# Significant Differences in the Identification of Gifted Students Among Ethnic Groups

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ABSTRACT

There have been consistent disparities among ethnic populations in the identification of students for gifted education. Specifically, African American and Hispanic students have been underrepresented in gifted programs, but Caucasian and Asian students have been overrepresented as compared to overall enrollment of each of these groups. The State of Georgia has policies in place to identify students through two pathways in order to reach as many students as possible. These two pathways include Option A, or traditional identification of gifted students through mental ability and achievement only, and Option B, or multiple criteria identification including mental ability, achievement, creativity, and motivation. The purpose of this study was to analyze the patterns of identification in order to better understand the qualities or characteristics that were specific to particular student populations for more effective, efficient referral practices.

The researcher employed a non-experimental design using archival data from students tested for gifted education, both those who qualified and those who did not qualify for services. The researcher used One-Way MANOVA to determine any significant mean differences in performance for African American, Asian, Caucasian, Hispanic, and "Other" students. The researcher also analyzed the percentages of African American, Asian, Caucasian, Hispanic, and "Other" students who were served for gifted education to determine how those percentages were reflected in the total population of the schools.

This study had numerous findings. The most significant were: a) Caucasian students scored higher on tests of mental ability and achievement and had a higher number of students qualify than expected, b) African American students scored lower on

mental ability and achievement tests and had a lower number of students qualify through Option A than expected, c) more students overall qualified through Option B thus supporting the use of Multiple Criteria to increase enrollment of gifted students.

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# Chapter I

## INTRODUCTION

Gifted children are one of the most highly underserved populations in our schools (Robertson, Pfeifer, & Taylor, 2011). Although all students should be meeting at least a minimum level of achievement, high levels of achievement and performance from gifted students is critical for the future success of our nation (Olszewski-Kubilius & Clarenbach, 2012). Research has shown that highly intelligent and/or gifted individuals become eminent professionals in adulthood (Simonton & Song, 2009).

Yet, in many regular classrooms, gifted students finish early, are not challenged, and are left to their own while teachers are busy working with lower ability students (Scot, Callahan, & Urquhart, 2009). They are often overlooked or used as tutors for the rest of the class. In one recent study 65% of teachers reported that their courses focused very little on teaching advanced students, and 32% of teachers said that advanced students were a low priority in their schools (Farkas & Duffett, 2008). However, gifted children have special needs that must be addressed through special services to the extent that students with learning disabilities are served (Morisano & Shore, 2010). Dr. Sylvia Rimm in her book *Why Bright Kids Get Poor Grades* stated, "Schools and teachers can make dramatic differences in children's achievement" (Rimm, 1995, p. 95). She detailed the differences in classroom environments that hinder bright kids from achieving and the types of environments that enrich achievement for bright students. The key to enriching the educational progress of these high ability students is through providing classrooms that foster positive achievement and through adequately and accurately identifying these

students for gifted services. Once identified, schools can more adequately provide enriched educational services to gifted students. It is, therefore, critical that high ability students are given opportunities in public education to be challenged to perform at their highest levels.

Even more disquieting, gifted children from some minority populations are less likely to be identified or receive gifted services in the first place. For example, the U.S. Office for Civil Rights (2012) reported data of high schools with the highest enrollments of African American and Hispanic students. It found that only 29% of those schools offer calculus and only 40% offer physics. A further look into the data from the U.S. Office for Civil Rights (2014) revealed that in the 2011-2012 school year, the total population of students enrolled in gifted education was 11%. However, of the total percentage of each individual student populations, 16% of the total White student population were enrolled; 25% of the total Asian student population were enrolled; 5% of the total African American student population were enrolled; 5% of the total Hispanic student population were enrolled.

## Statement of the Problem

The problem with identifying students for gifted services is that a lack of understanding of gifted characteristics often results in a misrepresentation of the gifted population (Chamberlain & Chamberlain, 2010, Pierce et al., 2007; Weber, 1999). Adding to the misunderstanding of gifted characteristics is the lack of a uniform definition of giftedness (Robertson et al., 2011). To be identified for gifted services, students must be referred by teachers, parents, or by automatic referral based on academic achievement. When those making the referrals or administering the screeners

do not have a clear understanding of gifted characteristics, two problems typically occur: underrepresentation and overrepresentation of certain student populations in gifted education (Ford & Whiting, 2008). For example, based on the U.S. Office of Civil Rights Data (2014), Asian students were represented 14% above the total enrollment and White students were represented 5% above the total enrollment. However, African American and Hispanic students were each represented 5% below the total enrollment percentage. So, why is there a consistent disparity in the representation of gifted students among ethnic populations? Possible explanations include: The lack of understanding of true gifted characteristics on the part of parents and teachers that hinders adequate referrals (Pierce et al., 2007; Weber, 1999), and inconsistencies in the referral process, specifically in screening, identification, policies, and procedures (Ford & Whiting, 2008). The researcher looked for patterns of qualification within each subgroup to see if there were common characteristics to enhance the recruitment of gifted students.

## Purpose of the Study

The purpose of this study was to identify patterns in gifted qualification, whether qualifying through Option A or B (traditional Psychometric Approach or Multiple Criteria Approach) according to the criteria put forth by the State of Georgia, among African American, Asian, Caucasian, Hispanic, and "Other" subgroups. The researcher also sought to determine if any significant differences existed within each of the four gifted areas of mental ability, achievement, creativity, and motivation by subgroup based on specific scores from approved assessments within each area. And, finally, the researcher sought to determine if the percentage of students who were served for gifted

education reflected the total enrollment of the subgroups defined as African American, Asian, Caucasian, Hispanic, and "Other" in this South Georgia school system.

## Conceptual Framework

There are opposing behaviors that seem to contradict the definition of giftedness; behaviors such as high level thinking and concept based questioning are often times accompanied by disorganization, mess, and little thought to routine (Weber, 1999). These types of behaviors are frustrating to teachers and at times result in students being overlooked when referrals for gifted testing are presented. A study conducted on the effectiveness of teacher referrals shows that students who were nominated by teachers were identified as gifted only 44.3% of the time (Daglioglu & Suveren, 2013); less than half of the students that teachers referred for testing were ultimately identified as gifted. Teacher observation forms have been shown to be ineffective in identifying gifted students (Powell & Siegle, 2000; Torrance & Caropresso, 1998). Many students, according to Freiman and Rejali (2011), sit in classrooms unnoticed and become underachievers. This perpetuates the problem of identification because students who do not perform at high levels in the classroom are not referred for the very services they need to motivate them to achieve. In other words, certain positive behaviors in the classroom such as participating or engaging in classroom discussion, organizing time and materials, and submitting quality work in a timely manner may be falsely attributed to students as giftedness, while those students who do not display these specific behaviors are not identified as gifted (Curby, Rudasill, Rimm-Kaufman, & Konold, 2008). In contrast, Weber (1999) stated that some common characteristics of giftedness including disorganization, boredom in the classroom, and lack of motivation for rote factual work

are the very characteristics that will deny the services that they need. However, other studies have shown that when teachers are given a clear checklist of behaviors associated with giftedness, then teacher referrals are ranked only second to qualifying test scores as being the most effective resource for referral (McBee, 2006).

Because of inconsistencies in the referral process and lack of understanding of gifted characteristics, students who should be in gifted programs are often missed (Pfeiffer, Petscher, & Kumtepe, 2008). Research revealed a distinct underrepresentation of specific sub-groups of student populations in gifted programs (Ford, Scott, Moore, & Amos, 2013). The African American and Hispanic populations are such examples of underrepresented sub-groups. When compared to the percentage of these students in the total school population that offered gifted services, both the African American population and the Hispanic population were underrepresented by 9%; furthermore, there has never been a time in gifted history when the African American population and the Hispanic population have been proportionately represented (Ford et al., 2013).

Students of high ability who have already mastered the basic curriculum should not have to suffer through lessons without any opportunities to expand their thinking, research, or creative expression (Morisano & Shore, 2010)—all skills that will be required for university success, high level positions in adulthood, and professions which require university degrees (Simonton & Song, 2009). The fault is not completely on the classroom teacher for this lull in educational opportunities for the gifted. It has been found that differentiated strategies manifest themselves in forms of remediation and mastery more than that of enrichment or acceleration for high achieving and gifted students (Scot et al., 2009). Due to the demands and pressure of standardized testing and

accountability, curriculum in the regular classroom is focused on drill and practice, basic skills, and tested material with a lack of high level critical thinking skills or creative expansion of thought (Scot et al., 2009). These basic skills do little to perpetuate the growth or achievement of high ability students (Olszewski-Kubilius & Clarenbach, 2012). Students in these situations are not given the opportunities to learn and practice critical thinking skills. In turn, many students may not be displaying gifted traits in a recognizable manner. This problem can affect both the process of student referral for gifted testing and the outcome of the teacher rating scale used as one of the four tests for gifted identification (Moon, Brighton, & Callahan, 2002).

High achieving, highly intelligent, highly motivated, and/or highly creative students need to be in an environment that fosters their special needs for acceleration, enrichment, or specific instruction. But, to serve them, they must first be identified. Identification of gifted students must be accurate and efficient so that students who are mastering the common curriculum and need enrichment can be served in a gifted environment.

## Theoretical Framework

Definitions of giftedness have changed over the years. Joseph Renzulli (1978) described the continuum of gifted definitions as "ranging from 'conservative' to 'liberal' i.e., according to the degree of restrictiveness used in determining who is eligible for special programs and services" (p. 180). Lewis Terman's (1925) definition of giftedness would fall at the conservative end of the continuum due to minimal and restrictive criteria. He attributed giftedness to those students or individuals who score at the top 1% on the Stanford-Binet Intelligence test. However, a more liberal view of giftedness came

from Paul Torrance (1962) who asserted that giftedness involved more than simply an IQ score. He added creativity to the defining characteristics for gifted testing and gifted programming. Joseph Renzulli's Three-Ring Model of Giftedness (1978) included a third dimension along with creativity and intelligence: task commitment or motivation. These historic definitions were critical influences in the development of the Georgia definition of giftedness.

Social and historical factors informed the development of gifted recognition and education as much as did the prevailing research. If the United States was going to conquer the final frontier it needed to quantify and qualify the best and brightest. As if on cue, the United States also began to take a good look in its own backyard. The Civil Rights Movement caused educators to reexamine the quality of the education for all students (Tannenbaum, 1983). The social upheaval of the late sixties and early seventies called for a radical change from the conventions of the past. The renewed patriotism of the eighties once again ignited the desire for America to shine. The fall of communism at the dawning of the decade of the nineties revealed global implications. The prosperity and technological revolution of the remainder of the decade opened up not only new possibilities, but created new career paths. All of these factors converged to reveal a need for a comprehensive approach to gifted identification and education. This need informed by decades of solid research led to the creation of a multi-faceted approach. This led the State of Georgia, in 1995, to adopt Rule 160-4-2-.38 which established the guidelines for multiple criteria gifted testing measuring mental ability, achievement, motivational, and creative indicators (Felton, 2008).

Before this time, gifted testing in the State of Georgia tested gifted students on mental ability alone. However, there were a group of educators who began to look at the number of minority students being missed for gifted services (Frasier, Garcia, & Passow, 1995). Through research and much revision, the Multiple Criteria Approach to gifted testing was adopted in the State of Georgia as Rule 160-4-2-.38 which opened the guidelines for gifted testing to include mental ability, achievement, creativity, and motivation (Georgia Department of Education, 2014). Another facet of this Multiple Criteria Rule is that students could now be assessed through the use of product, portfolios, checklists, and observations. This process began to show a great increase in the numbers of minority students being represented in gifted programs in the state. These guidelines are still in effect today.

Currently, there are two options for gifted testing and qualification in the State of Georgia: the Psychometric Approach (Option A) and the Multiple Criteria Approach (Option B). The Psychometric Approach (Option A) is the traditional method of qualification where students who qualify on the tests of mental ability and achievement are eligible for gifted programming. The Multiple Criteria Rule is for students who qualify on either mental ability or achievement who must also meet criteria on creativity and motivation, thus qualifying in three of the four areas of testing (Georgia Department of Education, 2014). (See Appendix A for a flowchart of this process).

## Research Questions

1. Are there significant mean differences in the combination of qualifying gifted criteria among African American, Asian, Caucasian, Hispanic, and "Other" students in kindergarten through fifth grade?

2. Are there significant mean differences in the specific qualifying scores of African American, Asian, Caucasian, Hispanic, and "Other" students on each of the four areas of mental ability, achievement, creativity, and motivation among kindergarten through fifth grade students?
3. Are there significant frequency differences in the percentage of students in gifted programs as compared to the overall school population among African American, Asian, Caucasian, Hispanic, and "Other" students in kindergarten through fifth grade?

## Definition of Important Terms

Key terms used in this study were:

Achievement: A student's level of performance on a norm-referenced test that includes a reading score and a math score or on a product as evaluated by a panel of qualified evaluators (Georgia Department of Education, 2014).

Creativity: A student's level of performance on a norm-referenced test that provides scores of fluency, originality, and elaboration (Georgia Department of Education, 2014).

Gifted Student: One who demonstrates a high degree of intellectual and/or creative ability(ies), exhibits an exceptionally high degree of motivation, and/or excels in specific academic fields, and who needs special instruction and/or special ancillary services to achieve at levels commensurate with his or her abilities (Georgia Department of Education, 2014).

Mental Ability: A student's measure of intelligence or cognitive ability on a norm-referenced assessment (Georgia Department of Education, 2014).

Motivation: The measure of focused behavior, student-generated products or performances as determined by structured observation or evaluation by a panel of qualified evaluators on a standardized rating scale (Georgia Department of Education, 2014).

Multiple Criteria Approach: Qualification into gifted education by meeting set requirements in three of the four areas of gifted testing: mental ability, achievement, creativity, and/or motivation (Georgia Department of Education, 2014).

Psychometric Approach: Qualification into gifted education by meeting set requirements in mental ability and achievement only, although evaluation data is still required for the subsequent categories of creativity and motivation (Georgia Department of Education, 2014).

## Procedures

This study was set up as a non-experimental design using Multivariate Analysis of Variance, or One-way MANOVA in order to evaluate archival data from the different ethnic groups (independent variable) in each of the four areas of gifted testing: mental ability, achievement, creativity, and motivation (dependent variables). MANOVA is similar to the *t* test and single analysis of variance with the major difference being the number of dependent variables assigned to each group. MANOVA is used when more than one dependent variable is analyzed, as is the case in this study (Gall et al., 2003). The researcher separated the student records of all students who were assessed for giftedness into four major groups: African American, Asian, Caucasian, and Hispanic. Students not identified with one of these ethnic populations were added into a fifth group defined as "Other." The researcher used qualifying and non-qualifying scores from

students in kindergarten through fifth grade from the 2010-2011 academic year through the 2014-2015 academic year due to the availability of data as well as the consistency of the tests used in each of the grade levels. The data from these records were then analyzed for performance on each of the four areas of gifted testing using only the most recent data from students who tested multiple years. The researcher looked to identify patterns of performance within each ethnic group of students for achievement on particular areas of giftedness. The researcher sought to identify the test(s) where each subgroup tended to excel as well as identify the pattern for qualification into the gifted program, either through the Psychometric Approach or the Multiple Criteria Approach through the use of a chi-square analysis. The chi-square test is a nonparametric statistical test often used to determine how the observed frequencies compare to the expected frequencies, or to determine how the frequency counts are distributed differently for different samples (Gall et al., 2003). The researcher then analyzed the data to determine if the population of each subgroup reflected the population of the school.

