THE RELATIONSHIP OF SOCIOECONOMIC STATUS AND GATEWAY TESTS RESULTS

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The Relationship of Socioeconomic Status and Gateway Test Results

A Field Study

Presented to the

Graduate and Research Council of

Austin Peay State University

In Partial Fulfillment

Of the Requirements for the Degree

Education Specialist

Cheryl Cherry Richardson

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DEDICATION

This project is first dedicated to my son, Jereme Richardson. His wisdom and inner-strength are an inspiration to me. By the grace of God, he is wise beyond his years. Secondly, I would like to dedicate this project to my very best friends: Ms. Brenda Boyte, Ms. Jenny Simpkins and Mr. Mike Lockert, for without their constant support and encouragement this project may not have been completed. I owe a debt of gratitude to Dr. Samuel Jator who was long suffering and encouraging in my efforts. And last but not least, I dedicate this project to my Assistant Principal, Shannon Bryant. Her firm patience and her endurance for the extra work thrust upon her enabled the completion of this project.

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ABSTRACT

In the wake of the No Child Left Behind Act, the effects of socioeconomic status on the academic progress of students is a challenge many school districts face today. This study addresses the question of socioeconomic status of students and its possible relationship with the Tennessee Gateway Examinations—Algebra I, English II and Biology I. Related literature indicates the probability of academic success in elementary, middle and high school is predicted from family background and socioeconomic status. The data collected from a group of 408 12th grade students from a small, rural, Middle Tennessee County is analyzed in this study. There was no correlation found between the relationship of socioeconomic status and Gateway Test Results.

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CHAPTER I

INTRODUCTION

Historical Perspective

For over 40 years, educators, researchers and politicians have debated the causes and barriers related to student achievement. Since 1966, when sociologist James Coleman revealed his ground breaking study concerning the importance and value of a child's family background coupled with the socio-economic status of the family, experts have struggled with the relevance of these two variables.

The gaps of inequality as related to academic achievement remain 40 years after the study, as does the debate concerning causes and responsibility for change. The No Child Left Behind Act, 2002, (NCLB) an initiative promoted by President George W. Bush in 2001, holds districts and schools accountable for closing the achievement gap for those students who are economically disadvantaged as well as English as a Second Language students (ESL), minority and special education students. The primary focus of this piece of legislation is the raising of academic standards and decreasing the gaps between those students who are socially advantaged and those who are not. The plan embodies four main principles: stronger accountability, flexibility and local control, parental options and researched-based instruction.

With the new mandate from NCLB in place, school districts across the United States are focusing on teacher training to meet these goals, graduation requirements, exit exams and annual yearly progress. Some states have already begun to rethink their first initiatives. Ashford (2003) found the states of Florida and New York have already

enacted legislation to allow for alternative routes to receiving a high school diploma. One case researched by Ashford indicated one Massachusetts district used semantics or lack of semantics in the state guidelines to award students a diploma. The law states a student must pass the exit exams to be labeled a "graduate" but does not mention the word "diploma," therefore, the district remained technically correct when awarding students a diploma.

As other governing bodies across America wrestle with their own guidelines, the Tennessee Department of Education and Tennessee Legislators have worked toward satisfying the requirements of NCLB with input from educators. Goals for state schools in Tennessee are set by establishing an annual yearly progress (AYP) formula. To set the AYP target, 20% of students taken from the lowest-performing schools become the starting point (Tennessee Department of Education, 2005). By using these low-achieving students as a starting point, attention can be focused on those schools and students who are most in need of help (Weiner & Hall, 2004). Schools who fail to meet AYP on a continuing basis are subject to sanctions as severe as restructuring by the State Department of Education.

Can the American education system be the lone savior in conquering these gaps? Journalist George Wills reports that children from birth to 18 years of age spend 9% of their lives in school and 91% of their time outside of school (Bracey, 2004a). With so little time to influence the developmental success of these students, it is important to take into consideration the background experiences of these students. Those students who are economically disadvantaged may lack parental guidance, suffer from health related issues, receive poor instruction and lack the general motivation and social

skills to persevere. While these issues may seem insurmountable, NCLB requires educators and school systems across America to develop strategies to address the needs of these students. High schools across the nation are responsible for performance on exit exams, attendance, graduation rate and annual yearly progress. More specifically in Tennessee, the exit exams used are referred to as Gateway Examinations. Students must show proficiency in the following subject matter: Algebra I, Biology I, English II.

Statement of Problem

As a direct result of the implementation of No Child Left Behind, responsibility and accountability for the academic success of all students has become a primary concern for public schools across the United States. With special emphasis on academic achievement and federal mandated benchmarks each year, continuous evaluation of programs, curriculum and strategies to enhance the efforts of schools to reach these benchmarks must be evaluated for the organization to meet the federal law requirements. The socioeconomic status of students is a key ingredient that cannot be overlooked while working to attain these benchmarks. At this time, students from low socioeconomic backgrounds lag behind their more privileged peers in the area of academic performance (Wilson & Martin, 2000).

Purpose and Significance of Problem

For a school to obtain maximum results and meet annual yearly progress (AYP), certain variables that may prove to be of significant importance should be analyzed and carefully studied. The purpose of this study is to measure the impact of socioeconomic status upon a student's academic achievement. The results of this study may demonstrate some significance in the area of academic achievement as it relates to the

socioeconomic status of students. Information from this study will be analyzed and distributed to high school administrators to determine the significance of socioeconomic status on Gateway Examinations.

Research Questions

1) Is there a significant correlation in the Biology I Gateway results (advanced, proficient, below proficient) of high school students based on their socioeconomic status?
2) Is there a significant correlation in the Algebra I Gateway results (advanced, proficient, below proficient) of high school students based on their socioeconomic status?
3) Is there a significant correlation in the English II Gateway results (advanced, proficient, below proficient) of high school students based on their socioeconomic status?

