount in a one-year certificate of deposit with a simple interest rate of 5%. When the CD matured, how much interest had Eric earned?

- A \$10
- B \$20
- C \$50
- D \$100

72 Study the graph below and use it to answer the following question.



The probable impact of corporate downsizing is a movement from point X to

- A point M
- B point N
- C point O
- D point P

73 A market economy has an advantage over a traditional economy in that the market economy

- A controls prices and wages
- B fixes incomes of consumers
- C limits the profits of large corporations
- D adjusts to consumer demands over time

74 When aggregate demand exceeds aggregate supply in an economy, the MOST immediate result is

- A inflation
- B deflation
- C unemployment
- D a budgetary surplus

75 Which of the following determines the division of the economy's output among groups and individuals in a market system?

- A the incomes of individuals
- B labor unions through collective bargaining
- C marketing departments within firms
- D federal and state laws

## ECONOMICS

- 76 Study the information below and use it to answer the question.



An oil embargo placed on the United States by major oil producing nations would likely result in

	<u>Price Level</u>	<u>Real GDP</u>
A	increase	increase
B	increase	decrease
C	decrease	increase
D	decrease	decrease

- 77 Which of the following is an example of a microeconomic decision?

- A whether to increase or decrease the money supply
- B whether to increase or decrease taxes
- C how to reduce the unemployment rate
- D how many hours an employee should work each week

- 78 In which market structure does a firm have greatest control over its product's price?

- A perfect competition
- B monopoly
- C oligopoly
- D monopolistic competition

- 79 If the federal government is attempting to encourage spending by consumers and businesses, a fiscal policy BEST serving this purpose would be

- A decreasing taxes
- B decreasing government spending
- C reducing the investment tax credit
- D balancing the budget

- 80 The power of labor unions in the United States is based on

- A the principle of mutual advantage
- B their ability to bargain collectively
- C the fact that most unions are closed shops
- D the principle of comparative advantage

- 81 Which of the following taxes is MOST regressive?

- A the federal income tax
- B a sales tax on food
- C a luxury tax
- D the corporate income tax

- 82 In a market economy, how are the basic economic questions of what, how, and for whom to produce answered?

- A by using a nation's social customs and traditions
- B by using a combination of traditional and command economies
- C by the individuals and firms in the nation's marketplace
- D by the nation's federal and/or local governments

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**ECONOMICS**

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**83** Interdependence and price leadership are characteristics of firms in what kind of market structure?

- A monopoly
- B oligopoly
- C monopolistic competition
- D perfect competition

**84** Which of the following results when federal government expenditures are less than the federal government's total receipts?

- A a trade surplus
- B a federal budget deficit
- C a negative balance of payments
- D a federal budget surplus

**85** Loans extended for longer periods of time often involve higher interest rates in order to

- A compensate the lender for greater risk
- B compensate the buyer for using savings to make a purchase
- C encourage consumers to buy durable goods for extended periods of time
- D encourage savings

**86** FIELD TEST ITEM

**87** FIELD TEST ITEM

**88** FIELD TEST ITEM

ECONOMICS

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89 FIELD TEST ITEM

90 FIELD TEST ITEM

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23



Appendix C

Institutional Review Board Letter



# The University of Georgia

Office of The Vice President for Research  
DHHS Assurance ID No. : FWA00003901

Institutional Review Board  
Human Subjects Office  
612 Boyd GSRC  
Athens, Georgia 30602-7411  
(706) 542-3199  
Fax: (706) 542-3360  
www.ovpr.uga.edu/hso

## APPROVAL FORM

**Date Proposal Received:** 2010-12-02

**Project Number:** 2011-10425-0

Name	Title	Dept/Phone	Address	Email
Dr. Wanda L. Stitt-Gohdes	PI	Dept. of Workforce Education, Leadership, and Social Foundations 225 River's Crossing +4809 706-542-4078		wlsg@uga.edu
Ms. Sarah Heath	CO	Workforce Education 770-131-0616	2108 Executive Drive Duluth, GA 30096	sheath@doe.k12.ga.us/kiloali@uga.edu

**Title of Study:** Educator Impact on Student Achievement in High School Economics

**45 CFR 46 Category:** Administrative 4  
**Parameters:**  
None;

**Change(s) Required for Approval:**  
Revised Application;

**Approved :** 2011-02-14 **Begin date :** 2011-02-14 **Expiration date :** 2016-02-13

*NOTE: Any research conducted before the approval date or after the end data collection date shown above is not covered by IRB approval, and cannot be retroactively approved.*

**Number Assigned by Sponsored Programs:**

**Funding Agency:**

Your human subjects study has been approved.

Please be aware that it is your responsibility to inform the IRB:

- ... of any adverse events or unanticipated risks to the subjects or others within 24 to 72 hours;
- ... of any significant changes or additions to your study and obtain approval of them before they are put into effect;
- ... that you need to extend the approval period beyond the expiration date shown above;
- ... that you have completed your data collection as approved, within the approval period shown above, so that your file may be closed.

For additional information regarding your responsibilities as an investigator refer to the IRB Guidelines.  
Use the attached Researcher Request Form for requesting renewals, changes, or closures.  
Keep this original approval form for your records.

Chairperson or Designee,  
Institutional Review Board