The researcher applied for approval from the Institutional Review Board (Appendix D) and the Local School Board (Appendix E) before obtaining student data. The Institutional Review Board approved this study through exemption status because there was no interaction with human subjects and the identity of each student record was not used but only the demographic information and data. The student records were assigned a random number, and the data were entered into a spreadsheet for the strict purpose of the study.

## Significance of Research

Addressing issues of adequately and appropriately representing all student subgroups in gifted programming should begin with redefining the process of recruitment (Ford & Whiting, 2008). Recruitment of gifted students, at its core essence, must begin with a clear understanding of the characteristics of giftedness. In Georgia, gifted characteristics are defined as mental ability, achievement, creativity, and motivation. The researcher sought to analyze the data to determine if there was a significant pattern of qualifying scores associated with any of the subgroups of students identified. The patterns found for one or more of the subgroups would add to the body of knowledge for recruiting students by training referral coordinators to specifically target students with those characteristics.

## Basic Assumptions

The researcher assumed that the archival data gathered for this study reflected students who were referred and tested for gifted education under consistent methods based on the referral policies of the State of Georgia and the local County represented.

## Basic Limitations

One basic limitation of this study was in the use of statistical significance in a descriptive educational study where random sampling is seldom used (Gall, Gall, & Borg, 2003), as was the case in this study. According to Gall et al., (2003) random sampling is the requirement for valid results. However, educational research is largely derived from convenience sampling due to the constraints of obtaining the data; even the study of an entire population is statistically meaningless because the results are defined as a true difference, not a statistical difference. However, Gall et al. (2003) recommended

proceeding with statistical analysis, even in situations of convenience sampling or low statistical power, but replications of the study would be needed to confirm valid results. Another limitation of this study is that the study population will consist of a very small number of Asian students, thus limiting the statistical power of the analysis.

## Brief Review of Related Literature

Two studies similar to this one were conducted where gifted test scores were analyzed. One study compared the performance of students identified through the psychometric approach to the students identified through the multiple criteria approach (Stephens, 2009). In this study, the researcher analyzed the method of qualification which was most prevalent: Psychometric or Multiple Criteria. The researcher also analyzed the pattern of qualification that was most prevalent. She then compared the performance of students on the state standardized test by subgroup of Multiple Criteria students and Psychometric students. The researcher used a convenience sampling in one Georgia county. The results indicated that students identified through the Psychometric approach scored higher in all content areas of the standardized test, although only math showed a statistical significance. This research showed that there was no statistical difference in the number of students identified through the Psychometric Approach or the Multiple Criteria Approach, although the researcher noted that this did not correlate to previous studies that showed a greater number of students identified through the Psychometric Approach (Van Tassel-Baska, Feng, & de Brux, 2007). Finally, the researcher analyzed the patterns of the possible combinations of identification through the Multiple Criteria Approach to determine if one pattern was more frequent than the others. The analysis showed that the combination of achievement/creativity/motivation

was the most prevalent which was consistent with a previous study by Van Tassel-Baska et al. (2007).

The study by Stephens is similar to this project in the analysis of gifted identification through patterns and methods of qualification, however this researcher further analyzed test scores by ethnicity. One distinct difference is that Stephens only analyzed scores of students who qualified for gifted services. This researcher analyzed all scores of students tested, whether they qualified or not in order to gain a wider range of scores.

Another study was conducted in the State of Tennessee (Edwards, 2008) where the researcher analyzed gifted screeners to determine predictability of IQ. Data were gathered from 127 students who met eligibility criteria in the State. Analysis of the data was used to determine if achievement, creativity, and/or motivation would predict intelligence for the purpose of more efficiently screening for gifted identification. The analysis revealed that achievement does predict IQ, but creativity and motivation alone do not yield a significant predictability of IQ. However, when creativity and motivation were added to the achievement analysis, the predictability was higher. This researcher also used data from identified gifted students, which omits a critical dataset of students who would score high in some areas and low in others to see if the patterns still hold true.

## Summary

The purpose of this study was to determine if there is a pattern to the characteristics of identifying gifted students within five student populations defined as African American, Asian, Caucasian, Hispanic, and "Other" students. Data indicating

differences in test scores within these defined populations are useful in aiding educators during the referral process for gifted identification in the State of Georgia.

Chapter 2 offers a review of the related literature to gifted identification including a brief history of the change in the definitions and process of identification, the theories related to gifted identification, the process applied in the State of Georgia, and current literature on the student populations as it applies to cultural differences within gifted education. Chapter 3 describes the research questions, the description of the participants, the design of this study, the definition of the variables, the description of the instruments used for the data, the procedures, and the data analysis.

# Chapter II

# REVIEW OF THE LITERATURE

The purpose of this study was to identify the most frequent patterns of gifted qualification among African American, Asian, Caucasian, Hispanic, and "Other" subgroups, as well as determine any significant differences between the student populations within the four gifted areas of mental ability, achievement, creativity, and motivation. In addition, the researcher analyzed which measure was most prevalent for each student population. The researcher also determined whether the percentage of students who were served for gifted education reflected the total school population within the subgroups defined as African American, Asian, Caucasian, Hispanic, and "Other" in this South Georgia school system.

## Historical Background

The idea of giftedness can be traced back to the earliest societies. The Spartans valued military skills and might; the Greeks valued physical fitness; the Romans valued engineering (Robins, 2010). In many cultures throughout history, children were groomed to excel in areas where natural gifts were evident—even educated based on these gifts (Colangelo & Davis, 2003). Gifted education is not new. However, defining, measuring, and identifying giftedness did not begin until the late 1800s when Francis Galton published his book entitled *Hereditary Genius* (1892) based on his study of mental ability within English families (Tannenbaum, 1983). He determined that mental ability is predominantly based on heredity, but of equal importance, he set the precedent that mental ability can be studied in an experimental manner (Robins, 2010).

French researchers Binet, Henri, and Simon developed a series of tests in 1905 (Tannenbaum, 1983) to study students with inferior intelligence. These tests opened the discussion for mental age and were the first to equate intelligence with a numeric value on an assessment (Robins, 2010). Henry Goddard, who studied with Binet, brought the tests back to America and translated them into English where Lewis Terman, a Professor at Stanford University in California, developed his version of the test in 1916 geared toward assessing those with higher intelligence--The Stanford-Binet IQ Test (Robins, 2010). The test measured various mental abilities to calculate a score for mental age. This mental age was divided by the student's chronological age to quantify his intelligence—renamed intelligence quotient or IQ (Sattler, 2001). Students with an IQ of at least 140 were considered at that time to be gifted based on this assessment of intelligence; those students below this cut score were not gifted, thus bringing an "absolutist view of giftedness" (Brown et al., 2005, p. 69).

With this newfound ability to measure intelligence, schools began offering programs for gifted individuals as early as the late 1800s when St. Louis Schools initiated a program for students to complete more challenging work at an accelerated pace. In Massachusetts, a preparatory school for gifted students was opened in 1901. By 1920, most large cities in America had a gifted program of some form (Colangelo & Davis, 2003).

In New York City, Leta S. Hollingworth opened a class for gifted students whose IQ was above 150, which would become the basis for her published research. She published a book titled *Gifted Children: Their Nature and Nurture* (1926), considered by many to be the first textbook in Gifted Education. Hollingworth was the first to teach a

college-level course on gifted children (Weber, 1999) and ultimately would form The Speyer School for Gifted Students where she would continue to study gifted students as well as design, teach, and evaluate gifted curriculum. It was through her work with gifted students that Hollingworth was noted for determining that gifted characteristics far exceed intelligence alone (1926). She asserted the notion that students having special talents in specific areas or fields could be linked with success in much the same manner as those students showing high intelligence alone.

Attention to gifted education between the 1920s and the 1950s was low on the list of priorities considering the nation's plummet into the Great Depression followed by World War II. But in the late 1950s, when the United States lost its race to space, there was a revival of interest in educating America's best and brightest for the future of our nation. Gifted education became a national focus for the first time and massive legislation soon followed. As legislators began listening to the critics of public education, the shortages of personnel in science, engineering, medicine, and teaching became frighteningly apparent (Tannenbaum, 1983). During this time, the shift in priorities became critical. "Ennobling excellence was no longer just a means of improving the quality of life in a free society; it had also become a key to the survival of the free world" (Tannenbaum, 1983, p. 20). Education and defense became codependent goals through the institution of the National Defense Education Act (1958) which focused on math and science in education with a component on identifying gifted students.

However, the Civil Rights Movement of the 1950s and 1960s brought increased attention to minority students in education. The Supreme Court decision for desegregation in 1954 meant that school integration and compensatory education became

mandatory components of public schools. But these components were not adequate in providing quality education for our minority and underprivileged students. Critics arose against using intelligence tests to serve the exclusive role for identifying gifted students. The critics charged this practice as being biased against racial minorities and thus exclusive in placing students back into segregated environments (Tannenbaum, 1983). So, attention to gifted education once again declined in the fire of controversy. Abraham Tannenbaum (1983) stated, "no other special group of children has been alternately embraced and repelled with so much vigor by educators and laypersons alike" (p. 16).

The Elementary and Secondary Education Act of 1969 Public Law 91-230 (U.S. Department of Education, 1969) was amended with an additional section (806) titled "Provisions Related to Gifted and Talented Children." Section 806 provided federal assistance to gifted and talented students through Title III and V funding. This sparked a federal evaluation spearheaded by Commissioner Sidney Marland, Jr. to define giftedness as well as define the Department of Education's role in educating the gifted. From this investigation, the first federal definition of giftedness was accepted in 1972 as offered by the Marland Report (1971) which stated:

> Gifted and Talented children are those identified by professionally qualified persons, who by virtue of outstanding abilities, are capable of high performance. These are children who require differentiated educational programs and/or services beyond those normally provided by the regular school program in order to realize their contribution to self and society. (p. 8)

The definition in the Marland Report specifically listed six traits of demonstrated ability or high achievement: (1) general intellectual ability; (2) specific academic

aptitude; (3) creative or productive thinking; (4) leadership ability; (5) visual and performing arts; and (6) psychomotor ability (p. 8). The acceptance of the Marland Report in 1972 sparked a major change in federal legislation concerning gifted education in the establishment of the Office of Gifted and Talented under the umbrella of the Department of Education. And, by the end of the 1970s, it was reported that 33 states had an increase of nearly 25% in the number of gifted children served in gifted education (Tannenbaum, 1983).

The next two decades would bring more legislation for gifted education, most notably the enactment of the Javits Act which awarded grants to help schools meet the needs of gifted students, particularly those students in underrepresented populations (U.S. Department of Education, 2009). The Javits Act was responsible for funding the National Research Center on the Gifted and Talented which in turn provided extensive gifted education research. This research prompted two publications which were revolutionary in the field of gifted research: *A Nation at Risk* (National Commission on Excellence in Education, 1983) and *National Excellence: A Case for Developing America's Talent* (U.S. Department of Education, 1993) which summarized the research of the last decade and made federal recommendations for further educational reform. The National Association for Gifted Children (NAGC) also published a set of curriculum standards for Gifted Education in 1998 and revised in 2010 in an attempt to unify the research, goals, and programming for gifted education.

When The No Child Left Behind Act of 2002 (U.S. Department of Education, 2002) was instituted as the reauthorization of the Elementary and Secondary Education Act, the federal definition of giftedness was changed. This definition stated:

> Students, children, or youth who give evidence of high achievement capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need services and activities not ordinarily provided by the school in order to fully develop those capabilities. (p. 544)

This definition expanded the criteria for giftedness to include characteristics of creativity, artistic abilities, and leadership capacities. This would ultimately change the criteria for identification and testing as well as alter the types of programs that had previously been offered for high ability students.

National and political events have influenced the need, the method, and the means of defining giftedness. Early forays into the recognition and cultivation of giftedness occurred against the backdrop of the Industrial Revolution with its emphasis on specialization. The exploration into the uncharted realms of giftedness has taken us from the horse and buggy days into the space age, from the trenches of the Great War, through the Second World War, and the icy days of the Cold War. The demand for gifted recognition has been in response to the necessities of the battlefield, the Race for Space, and the survival of America's place as an academic, scientific, and economic competitor in the arena of the world.

## Theories Related to Gifted Identification

The arduous and often precarious journey into modern gifted identification continues after one and a quarter centuries. This great undertaking was borne along on the shoulders of pioneers that blasted new roads through the mountains of generally accepted practices. Research in the field of gifted education has concerned itself with the historical background of evaluating and educating gifted individuals. Although this was

true to some extent in ancient times, the definition, measurement, and identification of giftedness began in earnest in the late 1800s (Tannenbaum, 1983). The advent of intelligence measurements brought a new component to the understanding of giftedness. Since the 1960s, prior knowledge has been expounded upon by many gifted researchers.

Theories related to gifted identification began to surface through the work of Lewis Terman (1928) who concerned himself primarily with intelligence testing. Joseph Renzulli (1978) asserted that creativity and commitment were also factors. Gardner (1983), Tannenbaum (1983), and Sternberg (1985) all continued to broaden the concept of giftedness. Paul Torrance (1962) introduced a practical testing mechanism that measured creativity in students. These researchers provided the foundation for which Mary Frasier and her team built the Multiple Criteria Rule 160-4-2-.38 used today for the State of Georgia Gifted Education Program (Felton, 2008).

Historically, gifted identification was based solely on IQ testing, influenced by the work of Lewis Terman (Brown et al., 2005). Lewis Terman became known as the Father of Gifted Education beginning with this work on intelligence testing. He continued his work on intelligence testing by developing a military version called the Army Alpha and the Army Beta, tests given to military recruits during the First World War. These tests helped to identify recruit placement as well as to identify those recruits designated for officer training. After the war, he altered these tests for use in classifying school children, thus developing *National Intelligence Tests* for grades three through eight (Lewis Terman, 2008). He would further develop the first and longest running longitudinal study of gifted children, beginning with a sample of nearly 1,500 students with an IQ of 140 and above. Terman and his associates published a volume of books on

gifted children based on these studies titled *Genetic Studies of Genius* (Burkes et al., 1930; Cox, 1926; Terman, 1925; Terman & Oden, 1947; Terman & Oden, 1959). Terman determined that early IQ can be used to predict achievement in adulthood (Tannenbaum, 1983).

Joseph Renzulli is a distinguished professor of Educational Psychology at the University of Connecticut, Director of the National Research Center on the Gifted and Talented, and named one of the 25 most influential psychologists in the world by the American Psychological Association (Savino, 2009). Joseph Renzulli proposed his Three Ring Conception of Giftedness in 1978, asserting that the emphasis on test scores tends to overshadow creativity and task commitment, qualities that are essential for economic and cultural advancement in our country (Renzulli, 1978). Renzulli proposed the theory that ability, creativity, or task commitment alone could not quantify an individual as gifted, but rather the intersection of these characteristics has been shown to be the factor of incredible accomplishment. Renzulli is also attributed with classifying two types of gifted abilities: schoolhouse giftedness and creative/productive giftedness (Reis, n.d.). Individuals classified as schoolhouse gifted are those who perform well on tests, schoolwork, and traditional intellectual and cognitive assessments. However, creative/productive gifted individuals are those who tend to produce original knowledge, thoughts and thought processes, products, and materials.