Hypotheses

Hypothesis 1:

There is no significant correlation in the Biology I Gateway results (advanced, proficient, below proficient) of high school students based on their socioeconomic status.

Hypothesis 2:

There is no significant correlation in the Algebra I Gateway results (advanced, proficient, below proficient) of high school students based on their socioeconomic status.

Hypothesis 3:

There is no significant correlation in the English II Gateway results (advanced, proficient, below proficient) of high school students based on their socioeconomic status.

Limitations

This study will be conducted at the three high schools in a small rural Middle Tennessee county. The limited cultural diversity and poverty level may be considered a limitation of the study. The study is limited to three Gateway Exit Exams. The results analyzed are limited to only one academic year.

Assumptions

One may assume Gateway tests are a legitimate measure of academic achievement.

One may assume all teachers teaching Gateway subjects are certified in their respective content areas.

Definition of Terms

1. Successful academic achievement- receiving a "proficient" or "advanced" rating on the Gateway examination.
2. Low socioeconomic status- those students who qualified for the federally funded free and reduced lunch program.

CHAPTER II

REVIEW OF LITERATURE

Introduction

The relationship of socioeconomic status (SES) and student academic achievement was brought to the forefront of educational research during 1966, when sociologist James S. Coleman of John Hopkins University proposed a child's family background and SES were the two most important indicators in predicting academic success (Bracey, 2004b; Hoff, 1999). At the time, many believed the most important predictor of success was solely the quality and financial resources of the school (Kahlenberg, 2001). Upon publication of On Equality of Educational Opportunity, commonly referred to as The Coleman Report, educators began to view the issue of equality in education from a different perspective. While some researchers thought the study was limited, many studies after The Coleman Report validated the issue of higher achievement among students from middle-class schools as compared to those in poverty-centered schools (Kain & Singleton, 1996). Coleman surmised family and SES played such a vital role in academic development, neither monetary resources nor excellent curriculum options would contribute at any significant level to lessening the educational gaps (Bracey, 2004a; Kahlenberg, 2001).

Exit Exams

Since the inception of NCLB, state boards of education have been developing individualized state plans to meet the requirements of this federal law. According to the Center on Education Policy in 2003, approximately 19 states have implemented

mandatory exit exams as a graduation requirement and at least five more states have plans to implement the same requirements (Emeagwali, 2004). As states analyze and disaggregate data, the issue of poverty and its possible effects on academic progress must be carefully studied.

In compliance with TCA 49-1-608, the Tennessee Board of Education designated three end-of-course examinations, later to be called Gateway Exams, to be a caveat in Tennessee's public education accountability policy. The successful completion of these course exams (Algebra I, Biology I, English II) became a requirement of all high school seniors to receive a diploma. This requirement went into effect with the ninth grade class of 2001-2002 (Tennessee Department of Education, 2005).

Garcia (2003) studied the exit exam scores of four southwestern states: Arizona, California, New Mexico and Texas. While the culture and backgrounds of these four states share common characteristics which may limit the study, the author found poverty level students lagged behind their more privileged counter parts in the academic areas. The state of Georgia requires high school students to pass four graduation tests: English, mathematics, social studies and science. The 2004 state report card for Georgia indicates economically disadvantaged students are almost twice as likely to fail these tests as their more privileged peers (Georgia Department of Education, 2005). Tennessee's 2004 state report card indicates economically disadvantaged students as a whole are not meeting state requirements to receive a high school diploma (Tennessee Department of Education, 2005). As these aforementioned studies and reports indicate, reaching students of poverty is a growing concern in the world of education.

With all this concern over closing achievement gaps for students of poverty and other sub-groups, one must wonder whether these tests are a true measurement of academic achievement and whether the focus of these tests should be the real goal in educating our youth. Will the results of NCLB confirm that a quality education was received by all? Does passing an exit exam truly mean that grade level learning has taken place? According to Guisbond (2004), the threats of sanctions and punitive actions do not address the real problems. Children of poverty typically begin school behind and are often unable to "catch" up with their peers. While this bill has good intentions, it is viewed by many as a bill that hinders the process of educating our children. The NCLB act does not adequately support solutions toward addressing the consequences of living in poverty.

Defining Poverty

According to the U. S. Census Bureau (2002), poverty is on the rise. In 2001, the poverty rate was established at 11.7% rising in 2002 to 12.1% with the median household income declining 1.1% over the year. Poverty level, as defined by the U. S. Office of Management and Budget in 2002, was reported as earning below $18,392 in annual income for a family of four.

While the definition of poverty may have changed significantly since Coleman's day, the author's groundbreaking research study of 1966 implies the equality of opportunity as it pertains to life circumstances can be so influential school resources may not make a significant impact on the academic achievement of students from low socioeconomic circumstances. His research concerning the importance of a child's background and the importance of peer influence cause concern

for today's educators. Can the education system temper that which it does not control (Kahlenberg, 2001; Kain & Singleton, 1996)?

When defining poverty one must not forget the relativity of the issue. Students reared in low socioeconomic environments may find the classification of poverty as vague, especially students in lower grades of school. Children of poverty may understand hunger, living without material goods or not having the monetary resources to participate in activities of which their peers participate. However, many of these children possess an attitude of helplessness and lack the coping skills, social skills or resources to combat their limited environment which contribute to low academic performance. Grasping this abstract concept can even be difficult for high school students. This poverty mentality is prevalent in rural and urban areas across the United States (Payne, 1996). Payne further asserts with a few exceptions, many of these families have a code of ethics unlike the middle and upper class families. There are "hidden rules" concerning relationships, charity, options and change that affect the students coping ability and the ability to rise above his circumstances. Education and relationships are the key for these children to elevate themselves to the next economic class. Statistics taken from a recent study found that 24% of students living in large cities classify as children in poverty. There was a slight difference in those students living in rural areas near or in a small city. Approximately 10% were found to be living at the poverty level (Snyder & Freeman, 2003).