Howard Gardner, Professor of Cognition and Education at Harvard Graduate School of Education, came along in the 1980's after studying with experts such as Erik Erikson, David Reisman, and Jerome Bruner who were investigating human nature and blazing paths to new ideas and knowledge to propose another theory of intelligence that

expanded the definition even more. His theory of Multiple Intelligence (1983) listed eight categories of intelligence to provide an individual with the ability to solve problems, create products, and provide valuable services (Shearer, 2004). These eight intelligences are linguistic, logical-mathematical, visual-spatial, kinesthetic, musical, naturalist, interpersonal, and intrapersonal. Gardner's domain approach to intelligence challenged the idea of a single measure of intelligence. His theories have also shaped the educational foundation of differentiated instruction to meet the needs of all students, but particularly the needs of gifted students. The framework of multiple intelligence to identify gifted students has been used to broaden the process through using portfolios and other measures in addition to standardized tests resulting in increased numbers of low socio-economic students (Reid & Romanoff, 1997).

Abraham Tannenbaum entered the argument of attempting to define giftedness and insisted that one measure cannot possibly begin to define or explain giftedness fully (Brown et al., 2005). Tannenbaum (1991) proposed the Sea Star conception of giftedness where the five points of the star represent a factor of giftedness that must "interweave elegantly: (1) superior general intellect, (2) distinctive special aptitudes, (3) supportive array of nonintellective traits, (4) a challenging and facilitative environment, and (5) the smile of good fortune at crucial periods of life" (p. 29). He stated that "giftedness in children denotes their potential for becoming critically acclaimed performers or exemplary producers of ideas in spheres of activity that enhance the moral, physical, emotional, social, intellectual, or aesthetic life of humanity" (Tannenbaum, 1983, p. 87).

As a child, Robert Sternberg performed poorly on intelligence tests and worked under low expectations from his teachers. However, one teacher saw potential in him and

challenged him to excel. With her encouragement, he became a high achieving student and eventually graduated with honors from Yale University (Plucker, 2014). The study of intelligence and success was a very personal endeavor for Sternberg, and he has made a valuable contribution to the field of gifted education as a result. Robert Sternberg introduced his Theory of Successful Intelligence (1996) based on three premises of his Triarchic View of Giftedness (1985) which are componential, experiential, and contextual intelligence. According to Sternberg (1985), the componential intelligence relates to the underlying processes of behaviors wherewith individuals relate to the environment. The experiential intelligence addresses the role that experience plays in defining one's intelligence. The contextual intelligence is defined in the ability of an individual to relate to a specific environmental context. All of these definitions of intelligence serve as skills that balance an individual's ability to find success in situations. The Theory of Successful Intelligence asserts that there are more avenues of success than intelligence alone. "People succeed by capitalizing on strengths and by compensating for or correcting their weaknesses; … (and) by various blends of creative, analytical, and practical skills and attitudes" (Sternberg, 2008, pp. 488-489). The basis of his premise is that a person's success is not simply measured by intelligence in one or all of the three domains within the Triarchic Theory, but in how well one can balance those intelligences against each other.

At the University of Georgia, research continued on massive fronts with the establishment of the Torrance Center for Creative, Gifted, and Future Studies where Paul Torrance pioneered work in measuring creativity. Torrance served in the military during World War II as a Psychologist who counseled disabled veterans. He discovered a

pattern of creative thinking that enabled these veterans to survive and escape extreme circumstances. Later, he worked for the Air Force Survival Training Program where he and his team trained soldiers on survival techniques in extreme and unusual conditions using creative thinking. This experience formed the foundation for the research that he would pursue the rest of his life: how to identify and develop creative potential (Hebert, Cramond, Speirs Neumeister, Millar, & Silvian, 2002). He continued this research ultimately publishing his Torrance Test of Creative Thinking in 1966, a test still used in revised form today for gifted testing and identification.

It is interesting to note that gifted identification remained relatively unchanged and unchallenged for over four decades. The work of Terman was universally accepted. It was the advent of the space race that caused educators in the United States to take a fresh look at giftedness. Trail blazers, such as Joseph Rezulli, did not refute but, rather expanded upon the theories of Terman. Reverence for creativity and productivity were added to IQ. The intersection of these three traits was recognized as the sweet spot of giftedness. Gardner, Tannenbaum, and Sternberg expanded the focus to more than academic success with each of their respective theories on multiple criteria giftedness. Room was made for individual strengths and talents, relational intelligences, aptitudes, and the awareness of environmental and experiential factors. It perhaps could be argued that if Lewis Terman is the Father of Gifted Education, Paul Torrance is one of its brightest offspring. His genius was in capturing the theories as applied to creativity and engineering them into a workable and practical measurement tool, quantifying a measurement for an idea as open-ended and abstract as creativity. Ongoing research into the nature and recognition of giftedness is essential for continued and improved results.

## Identification Policies in Georgia

The State of Georgia has always been ahead of the curve in the area of gifted education (Felton, 2008). In the 1960s, before the investigation of the Marland Report, only two states had policies in place mandating services for gifted students: Pennsylvania in 1963 and Georgia in 1964 (Passow & Rudnitsky, 1993). According to the 2012-2013 State of the Nation in Gifted Education Report (NAGC, n.d.), the majority of states in the nation had mandates in place to identify and serve gifted students, but only four of those states fully funded the education of gifted students, with Georgia being listed as one of those states.

The State of Georgia recognized the need for gifted services in the state as far back as 1958 when the Georgia House of Representatives passed a resolution to provide for proposals representing the study of the needs of gifted children (Felton, 2008). Margaret O. Bynum was hired by the Department of Education to investigate the needs of gifted students in the state and to develop a plan for serving those needs. Based largely on her work, in 1967 the State would be the first to pass legislation mandating every school system to implement gifted services (Georgia Department of Education, 2014). Gifted education was defined at this time as students with high mental ability having one or more specific aptitudes as determined by performance or test, or who are outstanding in performing arts (Georgia Department of Education, 1967). This definition was a precursor to the multiple criteria rule that Georgia would institute in years to come (Felton, 2008).

However, in 1986, the definition once again became more restrictive in nature as the Georgia Department of Education revision defined gifted students as those with a

high degree of mental ability and who need special instruction in order to achieve at levels commensurate of that ability. This revision also instituted the law of automatic referral of students who scored at the 99th percentile on a mental ability test (Georgia Department of Education, 1986). The language of this revision is still partially contained in the current state definition. However, as researchers began to look at the population of students being served in gifted education, a great disparity between specific subgroups of students was obvious and was believed to be based on the stringent criteria required for placement (Frasier et al., 1995). Mary Frasier began a taskforce to review the identification process in Georgia leading toward a multiple criteria approach. Her team developed more comprehensive screening techniques to open opportunities for more students to be tested. These data became the basis for support of legislation on the use of multiple criteria identification procedures in the State (Hunsaker, Frasier, Frank, Finley, & Klekotka, 1995). As Frasier's team once again revised both the definition of giftedness and the process of identification, the researchers on this team looked to the works of researchers in the field like Renzulli, Sternberg, Gardner, Tannenbaum, and Torrance who held to the tenants of multifaceted definitions of intelligence (Stephens, 2009).

Historically, Georgia students were identified through only traditional intelligence tests until 1986 when achievement tests were included. Then, through the work of Mary Frasier and others in the state, legislation in Georgia expanded once again in 1994 and 1995 to create the Multiple Criteria Approach (Eger, 2011), which further expanded identification testing to include motivation and creativity. This expansion was the result of extensive research from the National Research Center on the Gifted and Talented

(NRC/GT) where the issues surrounding ethnic minority groups in gifted programming were being investigated (Frasier et al., 1995). The proposal for this new legislation was met with much criticism and concern, so the State tabled the decision for six months (Krisel & Cowan, 1997; Stephens, 2009). But, in December of 1995, Georgia's State Board of Education adopted the new multiple criteria rule known as Rule 160-4-2-.38 which defined multiple criteria eligibility to include "(A) Evidence of student work product or performance; (B) Data from teacher, parent, or peer observation; and (C) Evidence of student performance on nationally normed standardized tests of mental ability, achievement, and creativity" (Georgia Department of Education, 2014, p. 4). For the purpose of our study, the Georgia Department of Education defines a gifted student as:

> A student who demonstrates a high degree of intellectual and/or creative ability (ies), exhibits an exceptionally high degree of motivation, and/or excels in specific academic fields, and who need special instruction, and/or special ancillary services to achieve at levels commensurate with his or her ability (ies). The abilities manifest in a collection of traits, aptitudes and behaviors that, when taken together, are indicative of gifted potential. (Georgia Department of Education, 2014, p. 23)

The testing procedures in the State of Georgia now include two options for gifted qualification (Georgia Department of Education, 2014), the Psychometric Approach and the Multiple Criteria Approach. Data are gathered for students in four areas: mental ability, achievement, creativity, and motivation. Students who qualify through the Psychometric Approach, or Option A, must qualify on both areas of mental ability and

achievement. Students who meet the requirement on both of these tests automatically qualify for gifted services no matter the outcome of the tests of creativity and motivation, although data are still collected in those areas. The Multiple Criteria Approach, or Option B, requires students to qualify on three of the four areas of gifted assessment: mental ability, achievement, creativity, or motivation. If students miss the criteria on any assessment by a predetermined margin of error, then alternate assessments are given in that area (Appendix A). Specific requirements in each of the four areas of assessment are described in Chapter 3, subsection titled *Description of Instrumentation*.

## Current Literature Relevant to Research Questions

There has been clear research and evidence that obtaining multiple forms of assessment and data for the purpose of identifying gifted students has increased the number of gifted students enrolled in gifted education and that the increase in minority students previously underrepresented has been considerable (Georgia Department of Education, 2014). However, the practice of referring and screening students for gifted identification still has many limitations resulting in the exclusion of students who would possibly qualify for much needed services (Robertson et al., 2011). As the practice and process of gifted identification has changed, researchers have continued to study the patterns of identification to more efficiently identify gifted students (McBee, Shaunessy, & Matthews, 2012). There exists much research and evidence concerning the use of multiple forms of assessment (Ford, Moore, & Milner, 2005; Harris, Rapp, Martinez, & Plucker, 2007; Lohman, 2005; Pierce et al., 2007). As to the practice and process of gifted identification, researchers continue to study patterns to increase effectiveness and efficiency. From this, two glaring patterns emerge: the underrepresentation in the

African American and Hispanic communities, and the overrepresentation in the Caucasian and Asian communities. The primary causes of underrepresentation appear to be deficit thinking on the part of the educator which contributes to low expectations (Ford et al., 2005), cultural biases in gifted testing (Harris, Plucker, Rapp, & Martinez, 2009), and the phenomenon of negative cultural or social stigma against participation in gifted programming (Morris, 2002; Thompson, 2013). Overrepresentation seems to stem from overreliances on characteristics such as organization, neatness, punctuality, and eagerness (McBee, Peters, & Waterman, 2014; Weber, 1999). The role of the teachers is critical as they are the primary source of gifted referrals (Foreman & Gubbins, 2015).

### *Underrepresentation*

Underrepresentation of minority students continues to be an issue. "The data speaks volumes—at no time in the history of gifted education have Black students been equitably represented…. The same holds true for Hispanic students" (Ford et al., 2013, p. 205). According to the 2014 issue of the U.S. Office for Civil Rights Data Collection, Latino and Black students make up 26% of the students enrolled in gifted education although the total enrollment of those same populations in the schools that offer gifted programs is 40%. The National Association for Gifted Children (NAGC) in 2012 reported data from various levels of public schools including, but not limited to, fourth grade math exams, standardized state exams, and high schools with advanced placement opportunities where only a small percentage of minority students reach the highest levels of achievement in the United States. Additionally, minority populations have shown far less increase in the percentage of students that do reach the highest levels of achievement. For example, data from this NAGC Report (2012) revealed that on the fourth grade

NAEP math exam, African American students scoring at the advanced level increased from less than 1% in 2003 to 1.1% in 2011; Hispanic students increased from 1% to 2%; White students increased from 5% to 9%.

One possible reason for underrepresented minorities in gifted education is summarized in the idea of "deficit thinking" as it "contributes to the low expectations of Hispanic and Black students for gifted education screening, assessment, and programs/services" (Ford, 2014, p. 189). In a recent court case known as McFadden v. Board of Education for Illinois School District U-46 (2013), one school district was found to be guilty of intentional discrimination against minorities, specifically Hispanics. The District housed two separate gifted programs based on the high enrollment of Hispanic students with the intent of offering them a gifted program where Spanish is still used so that they could study and be challenged at higher levels without the language barrier. The two programs even used different testing requirements for identification into the program in efforts to minimize language problems on verbal tests. However, it was found that students who tested out of English Language Learner (ELL) programs and were confirmed to be sufficiently English proficient to attend regular English-taught classes were not given equal opportunity to test into the non-Hispanic gifted program. If they did attempt to meet the testing requirement, the tests that were used were verbal with a high cut-off score rather than still providing the option for the nonverbal test used for the Hispanic program. The court found that the District had not met its burden of proving the separate program as necessary and found that the District discriminated with the use of separate tests for each program. Furthermore, as students in the two elementary gifted programs were filtered into one gifted program for middle school, only 20% in the gifted

program were Hispanic compared to 43.8% total Hispanic enrollment, and even less remained in the gifted program at the high school level.

Not all cases of underrepresentation are intentional. Cultural biases found in the tests used for gifted identification have been documented to be exclusive for minority students (Ford et al., 2005; Harris et al., 2009). Culturally diverse students, specifically Hispanics and African Americans, typically score lower than White students on achievement and intelligence tests (Ford et al., 2005), particularly verbal tests. It has been recorded that "an average or even low IQ score may be a poor or misleading indicator of student ability if the child comes from a culturally deprived or culturally different environment" (Davis & Rimm, 2004, p. 278). Multiple criteria approaches, such as the approach used in Georgia, have been recommended to reduce racial or socio-economic bias from intelligence or achievement tests alone (Davis & Rimm, 2004; Frasier et al., 1995). When multiple data sources are used, students are given more opportunities to reveal gifted characteristics like creativity or motivation. The open-ended nature of the creativity tasks provides disadvantaged children a fair opportunity to display creative potential (Torrance, 1971). The National Association for Gifted Children published a position statement (2008) with five non-negotiable research-based practices regarding the use of assessments for identification purposes. First, the assessment tool must align with the definition, goals, and objectives of giftedness and gifted programming determined by the state, district, or school. Second, multiple pieces of data must be gathered to ensure different characteristics of giftedness have been represented, thus gaining a more complete and accurate picture of the child. Third, the testing setting must be natural and comfortable for positive results. Fourth, schools

should assume responsibility of remaining informed of assessment validity and reliability. Fifth, schools should assume responsibility of procuring appropriate training for all test administrators.

One last thought regarding the underrepresentation of minority students rests in the phenomenon where minority students chosen for gifted programs refuse placement for fear of social ridicule (Morris, 2002). One study revealed that 66% of students knew someone who had been ridiculed for achieving academically (Ford, Grantham, & Whiting, 2008). Some have speculated there is a negative social stigma attached to participation in gifted programs from the minority community (O'Brien, 2009; Thompson, 2013). Underrepresentation of minorities in gifted programming whether the result of deficit thinking on the part of the educator, intentional or unintentional, test bias, and/or negative social stigma may be valid causes but should not be used as valid excuses. The underrepresentation should present to educators a challenge to find and correct any such causes. Educators should look for signs of latent potential in all students.

### *Overrepresentation*

Overrepresentation of certain subgroups still prevails. Although there is clear literature on the prevalence of underrepresented students in gifted education, literature also exists on the number of identified students who are not truly gifted (McBee et al., 2014). These are the students who are referred for gifted education based on characteristics that include organization, neatness, punctuality, and eager participation (Weber, 1999). But in counter distinction, Weber sees disorganization and lack of routine as indicators of giftedness in certain students.

Although students who are screened and referred for gifted education should be filtered through the testing process, one particular study revealed disparities in the multiple criteria model where the reliabilities and correlations between the tests were analyzed (McBee et al., 2014). The researchers in this study examined the multiple criteria rule as it is applied in 41 different states. The multiple criteria model is implemented with various measures and weights among the different states, and the commonality is the use of multiple assessment measures. When examining the different models, the researchers found three distinct patterns: the Conjunctive Model known as the "And" Rule, the Disjunctive Model known as the "Or" Rule, and the Compensatory Model known as the "Mean" Rule. Several simulations were performed with each model yielding a unique set of benefits and consequences. The model used for the State of Georgia was examined in this study and was described in detail because it was a unique departure from any one simulation. The Georgia model was a combination using both the "And" Rule where a student must qualify on more than one assessment followed by the "Or" Rule where students have three different pathways of which to qualify. The results of this study after analyzing the reliability and correlation of the four test scores to identify the number of students identified that were "truly gifted" showed that the system "tended to produce more false negatives than incorrect identifications" (McBee et al., 2014, p. 82). Although the multiple criteria system in Georgia has been formulated to include as many students as possible for the type of programming available, it is not a system without flaws. "Despite the detailed and specific nature of the Georgia system, many truly gifted students were missed and many more students were identified who should not have been" (McBee et al., 2014, p. 82).

### *Teacher Roles*

As we discuss the statistical implications of underrepresentation or overrepresentation of specific populations of students in the gifted programs, it is important to understand the process of identifying students for gifted services often begins with a referral from the teacher. In Georgia, teacher referral or nomination is a critical part of the process for gifted identification, so much so that teachers are often referred to as the gatekeepers for students entering into gifted programs (Foreman & Gubbins, 2015). Teacher effectiveness in gifted referral is a controversial topic (Gagne, 1994; McBee, 2006; Pierce et al., 2007; Renzulli & Delcourt, 1986; Siegle & Powell, 2004; Speirs Neumeister, Adams, Pierce, Cassady, & Dixon, 2007). There have been studies that have shown that teachers are effective in referring gifted students for services when the characteristics and qualifications are specifically defined in a set of criteria or on a checklist and when the teachers have been trained prior to the referral process on the defined set of characteristics (Pierce et al., 2007; Speirs Neumeister et al., 2007; Siegle, Moore, Mann, & Wilson, 2010). A recent study using a large dataset in the State of Georgia indicated that teacher referrals are the second most effective referral source for students entering gifted programs next only to automatic referrals from test scores (Gagne, 1994; McBee, 2006). Another study showed that when teachers were trained on the characteristics and needs of gifted students, their participation in the interventions increased as did the confidence in their teaching abilities (Bangel, Moon, & Capobianco, 2010).

However, studies have shown that if teachers hold a narrow view of giftedness, sometimes called a mental model of giftedness (Weber, 1999), it can alter their

effectiveness when screening and referring students for gifted services. An example of this mental model was revealed in the report from undergraduate preservice teachers where 76% felt that gifted students would succeed if left alone in the classroom and 64% felt that gifted programs were elitist (Bain, Bliss, Choate, & Sager-Brown, 2007). This type of mental model ultimately shapes the decision of these teachers in identifying gifted students for additional services.

Elhoweris, Mutua, Alsheikh, and Holloway (2005) found that teacher referrals were more likely to discriminate ethnically and socially than some test measures that are generally thought to be biased. Therefore, students of ethnic minorities or low socio-economic status may fail to be provided services simply because they do not make it past the gatekeepers responsible for identifying them (Foreman & Gubbins, 2015). Teacher prejudice or bias has been shown to reduce the effectiveness of Teacher Observation Forms for gifted screening (Powell & Siegle, 2000; Torrance & Caropresso, 1998) not only from negative views of cultural differences, but also from teachers who attempt to be color-blind by minimizing or negating that cultural differences even exist (Ford & Scott, 2010). This has been referred to as "colorblindness" (Gordon, 2005). It has been shown that teachers who see race as irrelevant are less likely to recognize gifted characteristics of minority students than teachers who accept, acknowledge, and embrace cultural differences (Gordon, 2005).

One study indicated that teachers often lack awareness of observable characteristics of giftedness in minority students (Speirs Neumeister et al., 2007). Students of diverse cultures often display gifts and talents in ways other than mainstream academics, tests, or traditional expectations of teachers (Roberts & Jolly, 2012). Not

only that, but "the same characteristics that define the gifted child can also create problems depending on how they are viewed" (Weber, 1999, p. 5). Students who demonstrate an advanced sense of humor may be viewed as delightful by one teacher but obstinate by another. The student who has an imagination far beyond his years may be able to produce writing and theoretical assumptions that astound teachers, but this same creativity does not allow him to be organized and structured. Studies have shown that teachers often concentrated on helping these students improve weak skills such as organization rather than focus on cultivating the strength of using imagination for advanced thinking (Harris et al., 2009; Weber, 1999). Rinn and Nelson (2009) performed a study on the extent to which school counselors misdiagnosed giftedness as Attention Deficit Hyperactive Disorder (ADHD) due to overlapping characteristics. Counselors' perceptions, or misperceptions, of giftedness vs. ADHD center on the notion that when bored and under stimulated, the gifted child may be off-task, restless, and have difficulty concentrating. But, when the idea of giftedness was presented as an alternative for the basis of the behavior, counselors were more likely to consider giftedness as an explanation than when the suggestion was not made (Rinn & Nelson, 2009).

## Summary

The preponderance of research (Brown et al., 2005; Marland, 1971; Reid & Romanoff, 1997; Renzulli, 1978; Shearer, 2004; Tannenbaum, 1983) has shown the historical relevance of identifying the individual abilities and capabilities of students. The specific search for the quality that is defined as giftedness has gained steam steadily in the last 125 years and has been on the downhill grade since the 1960s. Contributors such as Terman, Renzulli, Gardner, Tannanbaum, Sternberg, and Torrance have enriched

and expanded the definition of giftedness to encompass an array of characteristics. This understanding propelled the State of Georgia to adopt a four-pronged gifted measurement that includes mental ability, achievement, creativity, and motivation. The State of Georgia has been a leader in the area of gifted education dating as far back as 1958 and culminating in 1995 with The Multiple Criteria Approach for identifying gifted students for programming (Eger, 2011). This approach has provided an increase in the representation of minorities in recent years. Even with this increase, minorities are still grossly underrepresented. The causes of the underrepresentation are complex and varied, none-the-less, they seem to fall within the broader framework of certain generalities. Deficit thinking on the part of the teacher causing a misdiagnosis of giftedness by automatically equating giftedness with achievement, neatness, routine, and deportment, and consequently overlooking giftedness if these are not present. Testing may unintentionally contain cultural biases which serve as roadblocks to some minority students. In some cases a negative cultural and/or social stigma has been attached to participation in gifted programming. The question that begs to be answered is, "What are the indicators of giftedness, if any, that may differentiate underrepresented student groups from those who are overrepresented?"

# Chapter III

# METHODOLOGY

## Restatement of the Purpose

The purpose of this study was to evaluate the patterns of gifted identification among African American, Asian, Caucasian, Hispanic, and "Other" subgroups. The researcher analyzed archival data from elementary students in one Georgia county to determine whether significant differences existed in each of the scores of the four gifted assessments between the subgroups while looking for which combination of scores each subgroup most frequently met as the criteria for qualification. Using archival data from students tested for gifted education, both those who qualified and those who did not qualify for services, the researcher used One-Way MANOVA to determine any significant mean differences in performance for African American, Asian, Caucasian, Hispanic, and "Other" students. The researcher also analyzed the percentages of African American, Asian, Caucasian, Hispanic, and "Other" students who were served for gifted education to determine how those percentages were reflected in the total population of the schools.

Georgia's multiple criteria approach to gifted identification allows for students to be tested in four areas: mental ability, achievement, motivation, and creativity. However, the research for each of these areas of testing reveals some disparities in regards to colinearity between the categories. The scores used in the analysis were converted from percentile scores to Normal Curve Equivalent scores for a more accurate description of significance. In addition to analyzing the scores from students who

qualified for gifted services by meeting the Georgia eligibility criteria either through the Psychometric Option or the Multiple Criteria Option, this study also analyzed the scores of students who were referred for testing but did not meet either set of criteria. In two studies similar to this one (Edwards, 2008; Stephens, 2009), scores of specific gifted tests and standardized tests were analyzed for predictable patterns; however, only the scores of students who qualified for gifted services were analyzed, which means that only the high achieving scores were used to determine predictable patterns.

Although the procedures in Georgia for gifted identification and eligibility have expanded over the years from including only two domains of traditional intelligence and achievement to also include motivation and creativity, there are still many concerns about the efficiency and accuracy of identification procedures. Although this expansion of identification testing certainly integrated more students into gifted programs, particularly minority students, there were still many problems with the referral stage of the identification process such as the lack of understanding of true gifted characteristics by teachers and referral coordinators, specific sub-groups of students are still underrepresented (Borland, 2004), gifted students were missed for various reasons, and other students were selected that may not be gifted (McBee et al., 2014). Therefore, the purpose of this study was to identify any patterns that existed between the subgroups of students so that those referring students for gifted services will gain insight into qualities or characteristics specific to particular groups of students for more effective, efficient referral practices. Ideally, having this knowledge of patterns specific to student populations will increase the number of gifted students identified for the services that they both need and deserve.

## Restatement of Research Questions

The researcher was seeking to answer the following research questions:

1. Are there significant mean differences in the combination of qualifying gifted criteria among African American, Asian, Caucasian, Hispanic, and "Other" students in kindergarten through fifth grade?
2. Are there significant mean differences in the specific qualifying scores of African American, Asian, Caucasian, Hispanic, and "Other" students on each of the four areas of mental ability, achievement, creativity, and motivation among kindergarten through fifth grade students?
3. Are there significant frequency differences in the percentage of students in gifted programs as compared to the overall school population among African American, Asian, Caucasian, Hispanic, and "Other" students in kindergarten through fifth grade?

## Description of Participants

The sample of participants for this study included 488 archival data records of kindergarten through fifth grade students of a Title I School District in South Georgia who have been through the gifted referral and testing process in the county where the researcher is employed from the 2010-2011 academic year through the 2014-2015 academic year. Of the records analyzed, 324 (66.4%) were Caucasian students, 94 (19.3%) were African American students, 47 (9.6%) were Hispanic students, 16 (3.3%) were Asian students, and 7 (1.4%) were classified as "Other." Of the students tested for gifted services, 183 (37.5%) students qualified for services and 305 (62.5%) students did not qualify. However, scores from all students were analyzed by subgroup. This was a

convenience sampling as defined by Gall, Gall, & Borg as "a group of cases that are selected simply because they are available and easy to access" (2007, p. 636). The researcher included all accessible data from students who were tested for gifted identification in kindergarten through fifth grade over the past five years including the students who did not meet requirements into the gifted program from four elementary schools in one South Georgia county.

## Research Design

This study was non-experimental in design using archival data; therefore, the researcher studied the data as it existed (Gall et al., 2007). In contrast to experimental design, non-experimental descriptive research does not manipulate the variables, but rather makes careful descriptions of the educational phenomena and can be as simple as "reporting the characteristics of one sample at one point in time" (Gall et al., 2003, p. 291). The focus of this study was to understand the patterns within subgroups of students in the referral and testing process of gifted identification. This researcher used chi-square analysis for question one to determine the frequency of each combination of gifted qualification by race. Multivariate analysis of variance, or MANOVA, was used for question two to determine how African American, Asian, Caucasian, Hispanic, and "Other" students who were referred and tested for gifted identification differed on the four areas of assessment. MANOVA was appropriate for this type of question because it allowed the researcher to evaluate the data from different groups on more than one dependent variable to determine if any differences existed between the groups. The independent variable in this study was ethnicity; the dependent variables were the four areas of gifted assessment as defined by the Georgia Department of Education (2014):

mental ability, achievement, creativity, and motivation. Mean comparison with ANOVA was used for question three in order to determine if the mean percentage of each student population qualified and enrolled for gifted programming compared to the total enrollment was statistically significant (Gall et al., 2003).

One disadvantage of using statistical significance in a descriptive educational study was that random sampling is seldom used (Gall et al., 2003), as was the case in this study. Educational research is largely derived from convenience sampling due to the constraints of obtaining the data; even the study of an entire population is statistically meaningless because the results are defined as a true difference, not a statistical difference. Random sampling is the requirement for valid results. One other disadvantage of statistical significance tests is that the power of the tests tends to be low (Gall et al., 2003). However, Gall et al. (2003) recommend proceeding with statistical analysis, even in situations of convenience sampling or low statistical power, but replications of the study would be needed to confirm valid results.

## Description of Instrumentation

All gifted testing data in the State of Georgia are gathered in four areas: mental ability, achievement, creativity, and motivation. Each of the four areas of testing is guided by specific requirements according to the Georgia Resource Manual for Gifted Education Services (Georgia Department of Education, 2014). However, the data gathered for this study from the gifted testing records over the last 5 years included more than one instrument in each area. Therefore, this section includes the description of Georgia's requirements of the instruments that were used in each area of gifted testing

along with a description of the specific instruments that were most commonly used in this study for gathering student data.

### *Mental Ability*

The first of the four areas of gifted testing is mental ability. According to the Georgia Resource Manual for Gifted Education Services:

> Mental ability tests shall be the most current editions, or editions approved by GaDOE, of published tests that measure intelligence or cognitive ability, which have been reviewed for bias and are normed on a nationally representative sample with respect to race, religion, national origin, sex, disabilities, and economic background within a 10-year period prior to administration. (Georgia Department of Education, 2014, p. 27)

Students qualifying for gifted services in the area of mental ability must score "at or above the 96$^{th}$ percentile on a composite or full-scale score or appropriate component score" (Georgia Department of Education, 2014, p. 27) on a test which meets the requirements described above.