A family of low socioeconomic means may suffer from a variety of health problems, injuries, inadequate nutrition, and exposure to tobacco smoke or lack of immunizations. Cognitive attainment may be delayed due to these factors. Emotional

and psychological problems may ensue further complicating and perpetuating the child's academic deficits (Bradley & Crowyn, 2002). The school often serves as an extended family according to Fagan (2002). Fagan also suggests the emotional needs of the child must be met to help build resiliency. Resiliency in turn fosters hope.

The Cycle Begins

The effects of poverty begin before the child is born. Pre-natal care can sometimes be lacking in families dealing with poverty. Consequences of poverty after birth begin with the nurturing bond between mother and child. The lack of healthy coping mechanisms begins at an early age. Diener, Nievar and Wright (2003), examined both social and physical aspects of the home environment as related to attachment security among dyads of low SES mothers and their young children. The relationship between 74 participants and their off-spring were studied. The variable of cumulative family assets and its relationship with attachment security were found to be of a significant nature. It is thought the higher the income, the more availability of manipulatives (i.e. toys) and the higher the education of the mother, would contribute to the cognitive and social development of the child. After dividing the group into three sub categories, the lowest SES group was found to suffer lower attachment security. Depression, lack of resources and education may prohibit these mothers from receiving the pre-natal as well as post natal care their child needs. Viewing the world through insecure eyes can developmentally and emotionally delay children, impacting their academic success (Diener et al., 2003).

Readiness skills are at stake upon the child entering public school education. According to Lewis (2004), children of poverty entering kindergarten lack the readiness

skills to progress at the same rate as their peers. As children of poverty reach the third grade they have fallen behind their peers significantly. Unless intervention occurs, the cycle may perpetuate itself throughout the children's academic career. These children of poverty desperately need their social, emotional and physical needs met so they can learn and mature. Once these at-risk children reach high school, they are prone to fail classes, become discipline problems and drop out of school. Many parents of poverty lack the parenting skills to support their children in this manner. Therefore, the school and district must tackle this social phenomenon for the development of healthy children and to meet federal requirements.

By the time these children of poverty reach high school, they are at-risk of dropping out of school and never receiving a diploma. Exit exams are viewed as just another road block in their path to a diploma. Schiller and Muller (2003) investigated state exit exams/graduation requirements and their effect on curriculum choice, specifically in the area of mathematics. This particular study found in states requiring extensive testing, the gap increased for low performing students from low socioeconomic backgrounds. Those same students also took fewer advanced mathematics courses than the students from more affluent backgrounds. States requiring less testing indicated a smaller gap between the socioeconomic classes of students as related to advanced math opportunities and test scores. Testing is relative. In other words, a high incidence of testing contributed to a wider academic gap and less advanced math courses for students of low socioeconomic status. Frequent testing of these students may reinforce or perpetuate a feeling of hopelessness, contributing to low self-esteem. The cycle will continue if intervention from the school or supporting agencies does not occur.

Equal Ground

While Coleman predicted a wealth of financial resources poured into the school system would not significantly affect academic achievement, it is worthy to note the stratification of public institutions reflect society in general. Affluent communities have better equipped buildings, many times host a more experienced faculty, and hold higher academic expectations for their students (Howard, 2001). Students in more affluent communities are more apt to actualize the connection between school and success. Howard also points out less affluent communities tend to offer little support to schools and teachers causing students to make less of a connection with the importance of the educational process. A contributing factor to success is the unification of the community. Siding on most issues with Coleman, Wong and Nicotera (2004) agree that "equality of life chances" greatly influence the academic progress of all children noting effective teaching and better equipped buildings do affect the academic progress of black students more significantly than of white students. The study suggests since Brown v. Board of Education, the integration of schools has positively influenced black student achievement. Imazeki and Reschovsky (2003) suggest no significant difference in per pupil spending and academic performance exists upon comparison of rural and non-rural districts. The authors also suggest additional monies or creative strategies must be employed for rural districts to overcome these achievement gaps. Borman and Rachuba (2001) found evidence suggesting low achieving African American students who possess

an internal locus of control are capable of higher achievement. Again, resiliency is a product of this control.

Strategies for Success

To reach the goals of NCLB, to foster resiliency and to model academic excellence, schools effectively meeting the needs of low-income students must be carefully analyzed and studied. Bell (2001) emphasizes the important influence adults in the building have over the quality of instruction and curriculum received. According to the author, high-performing, high-poverty schools provide many of the same curriculum requirements as their more affluent counter-parts. What makes the difference is attitude, expectations and support for students inspired by the adults in the building. A culture of achievement is built through expectations and support systems.

While attitude, expectations and support are major components to success, specifically, it has been duly noted among educators that smaller class sizes, more and better resource materials and better trained or more highly qualified teachers would contribute to closing the achievement gaps (Bracey, 2004a). According to Bracey, high stakes testing for students and AYP has required teachers to stretch beyond their limits to meet accountability expectations. Professional development to aid teachers in pedagogical growth has been a primary concern for school districts. Can good teachers make a significant difference with these students of poverty? According to the findings of the original Tennessee Value Added Assessment System study as reported by Bracey (2004b), "effective teachers raise test scores and ineffective teachers diminish them"(p. 331). Bracey also reported findings confirming the effectiveness of effective teachers and the positive impact on low achieving students. In short, effective teachers raise test scores. Unfortunately, often schools in high poverty neighborhoods have inexperienced teachers who possess less than a master's degree (Wilson & Martin, 2000).