The instrument primarily used for mental ability in this study was the Cognitive Abilities Test (CogAT) published by Riverside Publishing Company, authored by Lohman & Hagan (2001). The CogAT is used to measure a student's reasoning ability in three areas: Verbal, Quantitative, and Nonverbal. According to Lohman and Hagen (2002), this instrument is used to measure mental ability or intelligence as it relates to "the cognitive processes and strategies that enable individuals to learn new tasks and solve problems, especially in the absence of direct instruction" (p. 1). The test uses a variety of tasks to measure reasoning skills that are developmentally appropriate for

specified ages or grade levels, which according to Lohman and Hagen (2002), "having multiple measures in each domain greatly increases the dependability of the score profile that is reported for each student" (p. 1). Some examples of questions include the use of analogies and verbal classifications, patterns, and quantitative relationships (Appendix B). The scoring is normed by age, grade, or local scales. This gives administrators the option of comparing individual scores with scores of other students either the same age or the same grade, and the option to analyze the data of a local student population in relation to the national sampling. The scores can also be interpreted based on Standard Age Score (SAS), Percentile Rank (PR), or Stanine (S) interchangeably. For our purposes, the scores are interpreted as Percentile Rank on the nationally age normed referenced scale as determined by Rule 160-4-2-.38 in the Georgia Resource Manual for Gifted Education Services (Georgia Department of Education, 2014).

The CogAT is one of the most widely used ability tests administered in a group setting (Lohman, 2003), although it can be administered individually as well. The test manual includes a standardized testing protocol to ensure administration consistency. Internal Consistency Reliability for the CogAT is specified at .95 for the Verbal section of the test, .95 for the Nonverbal, and .94 for the Quantitative, and the composite score had a reliability correlation coefficient ranging from $r = .82$ to $r = .87$ indicating the scores to be highly reliable using the Kuder-Richardson Formula 20 (Lohman & Hagen, 2002). The test-retest reliability yielded greater than .85.

Validity has been established by correlating scores from the CogAT with scores from the Iowa Test of Basic Skills (ITBS) and with scores from the Woodcock-Johnson III (WJ-III). The correlations with the ITBS composite score are .83 for the Verbal, .71

for the Nonverbal, .78 for the Quantitative, and .86 for the CogAT composite (Lohman & Hagen, 2002). When analyzing the CogAT with the WJ-III, the "Interbattery confirmatory factor analyses showed that the general factors on the two batteries correlated r = .82" (Lohman, 2003, p. 1).

### *Achievement*

The second area of gifted testing was achievement. According to the Georgia Resource Manual for Gifted Education Services:

> Norm-referenced achievement tests shall be the most current editions of tests, or editions approved by the GaDOE, that measure reading skills, including comprehension, and shall yield a total reading score and/or a total mathematics score based upon a combination of scores in mathematics concepts and applications. These tests shall have been reviewed for bias and are normed on a nationally representative sample with respect to race, religion, national origin, sex, disabilities, and economic background within a 10-year period to administration. (Georgia Department of Education, 2014, p. 28)

Students meeting requirements in the area of achievement must score "at or above the 90$^{th}$ percentile on the total battery, total math, or total reading" (p. 28) sections of any achievement test that meets the requirements described above.

The achievement test primarily represented in this study was the California Achievement Test (CAT) which, is used to measure achievement in Reading/Language Arts, Mathematics, and Supplementary Content Areas for students ranging from kindergarten through high school. The Reading/Language Arts portion of the CAT includes subtests in Word Analysis, Vocabulary, Comprehension, Spelling, Language

Mechanics, and Language Expression. The Mathematics portion includes Mathematics Computation as well as Math Concepts and Applications. For our purposes, students must score at or above the 90th percentile on total math, total reading, or total battery.

Reliability coefficients on the CAT ranged from .80 to .90 on various subtests at each grade level within the battery; but, the highest reliability was on the composite total battery score (Cizek, 1998). Scores can be reported in percentile ranks, stanines, grade equivalents, normal-curve equivalents, and scale scores; percentile rank was used in this study based on the requirements from the Georgia Department of Education (2014). Local systems make the decision to either score the tests by hand or submit to the publisher. The data collected for this study were manually scored by the local school counselors.

Validity on any achievement test is only evident to the extent to which the test reflects the content for the ages, grade levels, subject areas that are tested. The reliability and validity data are similar to the data found in other major achievement assessments (Cizek, 1998) and all show strong evidence of content validity due to the process of building these types of assessments on the foundation of current curriculum materials, textbooks, and teaching practices.

### *Creativity*

The third area of gifted testing was creativity. According to the Georgia Resource Manual for Gifted Education Services:

> Norm-referenced tests of creative thinking shall be the most current editions of tests, or editions approved by the GaDOE, that provide scores of fluency, originality, and elaboration. These tests shall have been reviewed for bias and are

> normed on a nationally representative sample with respect to race, religion, national origin, sex, disabilities, and economic background within a 10-year period prior to administration. (Georgia Department of Education, 2014, p. 29)

Students meeting criteria in the area of creativity must score at or above the 90th percentile on a creativity instrument meeting the description above. There are two types of instruments used for assessing creativity that meet the requirements: norm-referenced tests and rating scales. Both types were used in this study.

The Torrance Test of Creative Thinking (2010), or TTCT, is used in this study for students tested in kindergarten through third grade. The TTCT is composed of five subscales which meet the requirement of the State of Georgia's description of creativity as described above. The subscales are fluency, originality, elaboration, abstractness of titles, and resistance to premature closure (Appendix C). Data are gathered by age or grade and are norm-referenced. All five subscales are scored and totaled to produce a standard score which measures "an overall indicator of creative strength" (Kim, 2006, p. 5).

Reliability using Kuder-Richardson 21 on the TTCT ranged between .89 and .94. Interrater reliability was greater than .90. Validity studies have been conducted on the TTCT from as far back as the 1970s to present day where data were longitudinally analyzed through following students into adulthood over a 40-year period (Kim, 2006). The creative achievements of these individuals were studied and the results showed that the TTCT was a more significant predictor of creativity with a standardized path coefficient of .60 than IQ which was .19 (Kim, 2006).

The TTCT offers two types of tests: verbal and figural. This study reported results for the figural portion of the test. Students were given separate sections of the test, all of which have partial line drawings with simple instructions to use the given lines to complete an image and give it a title. The products were then scored using the five subscales of fluency, originality, elaboration, abstractness of titles, and resistance to premature closure. Administration of the test is standardized with specific, yet simplistic, instructions. Scoring of the test can only be completed by individuals who have been trained and certified to score the TTCT.

The Gifted Evaluation Scale-Second Edition (GES-2) is a checklist inventory consisting of five subscales associated with the characteristics of giftedness identified in federal and state regulations: intelligence, creativity, specific academic aptitude, leadership ability, and performing and visual arts, along with an optional subscale for motivation (McCarney & Arthaud, 2009). For our purposes, the GES-2 is used to assess creativity as checklist with frequency-referenced quantifiers rated on a five point scale. Anyone who is familiar with the student can complete the checklist and it takes approximately 20 minutes. In this study, the GES-2 was used with students tested in fourth and fifth grades. The internal consistency of the GES-2 was .99 for the total scale using the coefficient alpha and the test-retest reliability yielded correlation coefficients that exceeded .92 for each of the six subscales (McCarney & Arthaud, 2009).

### *Motivation*

The fourth and final area of gifted testing was motivation. According to the Georgia Resource Manual for Gifted Education Services, "Rating scales used to qualify student motivation shall differentiate levels such that judgments may equate to the 90$^{th}$

percentile. If a rating scale is used to evaluate motivation, a rating scale shall not be used to evaluate creativity" (Georgia Department of Education, 2014, p. 29). Students may be evaluated on a standardized motivational characteristics rating scale or observed by an evaluator on a structured scale. For the purpose of this study, data were collected on both instruments, depending on the grade level of the student tested.

Students tested in kindergarten through third grade were evaluated for motivation using the GES-2. The validity and reliability were described above on all six subscales of the instrument and apply here. The rating scales were completed by the teacher in reference to the student on items such as use of vocabulary, use of new and creative ideas, independent goal setting, and transfer of thought from one application to another (McCarney & Arthaud, 2009).

However, students in grades four and five were given an instrument called the Children's Academic Intrinsic Motivation Inventory (CAIMI). The CAIMI is a self-assessed inventory of motivation in the areas of reading, math, social studies, science, and school in general. "The CAIMI was developed to measure enjoyment of learning, an orientation toward master; curiosity; persistence; task-endogeny; and the learning of challenging, difficult, and novel tasks" (Gottfried, Fleming, & Gottfried, 1998, p. 1453). This tool was designed for upper elementary students and beyond, thus the decision to use a different tool in kindergarten through third grades. Each subject area assessed on the CAIMI has 26 questions, 24 of which are based on a five point Likert scale. The other two questions are designed to produce a forced choice. The questions in each subject area were designed to be identical except in reference to the subject in question, thus structuring the assessment to be free of response biases (Gottfried, 1985). The

questions were designed to elicit a high or low response representative of the requisite level of motivation. The CAIMI questions typically allow students to rate the degree to which they enjoy challenge, enjoy learning new things, or enjoy specific content areas.

Reliability coefficient alphas for the CAIMI range from .89 to .95 on each of the subscales including the general subscale which had the lowest reliability coefficient alpha of .83 (Gottfried, Marcoulides, Gottfried, & Oliver, 2009). Validity was established in the areas of anxiety, perception of competence, and achievement; positive and negative correlations were obtained (Gottfried, 1985).

## Procedures

After applying for approval from the Institutional Review Board (Appendix D) and the local school board (Appendix E), the researcher obtained data from the school counselors from each elementary school while maintaining confidentiality. Each set of student data was assigned a random number, and then the identification of the students was destroyed. Student data were entered into a spreadsheet to include ethnicity, gender, grade level, school, and assessment data for the strict purpose of the study. Specifically, data on the four areas of gifted assessment were analyzed: mental ability, achievement, creativity, and motivation.

The researcher first examined the gifted records of all kindergarten through fifth grade students who were tested for gifted services from one South Georgia county from 2010-2015. The students were separated into five groups: African American, Asian, Caucasian, Hispanic, and "Other" students. For the purpose of this study, the data belonging to the few students who are not identified in one of the first four subgroups were designated as "Other." For research question one, chi-square analysis was used to

determine the frequency of each pattern of qualification into gifted programming by the combination of gifted tests passed. MANOVA was used in question two to identify any significant differences that existed in the mean scores of the four gifted assessments for each racial population. Post-hoc analyses using univariate ANOVA's with Bonferroni correction were then run to further analyze each pattern. For question three, a comparison of means with ANOVA was used to determine significant differences between subgroups who qualified and who were representative of the total school population. Results are described in Chapter 4.

## Data Analysis

The data for this study were analyzed using One-way MANOVA with post hoc ANOVAs, chi-square tests, and mean comparisons because the purpose of the analysis was description of the variables both independently and in combination, while ruling out multicollinearity of the variables (Mertler & Vannata, 2005). The statistical analyses were performed using The Statistical Package for the Social Sciences (SPSS). The alpha level, or level at which the researcher determined the level of statistical comparison in the analysis of the data (Mertler & Vannata, 2005), determined for this study was set at .05. The test scores used in this analysis were converted from percentile scores to Normal Curve Equivalent scores to gain a more accurate description of significance.

# Chapter IV

## DATA ANALYSIS AND RESULTS

The purpose of this study was to identify patterns of gifted qualification as defined by the criteria of qualification set forth by the State of Georgia among African American, Asian, Caucasian, Hispanic, and "Other" subgroups. In addition, the researcher wanted to determine if any of the above mentioned ethnic subgroups scored significantly higher on any one of the four gifted tests of mental ability, achievement, creativity, and/or motivation for the purpose of efficiently and effectively identifying these students for gifted services. The researcher also analyzed the percentage of students who were served for gifted services to determine if this number appropriately reflected the total population within each ethnic subgroup defined as African American, Asian, Caucasian, Hispanic, and "Other." The research methods included descriptive statistics and multivariate analysis of variance.

The researcher sought to answer the following research questions:

1. Are there significant mean differences in the combination of qualifying gifted criteria among African American, Asian, Caucasian, Hispanic, and "Other" students in kindergarten through fifth grade?
2. Are there significant mean differences in the specific qualifying scores of African American, Asian, Caucasian, Hispanic, and "Other" students on each of the four areas of mental ability, achievement, creativity, and motivation among kindergarten through fifth grade students?

3. Are there significant frequency differences in the percentage of students in gifted programs as compared to the overall school population among African American, Asian, Caucasian, Hispanic, and "Other" students in kindergarten through fifth grade?

A convenience sample of students ($n$ = 488) was selected for the purpose of this study. All students in this sample were referred and tested for gifted services from 2010-2015 in one South Georgia School System. Of this sample, 232 (47.5%) students were male and 256 (52.5%) were female. By ethnicity, 324 (66.4%) students were Caucasian, 94 (19.3%) students were African American, 47 (9.6%) students were Hispanic, 16 (3.3%) students were Asian, and 7 (1.4%) students were classified as "Other". Students' grade level at the time of testing was distributed as follows: 61 (12.5%) students were in kindergarten; 86 (17.6%) students were in first grade; 74 (15.2%) students were in second grade; 66 (13.5%) students were in third grade; 68 (13.9%) students were in fourth grade; 86 (17.6%) students were in fifth grade; 47 (9.6%) students were listed as "grades K-5" with specified grade level not recorded.

## Results

Research Question 1: Are there significant mean differences in the combination of qualifying gifted criteria among African American, Asian, Caucasian, Hispanic, and "Other" students in kindergarten through fifth grade? Pearson's chi-square analysis was conducted through the construction of a cross-tabulation consisting of the students' ethnicity by the combination of qualifying scores. Scores were categorized by specific patterns of qualification then given a nominal variable. For example, students who qualified through mental ability and achievement only were denoted as category 1.

Students who qualified through mental ability, achievement, and creativity were denoted as category 2. See Table 1 for all categories analyzed.

Table 1

*Patterns of Gifted Qualification*

| Value | Option A/B | Mental Ability | Achievement | Creativity | Motivation |
|---|---|---|---|---|---|
| 1 | A | Y | Y | N | N |
| 2 | A | Y | Y | Y | N |
| 3 | A | Y | Y | N | Y |
| 4 | A | Y | Y | Y | Y |
| 5 | B | N | Y | Y | Y |
| 6 | B | Y | N | Y | Y |

First, the frequency of students who qualified through Option A or B was calculated (Table 2) using Bonferroni Error Corrected $\alpha = .003$ as criterion for significance. Of the 488 students who were tested, 305 (62.5%) did not qualify; 63 (12.9%) qualified through Option A; and 120 (24.6%) qualified through Option B (Figure 1). The results of this test were statistically significant at $\chi^2$ (8, $N = 488$) = 47.341, $p < .001$. Caucasian students showed a higher number of observed students who qualified through Option A ($n_o = 54$) than expected ($n_e = 41.83$); a higher number of observed students who qualified through Option B ($n_o = 94$) than expected ($n_e = 79.67$); and a lower number of students who did not qualify ($n_o = 176$) than expected ($n_e = 202.50$). Each of these observed counts was statistically significant at $p < .001$ when the adjusted residual was transformed to a significance variable (Beasley & Schumaker, 1995; Garcia-Perez &

Nunez-Anton, 2003). African American students conversely showed a lower number of observed students who qualified through Option A ($n_o = 2$) than expected ($n_e = 12.14$); and a higher number of observed students who did not qualify ($n_o = 78$) than expected ($n_e = 58.75$). Each of these observed counts was statistically significant at $p < .001$ when the adjusted residual was transformed to a significance variable (Beasley & Schumaker, 1995; Garcia-Perez & Nunez-Anton, 2003). Finally, "Other" students showed a higher number of observed students who qualified through Option A ($n_o = 4$) than expected ($n_e = .90$) which was statistically significant at $p < .001$; however, since the expected count was less than 5, these results will be used with caution.

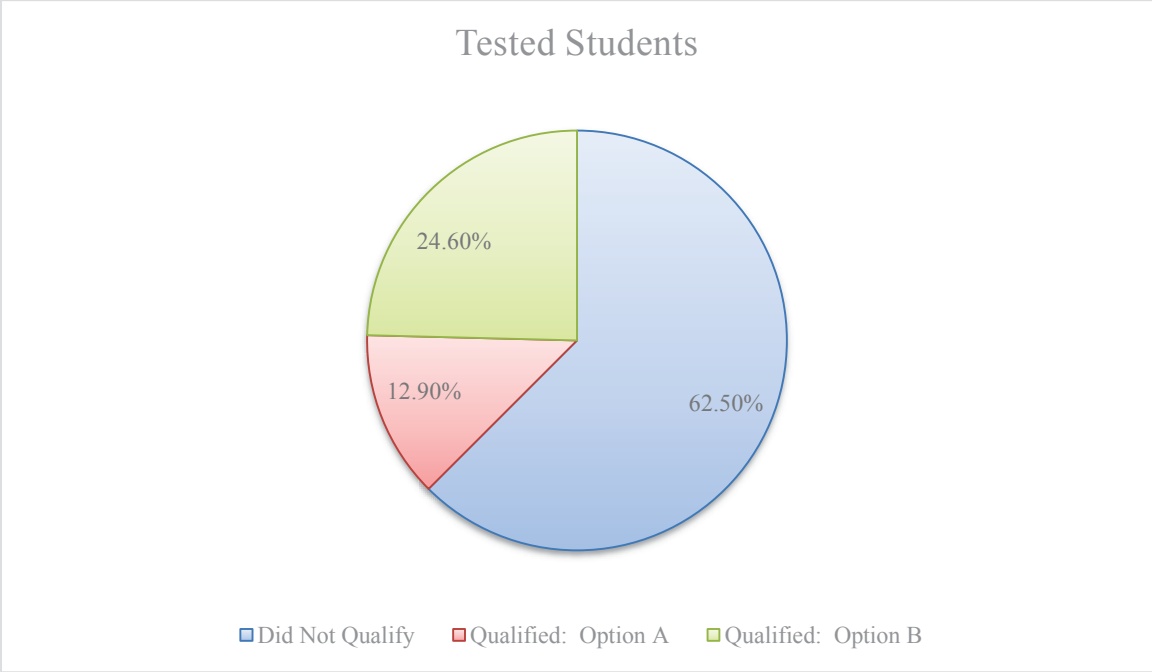


Figure 1
*Percentage of Qualification Pattern of 488 Tested Students*

Table 2

*Frequency of Option A or B by Race*

| | Did Not Qualify | | | Option A | | | Option B | | |
|---|---|---|---|---|---|---|---|---|---|
| Race | $n_o$ | $n_e$ | $p$ | $n_o$ | $n_e$ | $p$ | $n_o$ | $n_e$ | $p$ |
| Caucasian | 176 | 202.5 | .000 | 54 | 41.83 | .001 | 94 | 79.67 | .001 |
| Afr. Amer. | 78 | 58.75 | .000 | 2 | 12.14 | .001 | 14 | 23.11 | .015 |
| Hispanic | 36 | 29.38 | .036 | 2 | 6.07 | .063 | 9 | 11.56 | .363 |
| Asian | 13 | 10 | .114 | 1 | 2.07 | .418 | 2 | 3.93 | .254 |
| Other | 2 | 4.38 | .061 | 4 | .90 | .000 | 1 | 1.72 | .522 |

Continuing with Research Question 1, the specific qualifying patterns were analyzed based on the categories described in Table 1. Statistical significance was calculated with Bonferroni error correction at $\alpha < .001$ when the adjusted residual was transformed to a significance variable (Beasley & Schumaker, 1995; Garcia-Perez & Nunez-Anton, 2003). The results of this test (Table 3) were statistically significant at $\chi^2$ (24, $N = 488$) = 61.240, $p < .001$. The researcher also used the Likelihood Ratio Value of 56.414 based on the number of cells that had an expected value less than 5 where the minimum expected count was .03. Results from the analysis indicate that 17.7% of the variance in the pattern of qualification can be explained by the ethnicity of the students. The observed count of "Other" students ($n_o = 4$) who qualified through the pattern of mental ability/achievement/motivation was higher than the expected count ($n_e = .50$) which was statistically significant ($p < .001$). The patterns in Table 3 are listed by number as designated by Table 1.

Table 3

*Frequency of Qualifying Patterns by Race*

| | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RACE | *N* | *p* | *N* | *p* | *N* | *p* | *N* | *p* | *N* | *p* | *N* | *P* |
| Caucasian | 2 | .312 | 2 | .312 | 31 | .020 | 19 | .042 | 83 | .003 | 11 | .350 |
| Afr.Amer. | 0 | .490 | 0 | .490 | 1 | .008 | 1 | .073 | 12 | .019 | 2 | .631 |
| Hispanic | 0 | .646 | 0 | .646 | 1 | .136 | 1 | .407 | 8 | .412 | 1 | .749 |
| Asian | 0 | .795 | 0 | .795 | 0 | .246 | 1 | .734 | 2 | .363 | 0 | .495 |
| Other | 0 | .865 | 0 | .865 | 4 | .000 | 0 | .562 | 1 | .631 | 0 | .631 |

As a point of interest, the researcher also analyzed the pattern of qualification among the gender of the students. Of the students tested ($N$ = 488), 232 were male (47.5%) and 256 were female (52.5%). Of the students tested, 64.2% of males and 60.9% of females did not qualify. Of the students tested, 12.5% of males and 13.3% of females qualified through Option A. Of the students tested, 23.3% of males and 25.8% of females qualified through Option B. The results of this test were not statistically significant at $\chi^2$ (2, $N$ = 488) = .579, $p$ = .749.

Research Question 2: Are there significant mean differences in the specific qualifying scores of African American, Asian, Caucasian, Hispanic, and "Other" students on each of the four areas of mental ability, achievement, creativity, and motivation among kindergarten through fifth grade students? A multivariate analysis of variance (MANOVA) was conducted with race as the independent variable and each of the four test scores as the dependent variables. All four test scores were used for all students whether or not the scores were high enough to count as a qualifying factor in order to gain a complete analysis of mean for each race of students. MANOVA results revealed that there was a significant difference between the races when considered jointly on the variables of four gifted tests (mental ability, achievement, motivation, and creativity) in

mean scores, Wilks' $\Lambda = .869$, $F(16, 488) = 4.307$, $p < .001$, partial $n^2 = .034$. Analysis of variance (ANOVA) was conducted on each dependent variable as a follow-up test to MANOVA (Table 4). There was a significant difference between races on mental ability, $F(4, 483) = 7.495$, $p < .001$, partial $n^2 = .058$; on achievement, $F(4, 483) = 11.277$, $p < .001$, partial $n^2 = .085$; and on creativity, $F(4, 483) = 3.358$, $p = .010$, partial $n^2 = .027$. However, there was not a significant difference between races on motivation, $F(4, 483) = 1.510$, $p = .198$, partial $n^2 = .012$.

Table 4

*Tests of Between-Subjects Effects on Race with each Dependent Variable: Mental Ability, Achievement, Creativity, Motivation*

| DV | SS | *df* | MS | *F* | *p* |
|---|---|---|---|---|---|
| Mental Ability | 4930.442 | 4 | 1232.610 | 7.495 | .000 |
| Achievement | 7977.745 | 4 | 1994.436 | 11.277 | .000 |
| Creativity | 6492.792 | 4 | 1623.198 | 3.358 | .010 |
| Motivation | 1126.393 | 4 | 281.598 | 1.510 | .198 |

Table 5 shows the descriptive statistics of mean and standard deviation for each of the four gifted assessments by race.

Table 5

*Means and Standard Deviations for Each of the Four Gifted Assessments by Race*

| | Mental Ability | | Achievement | | Creativity | | Motivation | |
|---|---|---|---|---|---|---|---|---|
| Race | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Caucasian | 73.64 | .712 | 74.74 | .739 | 71.91 | 1.221 | 83.77 | .759 |
| Afr. Am. | 66.23 | 1.323 | 65.83 | 1.372 | 66.94 | 2.268 | 80.26 | 1.409 |
| Hispanic | 72.77 | 1.871 | 69.96 | 1.940 | 62.30 | 3.207 | 81.13 | 1.992 |
| Asian | 74.56 | 3.206 | 70.38 | 3.325 | 64.13 | 5.496 | 82.88 | 3.414 |
| Other | 83.00 | 4.847 | 88.57 | 5.027 | 57.00 | 8.309 | 86.29 | 5.162 |

*Mental Ability*

ANOVA results of the performance on the gifted test of mental ability by tested students in each ethnic category showed significant differences, although the effect size indicated that only 5.8% of the variance in scores could be explained by race. Table 6 represents the results of the one-way ANOVA for mental ability, $F(4, 483) = 7.495$, $p < .001$, partial $n^2 = .058$.

Table 6

*ANOVA of Mean Scores of Mental Ability by Race*

| Source | SS | *df* | MS | *F* | *P* | $n^2$ |
|---|---|---|---|---|---|---|
| Between | 4930.44 | 4 | 1232.61 | 7.495 | .000 | .058 |
| Within | 79434.24 | 483 | 164.46 | | | |
| Total | 2634646.00 | 488 | | | | |

Fisher's LSD post hoc was conducted to determine which racial groups were significantly different in mental ability. Results on this post hoc test revealed that African American students had significantly lower mean scores for mental ability than all other student populations. The Hispanic population also revealed a significant difference from the student population classified as "Other."

*Achievement*

Performance on the gifted test of achievement was analyzed using ANOVA. Results for this test revealed that there were significant differences in the mean scores of students by race. Table 7 represents the results of the one-way ANOVA for achievement scores of students by race, $F(4, 483) = 11.277$, $p < .001$, partial $n^2 = .085$.

Table 7

*ANOVA of Mean Scores of Achievement by Race*

| Source | SS | *df* | MS | *F* | *P* | $n^2$ |
|---|---|---|---|---|---|---|
| Between | 7977.75 | 4 | 1994.44 | 11.277 | .000 | .085 |
| Within | 85423.83 | 483 | 176.86 | | | |
| Total | 2666578.00 | 488 | | | | |

Fisher's LSD post hoc was conducted to determine which racial groups were significantly different in the area of achievement. Results on this post hoc test revealed that Caucasian students scored a significantly higher mean score than African American and Hispanic students. Students classified as "Other" scored significantly higher than all other racial populations (Caucasian, African American, Hispanic, and Asian).

*Creativity*

Performance on the gifted test of creativity was also analyzed using ANOVA. Results for this test revealed that there were significant differences in the mean scores of students by race. Table 8 represents the results of the one-way ANOVA for creativity scores of students by race, $F(4, 483) = 3.358$, $p = .010$, partial $n^2 = .027$.

Table 8

*ANOVA of Mean Scores of Creativity by Race*

| Source | SS | *df* | MS | *F* | *P* | $n^2$ |
|---|---|---|---|---|---|---|
| Between | 6492.79 | 4 | 1623.20 | 3.358 | .010 | .027 |
| Within | 233443.60 | 483 | 483.32 | | | |
| Total | 2600992.00 | 488 | | | | |

Fisher's LSD post hoc was conducted to determine which racial groups were significantly different in the area of creativity. Results on this post hoc test revealed only that Caucasian students' mean score was significantly higher than Hispanic students.

As a point of interest, the mean scores of the four gifted tests (mental ability, achievement, creativity, and motivation) were analyzed by gender using MANOVA. MANOVA results revealed that there was no significant difference between gender when considered jointly on the variables of four gifted tests (mental ability, achievement, motivation, and creativity) in mean scores, Wilks' $\Lambda = .995$, $F(4, 483) = .610$, $p = .655$, partial $n^2 = .005$. The descriptive statistics for this analysis are represented in Table 9.

Table 9

*Means and Standard Deviations for Each of the Four Gifted Assessments by Gender*

| | Mental Ability | | Achievement | | Creativity | | Motivation | |
|---|---|---|---|---|---|---|---|---|
| Gender | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Male | 73.02 | 13.28 | 72.55 | 13.55 | 68.82 | 22.31 | 82.83 | 14.92 |
| Female | 71.63 | 13.05 | 72.68 | 14.14 | 70.22 | 22.12 | 82.85 | 12.50 |

Research Question 3: Are there significant frequency differences in the percentage of students in gifted programs as compared to the overall school population among African American, Asian, Caucasian, Hispanic, and "Other" students in kindergarten through fifth grade? A comparison of means table was constructed for this question with an ANOVA report generated to determine if the mean differences in the percentage of students who qualified for gifted services each year among African American, Asian, Caucasian, Hispanic, and "Other" students. The results of this test (Table 10) were not statistically significant at $\alpha < .05$; $F(4, 20) = 2.765$, $p = .056$, partial $n^2 = .356$. Results from this ANOVA are displayed in Table 10.

Table 10

*ANOVA of Mean Percentages of Qualifying Students/Enrolled Population by Race*

| Source | SS | *df* | MS | *F* | *p* | $n^2$ |
|---|---|---|---|---|---|---|
| Between (combined) | 28.577 | 4 | 7.144 | 2.765 | .056 | .356 |
| Within | 51.668 | 20 | 2.583 | | | |
| Total | 80.245 | 24 | | | | |

Percentage of students who qualified each year for gifted programming was calculated based on total enrollment by racial population: African American, Asian, Caucasian, Hispanic, and "Other" (Table 11). The results show that the five year mean percentage of each population of students who qualified each year for gifted programs was higher for Asian students (3.12%) and Caucasian students (2.76%) and lower for Hispanic students (.74%) and African American students (.42%). "Other" students who qualified each year represented their total population by 1.79%.

Table 11

*Means and Standard Deviations for Percentage of Qualification into Gifted Programs based on Total Enrollment by Race*

| | Caucasian | African American | Hispanic | Asian | Other | |
|---|---|---|---|---|---|---|
| Year | *M* | *M* | *M* | *M* | *M* | *SD* |
| 2011 | 3.14 | .31 | .78 | 6.25 | .00 | 2.630 |
| 2012 | 2.77 | .52 | 1.33 | .00 | 4.55 | 1.844 |
| 2013 | 2.97 | .78 | 1.25 | 5.00 | .00 | 1.999 |
| 2014 | 2.41 | .12 | .00 | .00 | 2.17 | 1.236 |
| 2015 | 2.49 | .36 | .32 | 4.35 | 2.94 | 1.740 |
| Total | 2.76 | .42 | .74 | 3.12 | 1.93 | 1.829 |
| *SD* | .310 | .248 | .577 | 2.929 | 1.962 | |

One of the issues related to the data collected was that the sample sizes of each population were very different. When comparing the percentages and means of each

student population, the Asian student subgroup and the subgroup classified as "Other" were drastically smaller than the Caucasian, African American, and Hispanic populations. Therefore, the numbers will not be generalizable for further use. The number of students enrolled and qualified within each population by school year will be represented in Tables 12-16 to show the calculation of percentage and mean.