Can school climate play a part in raising test scores of low achieving students? School climate is an often over-looked factor in the success of schools. Because of the poverty environment, possible lack of guidance at home, and delayed cognitive development, the learning environment of the child can be a motivator in his academic success (Hoy, Smith & Sweetland, 2003; Worell, 2000). Hoy, Smith and Sweetland agreed a warm inviting building, a teacher's smile, well grounded boundaries and consistency are key components to the success of every child. To the child of poverty, the school may be a safety net, offering necessary ingredients to contribute to the child socially, emotionally and developmentally. Projecting hope and encouraging self worth are characteristics needed to survive and grow for the rest of one's life. Encouraging respect and challenging these students with a curriculum that is meaningful can help students discover things for themselves and outside of themselves. While it is difficult to measure school climate, students, parents and school staff seem to agree the positive perception of the school from the student's point of view helps to encourage learning and a general feeling of well-being (Hoy et al, 2003).

Encouraging good health and participation in school based extra-curricular activities can also be a motivation in the growth of the low socioeconomic student. Students of poverty often become involved in unhealthy activities such as drug use or illegal activities to fill the void of hopelessness and fear in their lives. Moderate exercise can contribute in a positive manner to the student's relationships and feelings of hopelessness which in turn have positive affects on academic achievement (Field, Diego & Sanders, 2001).

Under the right circumstances, involvement in sports teams can contribute to one's self-esteem. A feeling of accomplishment can serve to boost one's self worth. In a two year study published by Darling, Caldwell and Smith (2005), results indicate that extra-curricular activities play a small yet significant role in affecting grade performance. The need to belong is nourished through team involvement.

The human connection and the value of appreciation and recognition of accomplishment are significant issues most children desire to experience. Non-involvement or involvement in unhealthy activities appears to be a pattern in the lives of many students from low socioeconomic backgrounds. The challenge for schools to encourage extra-curricular involvement for this class of student is a difficult task. Cooper, Valentine, Nye and Lindsay (1999) focused on after school activities finding moderate involvement of students tends to raise academic achievement. One may assume the positive influence of others; recognition and release from boredom would also contribute to this academic success. The authors also indicated that over involvement in activities may cause a negative trend as related to that same achievement.

Conclusions

Economically disadvantaged students can succeed given the appropriate support system. Reis and Diaz (1999) examined young, urban female students who achieved in school in spite of poor home conditions. The purpose of the study was to recognize those factors which contributed to their success to help educators foster those same characteristics at institutions across the United States. Factors found to be significant were: belief in self, resilience, independence, sensitivity to others, appreciation of cultural diversity and a healthy support system within the school.

Nyhan and Alkadry (1999) confirm what many other studies have established. The socioeconomic background of the student is a strong predictor of academic outcomes. Schools alone can have some influence over this factor but additionally, creative community-wide support is also needed to overcome the gaps. The African proverb, "It takes a village to raise a child," certainly applies to academic reform. The school and the community must work together to inspire the success of our children.

CHAPTER III

METHODOLOGY

Overview

The results of Gateway Examinations were gathered from the permanent files of senior students at three high schools in a small rural Middle Tennessee county to investigate to what extent there is a difference between socioeconomic status and results on Gateway Exams. The free and reduced lunch list from the county board of education was used to define socioeconomic status. Students on this list qualified through application and must have met the following federal guidelines:

Free/Reduced Lunch Requirements

Household Size	Yearly	Monthly	Weekly
1	$ 17223	1436	332
2	23107	1926	445
3	28990	2416	558
4	34873	2907	671
5	40756	3397	784
6	46639	3887	897
7	58405	4377	1011
8	58405	4868	1124

(School Fee Waiver Form, Cheatham County, 2004)

Research Design

This descriptive study was designed to measure the correlation, if any, between socioeconomic status of students on the results of Gateway Examinations. This study used the results of the three required Tennessee Gateway Examinations contained in the permanent files of senior students from three high schools in the same county and the students' socioeconomic status as indicated on the qualification form for the federally

funded program of free and reduced lunch. Student's socio-economic status was determined by using the county's free and reduced lunch list.

Participants

Approximately 400 students' information was retrieved from their permanent folders. The information was retrieved from a heterogeneous group of approximately 250 girls and 150 boys. It was expected for approximately 25% of the students to classify as having low SES.

Procedures

The researcher, a supervisor from the board of education and a guidance counselor visited each high school to retrieve the information from the files of the senior students. Permission for this was received prior to the study from the school system. All 12th grade students who have taken the three Gateway Examinations were included in the study. Each student was assigned a number to insure anonymity. A master list was compiled by a guidance counselor. No names of individual students were included in the study. Data was collected on each student including Gateway results and socioeconomic status.

Data Analysis

A Chi-Square Test of independent means was performed to determine if a significant correlation exists in the students' Gateway results and their socioeconomic status.

CHAPTER IV

DATA ANALYSIS

Demographics

This study examined the relationship of socioeconomic status and the results of the three Tennessee Gateway Examinations in a small, rural, Middle Tennessee school system. This study began with a sample of 408 12th grade students for the 2004-2005 school year. The preliminary Pearson Chi-Square test revealed the expected frequency of the categories "low socioeconomic status" and "below proficient" would produce expected counts of less than 5 participants. Test results for these students were included in the study to give a more complete picture of the data.

After careful consideration concerning the inclusion of all 12th grade students, data from all 408 students from three high schools in a rural Middle Tennessee county were analyzed. Data from a heterogeneous group of students, including some enrolled in special education courses, were included. Students were classified as having low SES or average to above average SES. Results of the three Gateway Examinations were retrieved from the permanent files of each student. The Pearson Chi-Square independence test was used to analyze the data.

Statistical Analyses and Results

The data from the students' records was analyzed using a statistical software program called Minitab. This program computed a Chi-Square analysis indicating degrees of freedom (df) and the predetermined level of significance (p-value). The Chi-Square test was performed at the 5% significance level.

4.1. Algebra I Test Results and Participation in Free and Reduced Lunch Program.

ALGEBRA I (n = 408)

Economic Status	Advanced	Proficient	Below
Average	(n = 215) 52.70	(n = 98) 24.02	(n = 3) .74
Low	(n = 58) 14.22	(n = 32) 7.84	(n = 2) .49
Totals	(n =273) 66.92	(n = 130) 31.86	(n = 5) 1.23

Pearson Chi-Square = 0.639, DF = 1, P-Value = 0.424

In table 4.1, there are 92 total students who were classified as having low socioeconomic status and 316 students classified as average to above average in SES. A total of 90 SES students received an advanced or proficient rating on their Algebra I Gateway Exam. Only two low status students received a failing grade. A total of 313 average to above average SES students received an advanced or proficient rating on their Algebra I Gateway Exam with only 3 students receiving a failing grade. The p-value of 0.424 is more than .05, indicating there is no significant correlation between academic success on the Algebra I Gateway Exam and SES. Because the p-value is more than .05, the null hypothesis is accepted.

4.2 Biology I Test Results and Participation in Free and Reduced Lunch Program.

BIOLOGY I (n = 408)

Economic Status	Advanced	Proficient	Below
Average	(n = 239) 58.578	(n = 76) 18.627	(n = 1) .245
Low	(n = 68) 16.667	(n = 23) 5.637	(n = 1) .245
Totals	(n = 307) 75.245	(n = 99) 24.264	(n = 2) .49

Pearson Chi-Square = 0.042, DF = 1, P-Value = 0.83

In table 4.2, there are 92 total students who were classified as having low SES and 316 students qualifying as having average to above average SES. A total of 91 low SES students received an advanced or proficient rating on their Gateway Exam with only 1 student receiving a failing grade. A total of 315 average to above average SES students received an advanced or proficient rating on their Gateway Exams with only 1 student receiving a failing grade, indicating no significant correlation between academic success on the Biology I Gateway Exam and participation in the free and SES. Because the p-value is greater than .05, the null hypothesis is accepted.

4.3 English II Test Results and Participation in Free and Reduced Lunch Program

ENGLISH II (n = 408)

Economic Status	Advanced	Proficient	Below	
Average	(n = 199) 48.775	(n = 114) 27.941	(n = 3)	.74
Low	(n = 55) 13.480	(n = 36) 8.824	(n = 1)	.25
Totals	(n = 254) 62.255	(n = 150) 36.765	(n = 4)	.99

Pearson Chi-Square = 0.214, DF = 1, P-Value = 0.643

In table 4.3, there are 92 total students who were classified as having low SES and 316 students qualifying as having average to above average SES. A total of 91 low SES students received an advanced or proficient rating on their Gateway Exam with only 1 receiving a failing grade. A total of 313 average to above average SES students received an advanced or proficient rating on their Gateway Exam with only 3 students receiving a failing grade, indicating no significant correlation between academic success on the English II Gateway Exam and SES. Because the p-value is greater than .05, the null hypothesis is accepted.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

Summary

This study was conducted to determine any differences in academic achievement on the Tennessee Gateway Examinations of those students considered low socioeconomic status as compared to those students with average to above average status. The Algebra I, Biology I and English II Gateway Examinations were the instruments chosen as measures of academic achievement, while the SES factor was determined using the federally funded free and reduced lunch program.

Research Question One

The first research question proposed in this study asked if there would be a significant correlation in the Biology I Gateway results of students based on their socioeconomic status. The Chi-Square test administered indicated a p-value of greater than .05 in the statistical analysis denoting no significant correlation being found between variables. Therefore, it can be concluded that students whose economic status qualifies as "low" do as well as their peers who qualify with average or above socioeconomic status.

Research Question Two

The second research question proposed in this study asked if there would be a significant correlation in the Algebra I Gateway results of students based on their socioeconomic status. The Chi-Square test administered indicated a p-value of more than .05% in the statistical analysis denoting no significant correlation being found between variables. Therefore, it can be concluded that students whose economic status qualifies

as "low" do as well as their peers who qualify with average or above socioeconomic status.

Research Question Three

The third research question proposed in this study asked if there would be a significant correlation in the English II Gateway results of students based on their socioeconomic status. The Chi-Square test administered indicated a p-value of greater than .05% in the statistical analysis denoting no significant correlation being found between variables. Therefore, it can be concluded that students whose economic status qualifies as "low" do as well as their peers who qualify with average or above socioeconomic status.

Hypotheses

The hypotheses proposed in this study stated:

1. There is no significant correlation in the Biology I Gateway results (advanced, proficient, below proficient) of high school students based on their socioeconomic status.
2. There is no significant correlation in the Algebra I Gateway results (advanced, proficient, below proficient) of high school students based on their socioeconomic status.
3. There is no significant correlation in the English II Gateway results (advanced, proficient, below proficient) of high school students based on their socioeconomic status.

Based on the Pearson Chi-Square analysis of the data collected, hypotheses one, two and three are accepted.

Discussion

The total number of participants was 408 12th grade students. The Gateway results from these students were reported from three high schools in the same county. Students were divided into two categories: low socioeconomic status and average to above average socioeconomic status. Qualification in the federal free and reduced lunch program was used to classify economic status.