Table 12

*2010-2011: Percent of Students Qualified for Gifted Programs based on Total Enrollment by Race*

| Race | Enrolled ($N_e$) | Qualified ($N_q$) | Percent (M) | *SD* |
|---|---|---|---|---|
| Caucasian | 1083 | 34 | 3.14 | .310 |
| African American | 649 | 2 | .31 | .248 |
| Hispanic | 258 | 2 | .78 | .577 |
| Asian | 16 | 1 | 6.25 | 2.929 |
| Other | 49 | 0 | .00 | 1.961 |
| Year Total | 2055 | 39 | 2.096 | 2.630 |

Table 13

*2011-2012: Percent of Students Qualified for Gifted Programs based on Total Enrollment by Race*

| Race | Enrolled ($N_e$) | Qualified ($N_q$) | Percent (M) | *SD* |
|---|---|---|---|---|
| Caucasian | 1156 | 32 | 2.77 | .310 |
| African American | 765 | 4 | .52 | .248 |
| Hispanic | 301 | 4 | 1.33 | .577 |
| Asian | 19 | 0 | .00 | 2.929 |
| Other | 44 | 2 | 4.55 | 1.961 |
| Year Total | 2285 | 42 | 1.83 | 1.844 |

Table 14

*2012-2013: Percent of Students Qualified for Gifted Programs based on Total Enrollment by Race*

| Race | Enrolled ($N_e$) | Qualified ($N_q$) | Percent (M) | *SD* |
|---|---|---|---|---|
| Caucasian | 1177 | 35 | 2.97 | .310 |
| African American | 765 | 6 | .78 | .248 |
| Hispanic | 319 | 4 | 1.25 | .577 |
| Asian | 20 | 1 | 5.00 | 2.929 |
| Other | 42 | 0 | .00 | 1.961 |
| Year Total | 2323 | 46 | 2.00 | 1.999 |

Table 15

*2013-2014: Percent of Students Qualified for Gifted Programs based on Total Enrollment by Race*

| Race | Enrolled ($N_e$) | Qualified ($N_q$) | Percent (M) | *SD* |
|---|---|---|---|---|
| Caucasian | 1164 | 28 | 2.41 | .310 |
| African American | 802 | 1 | .12 | .248 |
| Hispanic | 324 | 0 | .00 | .577 |
| Asian | 22 | 0 | .00 | 2.929 |
| Other | 46 | 1 | 2.17 | 1.961 |
| Year Total | 2358 | 30 | .94 | 1.236 |

Table 16

*2014-2015: Percent of Students Qualified for Gifted Programs based on Total Enrollment by Race*

| Race | Enrolled ($N_e$) | Qualified ($N_q$) | Percent (M) | *SD* |
|---|---|---|---|---|
| Caucasian | 1124 | 28 | 2.49 | .310 |
| African American | 832 | 3 | .36 | .248 |
| Hispanic | 316 | 1 | .32 | .577 |
| Asian | 23 | 1 | 4.35 | 2.929 |
| Other | 68 | 2 | 2.94 | 1.961 |
| Year Total | 2363 | 35 | 2.092 | 1.740 |

## Summary

Chapter 4 described the results of the data analysis on the gifted test scores and the gifted qualification of students in kindergarten through fifth grade among African

American, Asian, Caucasian, Hispanic, and "Other" subgroups different from those defined. Research Question 1 was analyzed using chi-square through a cross tabulation of data where the patterns of qualification were categorized with a nominal variable. Patterns of qualification were analyzed by Option A/B as defined by the State of Georgia gifted program standards. Patterns were also broken into six possible combinations of the four gifted assessments and analyzed by race. For a point of interest, the analysis by gender was also reported.

Data from Research Question 2 were analyzed using One-Way MANOVA to report any significant differences on each of the four gifted assessments by race. When significant differences were found, post hoc analysis was conducted to determine specific areas of significance between the gifted areas by student subgroup. Once again, as a point of interest, One-Way MANOVA was also conducted to report results of any differences on the four areas of gifted assessment by gender.

Research Question 3 was analyzed with a comparison of means for the percentage of student population that qualified for gifted services based on total school enrollment for each student subgroup. Although sample sizes for each population was very different, percentages were analyzed and reported, but mean differences will be reported with caution for those student populations whose numbers were small.

Chapter 5 includes a discussion and summary of the analyses and results that were reported in Chapter 4. Chapter 5 also includes a summary of the study, the findings, the implications, and the need for further research on this topic of gifted assessments by racial populations.

# Chapter V

## SUMMARY AND DISCUSSION

The State of Georgia has been a leader in the area of gifted education, and among the first states to mandate and fund gifted services (Felton, 2008). Even in the area of identifying students for gifted services, Georgia legislation has continued to revise its position and definition of the process in order to increase the number of students served (Georgia Department of Education, 2014). When the State of Georgia passed legislation to enact the Multiple Criteria Rule for identifying gifted students in 1995 known as Rule 160-4-2-.38, opportunities for students to receive the services that they needed increased dramatically (Georgia Department of Education, 2014).

However, although the procedures of testing students for gifted services has expanded, the practice of referring and screening students still has many limitations resulting in the exclusion of students who need these services (Robertson et al., 2011). In the midst of all of these changes to increase participation in gifted programs, researchers have continued to study the patterns of identification to more efficiently identify gifted students (McBee, Shaunessy, & Matthews, 2012).

The purpose of this study was to continue to analyze the patterns of identification to better understand the qualities or characteristics that are specific to particular student populations for more effective, efficient referral practices. Specifically, the researcher analyzed the patterns of gifted qualification based on the combination of the four gifted assessments in the areas of mental ability, achievement, creativity, and motivation among African American, Asian, Caucasian, Hispanic, and "Other" student populations. The

researcher also analyzed each of the four specific test scores by racial population. Finally, the percentage of students who qualified for gifted services based on the total enrollment of each student population was analyzed to determine proportionality between the racial subgroups.

The researcher used a non-experimental design employing the use of descriptive statistics through SPSS. The independent variable was race and the dependent variables were the four gifted assessments and patterns of gifted qualification.

## Discussion

The first research question was: Are there significant mean differences in the combination of qualifying gifted criteria among African American, Asian, Caucasian, Hispanic, and "Other" students in kindergarten through fifth grade? First, the frequency of qualification of gifted students by Option A (Psychometric Approach), Option B (Multiple Criteria Approach), or those who did not qualify were analyzed by race. Then the six specific combinations of gifted criteria were given a categorical variable then analyzed with race in a cross tabulation using Pearson's chi-square analysis. When these possible qualifications were analyzed, it was determined that Caucasian students showed a higher number of students who qualified in both Option A and Option B than was expected and a lower number who did not qualify than was expected. Each of these numbers was statistically significant. However, African American students showed a lower number who qualified through Option A and a higher number of students who did not qualify than was expected. These numbers were also statistically significant. These findings were consistent with previous research which showed that a higher number of

Caucasian students were represented and a lower number of African American students were represented in gifted education (Ford et al., 2013; NAGC, 2012).

However, the total percentages of students who qualified through Option A, Option B, or those who did not qualify are not consistent with previous research. In 2007, a study in South Carolina indicated that more students were identified through Option A (74%) than Option B (26%) (Van Tassel-Baska, Feng, & de Brux, 2007). In 2009, a study similar to this one was conducted in Georgia and found no significant difference in students identified through Option A ($n = 24$) or Option B ($n = 26$). However, this was a small study and the researcher recommended the need for further research because the findings did not support previous research (Stephens, 2009). The findings of this research indicated that of the students who qualified for gifted services ($n = 183$), twice as many students qualified through Option B (65.6%) over Option A (34.4%). A closer look into the percentages revealed that all subgroups of students with the exception of the small group of students described as "Other" ($n = 7$) had a higher percentage qualify through Option B, the Multiple Criteria Approach. Although this finding is not supported by the two studies, it is indicative of the work by Mary Frasier and the team of researchers who redefined gifted testing in the State of Georgia in 1995. Their work was based on the more liberal definitions of giftedness from Renzulli, Sternberg, Gardner, Tannenbaum, and Torrance which ultimately expanded gifted testing to include creativity and motivation (Frasier et al., 1995). This expansion was determined to increase the number of minority students who qualified for gifted services; however, it ultimately increased the number of all students who qualified (Georgia Department of Education, 2014) as this study revealed.

This study differed from previous research in that the scores of students who were tested but did not qualify were used in all analyses. In research question one, the percentage of students who did not qualify was 62.5% overall. But when analyzed by race, the results were interesting to note. Of the Caucasian students tested, 54% did not qualify; of the African American students tested, 83% did not qualify; of the Hispanic students tested, 77% did not qualify; of the Asian students tested, 81% did not qualify; and of the "Other" students tested, 29% did not qualify. These data revealed a larger percentage of minority students, including Asian students, not qualifying for gifted services when tested. Underrepresentation of minority students, particularly African Americans and Hispanics is documented in the literature (Ford et al., 2013; Ford et al., 2005; Harris et al., 2009). The high percentage of Asian students not qualifying in this study is not supported by the literature; however, the number of Asian students tested in this study was not a large population ($n$ = 16) which could explain the inconsistency. However, one of the possible reasons for underrepresentation in the research was "deficit thinking" by educators (Ford, 2014) or limited referrals by educators resulting in the exclusion of students who would possibly qualify (Robertson et al., 2011). The high percentage of students not qualifying in this study suggests that any underrepresentation would not be attributed to low or limited referrals on the part of the educators in this school system. However, the discrepancy between the percentage of Caucasian students and all other minority subgroups could be attributed to cultural bias in the tests (Harris, Plucker, Rapp, & Martinez, 2009). Because this study included data over the course of five years with various tests in each category, this is an area that extends beyond the scope of this study where further research would be needed.

Continuing with Research Question 1, the specific combinations of tests possible for gifted qualification were analyzed by race. Analyses showed that all races except the category classified as "Other" had more students qualify through achievement, creativity, and motivation than any other possible combination. Although these results were not statistically significant, they were consistent with the research that found that more students of all ethnicities were entering into gifted programming through the Multiple Criteria Option (Georgia Department of Education, 2014). This combination was also consistent with the previous research performed in the State of Georgia (Stephens, 2009) where this specific combination of achievement/ creativity/ motivation was the predominant pattern for qualifying into gifted programs. The group of students classified as "Other" had more students qualify through the combination of mental ability, achievement, and motivation which was statistically significant; however, the sample size was too small to be generalizable to any other study. Also, the number of African American students who qualified through the combination of mental ability, achievement, and motivation was less than the expected count which is also consistent with previous research that shows minority students tend to score lower on tests of mental ability and achievement (Davis & Rimm, 2004; Ford et al., 2005; Frasier et al., 1995).

These patterns are important because they support the multiple criteria approach of testing gifted students as the predominant factor in recruiting as many students as possible into gifted programming. Traditional psychometric approaches using only intelligence and achievement as factors for recruiting gifted students may result in the exclusion of many students who would benefit from gifted programs (Robertson et al., 2011). The use of multiple forms of assessment has been supported by research to be

more effective for recruiting an increased number of students into gifted programs (Ford, Moore, & Milner, 2005; Harris et al., 2007; Lohman, 2005; Pierce et al., 2007). The initial purpose for using multiple criteria in Georgia was to increase the number of minority students enrolled in gifted programs (Frasier et al., 1995). However, what research has shown, and what is supported by this study, is that the enrollment of all student populations has increased with the use of multiple criteria testing (Georgia Department of Education, 2014).

Research Question 2: Are there significant mean differences in the specific qualifying scores of African American, Asian, Caucasian, Hispanic, and "Other" students on each of the four areas of mental ability, achievement, creativity, and motivation among kindergarten through fifth grade students? One-way MANOVA was used to analyze the specific scores of each of the gifted tests by racial sub-group to determine if a mean difference existed. The results showed that there was a significant difference on the tests of mental ability, achievement, and creativity by race but not on motivation. On the gifted test of mental ability, the "Other" group of students and Asian students scored the highest followed by Caucasian and Hispanic students. African American students scored lower than all other groups on the area of mental ability, which was statistically significant. There was also a significant difference between lower scores of Hispanic students when compared to the highest group: "Other." However, the "Other" group had such a small sample size that the significance is not generalizable. These findings on mental ability scores are consistent with previous research that shows that minority populations, particularly Hispanic and African American students, score lower than Asian

and Caucasian students on the area of mental ability (Davis & Rimm, 2004; Ford et al., 2005; Harris et al., 2009).

Upon closer analysis of the data in this study, not only was the mean score lower for African American and Hispanic students, but only 4 African American students out of 78 tested students qualified for gifted services through a pattern which included the test of mental ability. Only 3 Hispanic students out of 47 tested qualified through a pattern which included the test of mental ability. When comparing these results with the purpose of this study which was ultimately to find ways to more efficiently recruit students for services, the data suggest that tests of mental ability are not efficient with minority students. According to Davis and Rimm (2004), IQ tests may be misleading indicators of a student's ability if the child comes from a culturally deprived or culturally different environment. Verbal tests of intelligence have been shown to limit the number of minority students enrolled (Ford et al., 2005; Harris et al., 2009). One study in Tennessee looked at predictors for IQ and found that the highest predictors of IQ are in the combination of achievement, creativity, and motivation. Therefore, the results in this study seem to support the evidence that in screening and recruiting gifted students, particularly minority students, characteristics of achievement, creativity, and motivation are the keys to finding those students who would be most likely to qualify for services.

The area of achievement showed higher scores by the "Other" group of students as well as the Caucasian students followed by the Asian students, the Hispanic students, and the African American students respectively. Caucasian students scored significantly higher than both African American and Hispanic students, and the students classified as "Other" scored significantly higher than all other racial populations (keeping in mind the

small sample size of this group yields these results as ungeneralizable). These results on the mean scores of achievement are consistent with previous research that shows minority populations, particularly Hispanic and African American, score lower than Asian and Caucasian students in the area of achievement (Davis & Rimm, 2004; Ford et al., 2005; Harris et al., 2009). Although the data from this study reveal that more minority students are included in gifted programs through the combination of achievement, creativity, and motivation, the mean scores in achievement are still significantly lower for African American and Hispanic students than their counterparts. Researchers suggest that this could be due to low expectations from educators (Ford et al., 2005) or cultural biases in the tests (Harris et al., 2009). The aforementioned study conducted in Tennessee (Edwards, 2008) indicated that achievement does predict IQ, but when creativity and motivation were added to the achievement analysis, the predictability was much higher. Therefore, the intentional search for gifted students, particularly minority students, should begin with highly creative, motivated students who have the ability to achieve and excel in environments that foster their strengths.