The findings of the research concerning any correlation between SES and Gateway test results are dissimilar to most literature reviewed for this study. The review of current and past literature beginning in 1960 with The Coleman Report indicated that higher achievement of students from middle-class schools as opposed to poverty-centered schools was the norm. The 2004 report cards for the states of Tennessee and Georgia support this theory showing a lack of progress among students of low socioeconomic status. (Tennessee Department of Education, 2005; Georgia Department of Education, 2005).

While this study for one small, rural county in Middle Tennessee does not support this theory, it is worthy to note that neither minority nor ESL students played a significant part in the statistical data due to the cultural make-up of the county. The impact of race, language deficiencies along with cultural/nationality differences may be one contributing factor to the high percentages. This particular county's socioeconomic status is moderately higher than the state average.

5.1 State and County Comparison of % Economically Disadvantaged Students

	Number of Economically Disadvantaged Students	
State	n = 433,763	49.9%
County	n = 1,869	28.5%

(Tennessee Department of Education, 2005)

Table 5.1 illustrates the vast difference between the State of Tennessee demographic of low SES students and the rural, Middle Tennessee County demographic. As shown, the state numbers are significantly higher than the county numbers which could possibly contribute to the reported academic success of the county.

On checking the disaggregated data of Math and English, and comparing the county and state, economically disadvantaged students perform far better than the state average. Again, this performance level may be due to the lack of cultural differences in the county.

5.2 Disaggregation of State and County Economically Disadvantaged

	County		**State**	
	% Below Proficient	**% Proficient & Advanced**	**%Below Proficient**	**%Proficient & Advanced**
Math	9.0	91.0	33.0	66.0
English	11.0	89.0	18.0	82.0
Science	Not Available			

(Tennessee Department of Education, 2005)

Table 5.2 illustrates the significant gap in academic achievement of economically disadvantaged students between the State of Tennessee percentages and the county studied. Again, the high number of students across the state qualifying with low SES (49.9%) as compared to the reasonably small number of students in the county researched (28.5%) may explain the discrepancy in the academic gap and contribute to the county academic success on Gateway Examinations. Biology I scores are not disaggregated or reported on the state or county report card.

Recommendations

The conclusions gathered from the research in this study indicated that no significant correlation existed between the academic progress on Gateway tests and SES. It is recommended that another study be undertaken to concentrate on ascertaining possible factors influencing the academic success of the students in this school district. While the lack of cultural diversity does exist and while the disadvantaged student percentage is approximately 21% below the state average, other variables may enter into the academic success of this county, such as teacher effectiveness, teacher experience, school climate, effective leadership, involvement in extra-curricular activities, support programs and community/parent involvement.

Weaknesses of this study included the lack of cultural diversity in the population studied and the method of assigning students economic status. The Middle Tennessee County studied dealt primarily with Caucasian students, with less than 1% African American population or Hispanic population being involved. The assignment of SES using the federally funded free and reduced lunch program would be a better measure for this study if student records had been checked for application at any time during their

four years of high school. For this study, qualification was checked only during the student's senior year of high school. It is thought that many students drop from the program after their 9th or 10th grade year because of pride or embarrassment. While some family's economic status may change over the course of four years, it is thought by school officials that the poverty rate is higher than the information gathered for this study which could significantly impact the results of future studies.

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APPENDICES

AUSTIN PEAY STATE UNIVERSITY
APPLICATION FOR APPROVAL OF RESEARCH INVOLVING HUMAN SUBJECTS

Please read the entire application before completing. Students must fill out a *Graduate Student Research Approval Form* and attach it to this application.

TITLE OF PROJECT: **The Effects of Socioeconomic Status on Gateway Test Results**

TITLE ON CONSENT FORM (If different than above):

FUNDING SOURCE: **No Funding Needed**

PRINCIPAL INVESTIGATOR

Name: **Cheryl C. Richardson**

Status: Faculty ____ Staff ____ Graduate Student __x__ Undergraduate Student ____

Department: **Education** Phone: **615-792-0528**

Mailing Address: **P.O. Box 107, Chapmansboro, TN 37035**

Email Address: **richardsonc@cheatham.k12.tn.us**

FACULTY SUPERVISOR

Name: **C. Hardin** Department: **Education**

Mailing Address: **P. O. Box 4545**

Phone: **931-221-7593** Email address: **hardinc@apsu.edu**

All of the questions below should be answered using lay language. The IRB is comprised of individuals from diverse scientific and nonscientific backgrounds. You should avoid all jargon and assume that IRB members have no prior knowledge on the research topic, theoretical or methodological approaches, or measurement techniques or instruments. The best way to avoid unnecessary delays is to provide the IRB with as much information about your study as possible. **You will need to attach a copy of all demographic forms, survey instruments, and other data collection systems.** If you are unable to attach the above please contact the Office of Grants and Sponsored Programs for advice. It is important to remember that informed consent is a process not a document. Informed consent begins with recruitment and ends only after a study is completed.

1. **Describe the purpose of this study.** Be sure to clearly indicate the research question being asked.

The primary importance of this study is to examine whether there is a statistically significant impact of socioeconomic status of students on high school Gateway exam results.

Gateway exams are high school exit tests and a passing grade on these tests is a requirement to receive a diploma in the state of Tennessee. The results of this study may prove significant in recognizing the problem and seeing the need for creative solutions to help high school students reach success in the areas of: Algebra I, Biology I, and English II.

Information gained in this study can be used by educators to improve the pass/fail rate of the Tennessee Gateway Examinations.

The research questions are:

1. **Is there a significant difference in the Biology I Gateway results of high school students based on their socioeconomic status?**

2. **Is there a significant difference in the Algebra I Gateway results of high school students based on their socioeconomic status?**

3. **Is there a significant difference in the English II Gateway results of high school students based on their socioeconomic status?**

2. **Briefly describe the research that has already been conducted in this area.** The IRB needs to understand how this study adds to the knowledge on this topic in order to be able to judge the risks and benefits to participants.

Coleman, (1966); Nyhan & Alkadry, (1999); Snyder & Freeman, (2003) all agree that a child's background, including socioeconomic status and his peer group are the two most important factors influencing a child's academic success. Public Law 107-110, otherwise known as No Child Left Behind, was created to address these academic gaps in student progress.

Gaps in academic attainment across the United States do exist according to Reis & Diaz, (1999); Weiner & Hall (2004); Wilson & Martin, (2000). These authors maintain that too often a focus on high achieving students has been the priority rather than helping to build resilience in minorities and socioeconomically challenged students.

According to Tennessee's High School End-of-Course Tests Policy, all students entering the 9th grade in 2001-2002, must successfully pass Gateway Exams in three subjects: Algebra I, Biology I and English II. These tests are required to receive a high school diploma. (http://www.state.tn.us/sbe/highschooltests.html)

3. **Describe the population from which your research sample will be drawn.** Be sure to indicate if subjects are from a vulnerable population such as infants, children, pregnant women, mentally disabled persons, prisoners, employees, students, economically or educationally challenged persons etc...). What additional safeguards will be included to protect the rights and welfare of these participants?

Data will be collected from existing student records on 12th grade students who have taken the three Tennessee Gateway Exams at least once. Socioeconomic status will be determined using the free/reduced lunch list found at the Cheatham County Board of Education. To protect the anonymity of these students, random numbers will be assigned to names as quickly as the information is retrieved from the students' permanent file. Names will be destroyed as soon as a number is assigned.

4. Explain the inclusion and exclusion criteria that will be used (e.g., age, race, gender, language, academic abilities, academic major, pre-existing conditions, etc....).

Included in the study will be all of the Gateway test results of 12th grade students at the three high schools in the Cheatham County School District (Cheatham County Central, Harpeth, Sycamore). Information will be gathered only from the files of those 12th grade students who have taken the three Gateway Exams. Excluded from this study will be those students who are not required to take the Gateway Exams. Those students are the severely handicapped students who are required to take the TCAP-Alt test in place of the exit exams.

5. **Indicate how many potential participants will be approached.** The APIRB needs to know the maximum number that might be asked to participate, NOT the minimum number needed to adequately ask the research question. It is recommended that you choose a number higher than you expect to need because once the number is approved you will need to apply to the IRB for permission to recruit additional participants. Do not choose an unnecessarily large number however, because sample size may affect the risk/benefit ratio decision that the IRB must make. Please break down your maximum numbers by category (e.g., child, adult, male, female, depressed, non depressed etc...) such that the board can evaluate the risks for different types of participants.

Information from the records of approximately 400 12th grade students from the three high schools in the Cheatham County School District will be gathered. The information gathered from each file will include Gateway results from all three tests (Biology, Algebra, English) and socioeconomic status will be assigned using the free/reduced lunch list from the Cheatham County Board of Education.

6. **Describe how participants will be identified, approached, recruited and consented.** Who will make the first contact and when and where will it occur. All materials used to recruit participants need to be submitted for review (e.g., media advertisements, brochures, email, poster/signs or sign-up sheets, etc...). If verbal announcements will be made for recruitment purposes please provide a script of how the study will be described or a list of the points that will be made.

The retrieval of this information will occur during the month of June, 2005. Once the information has been gathered from the permanent files, a number will be assigned in place of each student's name to insure anonymity. The Secondary Supervisory of Education for Cheatham County will be helping to retrieve the information needed from the files.

7. **Specifically identify all individuals who will describe the study to potential participants. Also, specifically identify all individuals who will obtain consent from potential participants.**
Do these individual(s) have a dual relationship with potential participants (e.g., instructor, mentor, employer, caregiver, etc...) that might create the potential for the perception or actual existence of coercion or undue influence? What procedures will you put in place to reduce or eliminate potential/perceived coercive situations?

No consent was needed from students or parents.

8. **Describe your research procedures.** We need to know all of the procedures that will occur, but in particular we need a description of what the participants will experience. For example, a description of the instructions that will be given to them, activities in which they will engage, the length and timing of involvement, and the circumstances under which they will provide data (i.e., group assessments, one-on-one interview, videotaping, audio taping, phone calls, spending time in an uncomfortable position, etc...).

I, along with Dr. Alvin Rose, Secondary Supervisor of Education for Cheatham County, will visit each high school to retrieve information from each 12th grader's permanent file. No information will be taken from the file of any student who has not taken the Gateway Exams. All Gateway results will be retrieved and a socioeconomic status will be assigned according to the free/reduced lunch list.

Once this information has been gathered, a number will be assigned in place of the student's name to insure anonymity. A Chi-Square test of independent means will be performed to determine if a significant difference exists in a student's Gateway scores based on his/her socioeconomic status.

The research design will be descriptive research used to determine effect or non-effect of socioeconomic status on Gateway Exam results.

No survey will be used. Only information from the student's cumulative folder and the assignment of socioeconomic status will be used for this study.

The Tennessee Gateway Exams are published by McGraw-Hill.

9. **If this study involves deception, describe and justify its use.** Deception will require that subjects be debriefed following data collection. The purposes of the debriefing are to explain the true purpose of the study, reduce any negative consequences participants may experience from participation and to provide a clear, easy opportunity for withdrawal of consent. You must include a copy of the debriefing statement in your application.

This study does not involve deception.

10. **Describe any form of compensation that participants will receive (e.g., money, extra credit, toys, food, etc...).** If so, please describe amount, type, when they will receive it. If withdrawal from the study will change the amount or type of compensation please describe how (i.e., prorated, elimination, etc...). Note that academic extra credit can only be awarded at the discretion of the instructor, not the principal investigator.

No compensation will be given.

11. **Explain if this research might entail psychological, legal, physical, or social harm or discomfort to the subjects.** What steps have been taken to minimize these risks? What provisions have been made to insure that appropriate facilities and professional attention necessary for the health and safety of the subjects are available and will be utilized? How will the participants be informed of these procedures? If an information sheet describing these resources will be provided to participants, please submit. If university or community professionals agree to provide their services, please submit a letter of cooperation from the individuals/agencies that describes the agreement.

It is expected that no harm will come to any individual students.

12. **Describe how the potential benefits of this activity to the participants and humankind outweigh any possible risks.** This opinion is justified for the following reasons:

Permission to use information from the permanent file and to use the list of free/reduced information was gained from the Secondary Supervisor of Education and initialed by the Interim Director of Schools for Cheatham County, Ms. Lynn

Seifert. Anonymity is guaranteed through the assignment of numbers in place of names.

13. **Describe how the confidentiality of data about participants will be protected.** What steps and procedures will be used? How (hard copy, electronic, etc...) and where (e.g., locked file cabinet in PIs campus office) will data be stored? If data will be destroyed please indicate when and how.

The information used in this study from these students will help identify any significant academic gaps that may exist between social classes. Recognizing any existing problem and developing strategies for this caliber of student may contribute to their successful completion of high school.

14. **If data will be anonymous, explain how this anonymity will be achieved.** Note that anonymity requires that at no time can the data be connected to the participant by anyone involved in the research, even the PI. If data will be anonymous, explain how and where the consent document will be stored.

Anonymity will be achieved by assigning a number in place of a students' name once the information has been retrieved from the file and social class has been assigned. All information gathered concerning students will be stored in Dr. Carlette Hardin's office on the campus of Austin Peay State University.

15. **Explain how any data collected relate to illegal activities.**

No data collected will relate to any illegal activities.

16. **Please indicate by marking Y(es) or N(o) whether the attached informed consent document includes each of the following elements as required by the Code of Federal Regulations: Tile 45, Part 46.116.**

__Y__ A statement that the study involves research,

__Y__ an explanation of the duration of the subjects participation,

__Y__ a description of the procedures to be used;

__Y__ A description of any reasonably foreseeable risks or discomforts to the subject;

__Y__ A description of any benefits to the subject or others which can be reasonably expected from the research; *(Note: compensation is not a benefit)*

__Y__ A statement describing the extent, if any, to which confidentiality of records identifying the subject will be maintained;

__Y__ An explanation of whom to contact for answers to pertinent questions about the research and research subjects' rights, and whom to contact in the event of a research related injury to the subject; *(Note: should include APIRB, PI and if applicable, students' faculty sponsor)*

__Y__ A statement that participation is voluntary, refusal to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled, and the subject may discontinue participation at any time without penalty or loss of benefits to which the subject is otherwise entitled. *(Note: this statement should be written in language at an appropriate level for the subjects in your study).*

__NA__ No consent form is needed since all data will come from existing information.

The following may or may not apply your study. Please carefully read and mark each one Y(es) or N(o).

__N__ An explanation of whom to contact in the event of a research related injury to the subject;

__N__ A disclosure of appropriate alternative procedures or courses of treatment, if any, that might be advantageous to the subject;

__N__ For research involving more than minimal risk, an explanation as to whether any compensation and an explanation as to whether any medical treatments are available if injury occurs and, if so, what they consist of, or where further information may be obtained;

__N__ A statement that the particular treatment or procedure may involve risks to the subject which are currently unforeseeable;

__N__ Anticipated circumstances under which the subject's participation may be terminated by the investigator without regard to the subject's consent;

__N__ Any additional costs to the subject that may result from participation in the research; *(Note: This is not limited to monetary costs)*

__N__ The consequences of a subject's decision to withdraw from the research and procedures for orderly termination of participation by the subject;

__N__ A statement that significant new findings developed during the course of the research which may relate to the subject's willingness to continue participation will be provided to the subject; and

__Y__ The approximate number of subjects in the study.

17. **If your study includes children please provide the committee with information about how you will obtain the child's assent to participate.** Children older than 12 are expected to be provided the opportunity to sign to indicate their assent to participate. Children 7-12 should be provided with a written document, which may or may not also be read. Depending on the research to be conducted children 6 years and younger may be read an assent script (please submit). In addition to your procedures to obtain assent, please indicate what dissent behaviors will lead you to decide a child is not providing or has withdrawn his/her assent to participate. Note: child assent can be solicited only after parental consent has been obtained.

Only existing data will be used. No individual children will be contacted and no individual child will be identified.

18. **If you are requesting a waiver of the documentation of informed consent please explain how you would meet the requirements of 45 CFR 46.117.**

There will be no waiver needed.

I have read the Austin Peay State University Policies and Procedures on Human Research (00:002) and Research Misconduct (99:013) and agree to abide by them. I also agree to report to the Austin Peay Institutional Review Board any unexpected events related to this study. I also agree to receive approval before implementing any changes in this study.

_____ _____

Signature Date

_____ _____

Faculty Supervisor's Signature Date

VITA

VITA

Cheryl C. Richardson was born in Nashville, Tennessee during the era of the Baby Boom. She was educated at Glencliff High School, David Lipscomb College and Austin Peay State University. She possesses a Bachelor of Arts Degree in Education and is certified to teach in the following areas: all business subjects, elementary education and secondary English. She received her Master's Degree in Curriculum and Instruction in 1996 and added her Administration and Supervision certification in 1997. She is the first female high school principal in the Cheatham County School District.