The area of creativity showed only that Caucasian students scored significantly higher than Hispanic students. In this area of testing, Caucasian students scored the highest followed by African American students, Asian students, Hispanic students, and "Other" students which is consistent with previous research that African American students yield higher results on tests of multiple criteria where products are expressive, non-verbal, and open ended (Davis & Rimm, 2004; Frasier et al., 1995; NAGC, 2008; Torrance, 1971). This area of creativity allows for students to express gifted characteristics in a way that other gifted assessments do not. Students are given open-

ended opportunities to distinguish their potential (Torrance, 1971) and set themselves apart on a level playing field. Because the mean scores of motivation did not display statistically significant differences between the races, this study further supports the argument for multiple criteria testing. Creativity and motivation are the key ingredients to providing open-ended opportunities for students to demonstrate gifted potential regardless of culture or socio-economic status.

A comparison of means table with ANOVA analysis was constructed for research question three: Are there significant frequency differences in the percentage of students in gifted programs as compared to the overall school population among African American, Asian, Caucasian, Hispanic, and "Other" students in kindergarten through fifth grade? The results of this test were noteworthy, although not statistically significant, in the differences by racial population of the percentage of students who are qualified each year to be served in gifted programs based on the total school population. The percentages each year of qualifying students were higher for Asian and Caucasian students and lower for African American and Hispanic students, which is consistent with previous research (Ford et al., 2013; NAGC, 2012).

## Conclusions

The purpose of this study was to determine if there was a pattern in the qualification of gifted students by race, or if there was a difference in each of the gifted assessments by race. In addition, the researcher wanted to determine the percentage of gifted students who are served in this South Georgia School System based on enrollment by ethnic populations and if that percentage was significant.

The first research question was: Are there significant mean differences in the combination of qualifying gifted criteria among African American, Asian, Caucasian, Hispanic, and "Other" students in kindergarten through fifth grade? To answer this research question, a frequency analysis was conducted through cross tabulation and Pearson's chi-square test was performed to determine if the frequency data were distributed differently first in the three possible combinations of did not meet, Option A, or Option B. Frequency results were different than the expected count for Caucasian students and African American students. Caucasian students showed a higher number who qualified through both Option A and Option B and a lower number than expected who did not qualify. There were 54 Caucasian students who qualified through Option A while only 41.83 were expected; 94 qualified through Option B while only 79.67 were expected. However, 176 Caucasian students did not qualify out of 324 tested while 202.5 were expected to not qualify.

Results from the African American population indicated that fewer students qualified through Option A than were expected and more students did not qualify than were expected. Of the 94 African American students who were tested, only 2 students qualified through Option A although 12 were expected to qualify, and 78 did not qualify for gifted services although only 58 were expected. Finally, the group of students classified as "Other" showed a higher number of students who qualified through Option A than were expected: 4 students qualified through Option A although only .90 were expected. Although these results were statistically significant, the small sample size of this group yields these results ungeneralizable and interesting at best.

Continuing with Research Question 1, six possible combinations of qualifying patterns were determined and named with a categorical variable. A cross tabulation frequency analysis was conducted with Pearson's chi-square test performed to determine if the frequency data were distributed differently among the six possible qualifying options. Frequency results were different than the expected results in several areas. The only frequency difference that was statistically significant after the Bonferroni error correction was the group of students classified as "Other:" they showed a higher number of students than expected to qualify under the combination of mental ability, achievement, and motivation than were expected. There were 4 students who qualified through this combination while the expected number was .50. This sample size is too small to be generalizable. There were other differences that were significant enough to be noteworthy. The number of Caucasian students who qualified through the combination of achievement, creativity, and motivation was higher than the expected count at 83 qualifying with only 70.38 expected. In fact, a pattern emerged where this combination of achievement, creativity, and motivation was the highest pattern for each of the ethnic populations with the exception of the group classified as "Other," although only the Caucasian group was significantly higher than expected. The African American students qualified significantly lower in the pattern of mental ability, achievement, and motivation than was expected at only 1 student qualifying when 7.13 were expected.

Findings of Research Question 1 support previous research in the argument where African American and Hispanic students are still not qualifying at the rate of Caucasian and Asian students despite efforts made to include multiple forms of assessment. However, this study differed from two previous studies (Stephens, 2009; Van Tassel-

Baska, Feng, & de Brux, 2007) that reported more students qualifying through Option A or reporting no significant difference. This study added to the initial research of Mary Frasier (1995) that proposed that more students would benefit by the addition of multiple criteria for gifted testing. The Georgia Department of Education (2014) continues to report the increase in the number of all gifted students, particularly minority students, since the addition of the Multiple Criteria rule: that more students are added through Option B such as the pattern of achievement, creativity, and motivation as the students in this study demonstrated. In fact, the primary reason for the institution of the Multiple Criteria Rule in the State of Georgia was through the research of Mary Frasier and her team (1995) which found that minority students were not being adequately represented through traditional testing, but the continued use of multiple criteria must be used to reach these students. Through this multiple criteria approach to gifted testing, it has been shown that not only minority students have increased enrollment, but percentages in all student populations have increased as was displayed in this study where the strongest qualifying combination was a multiple criteria approach of achievement, creativity, and motivation.

Also, underrepresentation of minority groups and overrepresentation of Caucasian students also continues to be a pattern according to the National Association for Gifted Children (2012). The pattern in this study confirmed that Caucasian students were significantly qualifying more than the expected number and African American students were significantly qualifying less. However, unique to this study, the scores of all students tested, not just the scores and patterns of students who qualified for gifted services were used. Therefore, the researcher had the opportunity to analyze the

percentage of students who did not qualify that were referred for testing alongside the percentage of students who did qualify by specific pathways. It was notable that a much lower percentage of Caucasian students did not qualify than all other subgroups. Initial analysis of this information suggests that the literature was still supported with more Caucasian students qualifying than all other groups. However, there was a discrepancy with the Asian population in this study. A high percentage of Asian students did not qualify that were tested, although the low numbers of Asian students in this study limit the use of this data. But, the high number of minority students not qualifying after being referred suggests that the reason for the underrepresentation of these minority populations is not due to lack of referrals by educators as reported by Ford et al. (2005). In fact, 83% of African American students and 77% of Hispanic students referred and tested did not qualify for services which represent a large number of students referred in each respective population. Furthermore, 62.5% of all students referred did not qualify for services in this five year period. This raises the question of why so many students in all populations are not qualifying. Researchers suggested there could still be a lack of awareness by educators of true gifted characteristics in the referral process (Gordon, 2005; Roberts & Jolly, 2012; Speirs Neumeister et al., 2007), or there could be continued cultural bias in the tests used (Davis & Rimm, 2004; Ford et al., 2005). These questions extend beyond the scope of this study and could be a topic of further research.

Research Question 2 was: Are there significant mean differences in the specific qualifying scores of African American, Asian, Caucasian, Hispanic, and "Other" students on each of the four areas of mental ability, achievement, creativity, and motivation among kindergarten through fifth grade students? To answer this research question, the

researcher examined the records of all students who were tested for gifted services between the 2010-2011 school year and the 2014-2015 school year. The scores of all four gifted assessments were converted from percentile scores to Normal Curve Equivalent (NCE) scores, and then entered into SPSS in four columns by test: mental ability, achievement, creativity, and motivation. Students were classified by ethnicity: Caucasian, African American, Hispanic, Asian, and Other. A one-way MANOVA was performed, and it was determined that mean differences in the scores were statistically significant. Next, post hoc tests were conducted on each of the four scores to determine differences independently. It was determined that there were statistically significant differences in mental ability, achievement, and creativity, but not motivation.

For the gifted area of mental ability, African American students performed significantly lower than all other student populations. The Hispanic students also scored significantly lower than the mean score of the highest group which was the group "Other." The mean scores over a five-year period were ranked in the following order from highest to lowest: "Other," Asian, Caucasian, Hispanic, African American.

For the gifted area of achievement, Caucasian students had a significantly higher mean score than African American and Hispanic students. The students classified as "Other" scored significantly higher than all other groups. The mean score over a five-year period were ranked in the following order from highest to lowest: "Other," Caucasian, Asian, Hispanic, African American.

For the gifted area of creativity, Caucasian students scored significantly higher than Hispanic students. The mean score over a 5-year period were ranked in the following order from highest to lowest: Caucasian, African American, Asian, Hispanic,

"Other." It is worth noting that African American students scored lowest in mental ability and achievement but second to highest in creativity. It is also interesting to note the contrast that the student group "Other" scored highest in both mental ability and achievement but lowest in creativity. However, the sample size of this group was very small and results can only be discussed with interest but not in generalizable terms.

These findings from research question two are consistent with previous studies conducted by the Georgia Department of Education, the National Association for Gifted Students, and other independent researchers (Davis & Rimm, 2004; Ford et al., 2005; Harris et al., 2009) that suggest that minority students do not typically score as high as their counterparts on tests of mental ability and achievement, but will excel in areas of an open-ended, product-based nature.

The third research question was: Are there significant frequency differences in the percentage of students in gifted programs as compared to the overall school population among African American, Asian, Caucasian, Hispanic, and "Other" students in kindergarten through fifth grade? For this question, a comparison of means was conducted with ANOVA to analyze the percentages of students who qualified each year based on total enrollment by race. The results of the ANOVA were not statistically significant; however, the percentages were highest for Asian students (3.12%) and Caucasian students (2.76%) and lowest for African American students (.42%) and Hispanic students (.74%).

These findings are supported by previous research which describes a consistent pattern of Caucasian and Asian students as being "overrepresented" versus Hispanic and African American students as being "underrepresented" (Ford et al., 2013; NAGC, 2012).

Ford et al., in 2013, reported that "at no time in history of gifted education have Black students been equitably represented…. The same holds true for Hispanic students" (p. 205).

As a point of interest, the researcher analyzed data for each of the three research questions using gender as the independent variable in place of race to determine if significant differences occurred in the pattern of qualification (Question 1), the mean score for each gifted test (Question 2), or the percentage of qualifying students based on total enrollment (Question 3). It was determined that no statistical differences existed in any of the areas defined by each research question. Furthermore, almost all patterns, scores, and percentages were relatively identical. This further confirms that the disparities found in race were glaring patterns that were consistent with previous research and worth pursuing with further research.

## Implications

The purpose of this study was to analyze patterns of gifted identification among specific ethnic student populations in order to better understand the qualities or characteristics that are specific to those populations for more effective, efficient referral practices. Specifically, the researcher analyzed the patterns of gifted qualification based on the combination of the four gifted assessments in the areas of mental ability, achievement, creativity, and motivation among African American, Asian, Caucasian, Hispanic, and "Other" student populations. The researcher also analyzed each of the four gifted test scores by racial population. Finally, an analysis of the percentage of students who qualified for gifted services based on the total enrollment of each student population was conducted to determine differences.

Findings of this study related to research question one indicate that a higher number of Caucasian students are qualifying than expected and a lower number of African American students are qualifying than expected. The results further indicate that more students qualify through the gifted areas of achievement, creativity, and motivation. Findings of research question two indicated that African American students score lower in areas of mental ability and achievement, but higher in the area of creativity. All student populations scored well on the area of motivation. When taken together, the findings of research questions one and two have implications for the screening and referral process for educators. First, care must be taken to look for students who perform well on open-ended tasks, not just those students who perform well on standardized assessments. Davis and Rimm (2004) noted that when screening for gifted students, using multiple data sources that gave students the opportunity to reveal gifted characteristics like creativity or motivation provided disadvantaged children a fair opportunity to display creative potential. The National Association for Gifted Children published a position statement in 2008 with five non-negotiable research-based practices for identifying gifted students including the use of multiple data sources to ensure different characteristics of giftedness have been represented for all students. Second, care must be taken by gifted referral coordinators to ensure that teachers are aware of using open-ended tasks as a method of identifying characteristics in children that are highly creative or motivational. Bangel, Moon, and Capobianco (2010) found that when teachers were trained on the characteristics and the needs of gifted children, their participation in the intervention increased. Other studies have shown that when teachers have been trained prior to the referral process on the defined set of gifted characteristics

that teachers are highly effective in referring students for gifted services (Pierce et al., 2007; Siegle et al., 2010; Speirs Neumeister et al., 2007).

Findings from research question three indicate that, although not statistically significant, the percentage of students in each racial population is consistent with the reported pattern of higher representation of Caucasian and Asian students and lower representation of African American and Hispanic students. Implications from this finding indicate a need to continue identifying ways for minority or disadvantaged children to experience opportunities for open-ended, creative tasks that allow them to express gifted characteristics beyond their personal achievement or background experience. Robert Sternberg, who graduated with honors from Yale University, developed the Triarchic View of Giftedness (1985) and Theory of Successful Intelligence (1996), performed poorly on intelligence tests as a child. His teacher saw potential in him and challenged him to excel (Plucker, 2014). Educators hold the awesome and daunting task of finding the best in all children, even or especially when it is not obvious. Addressing issues of adequately and appropriately representing all student populations in gifted programming should begin with redefining the process of recruitment (Ford & Whiting, 2008). Recruitment of gifted students, at its core essence, must begin with a clear understanding of the characteristics of giftedness.

## Recommendations for Further Research

The researcher confirmed a pattern through this study that has been reported for several decades: underrepresentation of minority students. While this study only indicated the quantitative analyses of mean scores, patterns of qualification, and percentages, further research is needed in the area of using effective open-ended tasks

that are efficient for educators to use in the screening and referral process of identifying and adequately representing all gifted children.

Secondly, there were interesting results in this study from the student populations that are not recorded under the categories of Caucasian, Asian, African American, or Hispanic ethnicities. Further research in other student populations would add to the body of knowledge of gifted characteristics identified with these "Other" students.

Third, this study showed that only 37.5% of all students who were referred for gifted testing qualified for services. This suggests that further research should be done as to whether this is the result of over referring or misidentification by teachers of those who should be tested (Gordon, 2005; Roberts & Jolly, 2012; Speirs Neumeister et al., 2007), or whether this is the result of bias in the tests used (Davis & Rimm, 2004; Ford et al., 2005).

This study of a rural South Georgia county has reconfirmed much of the research that has been conducted regarding patterns of qualification across ethnic lines. However, it also revealed deviations from said patterns. This has added to our understanding of the challenging complexity of gifted identification and education. Furthermore, by taking into account students referred yet not qualifying for gifted services, this study has opened the discussion concerning deeper scrutiny of the referral process.

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# APPENDIX A:

## Georgia Department of Education Gifted Evaluation and Eligibility Chart

## Georgia Department of Education
## Rule 160-4-2-.38 Education Programs for Gifted Students
## Evaluation and Eligibility Chart

- In option A and B, information shall be gathered in each of the four categories.
- At least one of the criteria must be met by a score on a GaDOE approved nationally normed reference test.
- Any data used to establish eligibility in one category shall not be used to establish eligibility in another category.
- If a rating scale is used to evaluate creativity, a rating scale shall not be used to evaluate motivation. If a rating scale is used to evaluate motivation, a rating scale shall not be used to evaluate creativity.
- Any piece of information used to establish eligibility shall be current within two years.
- Local school systems must establish policies in regards to the use of data gathered and analyzed by private entities.

| Category | Option A | Option B |
|---|---|---|
| | **Student must have a qualifying score in the mental ability AND achievement categories.** | **Student must qualify in <u>three of the four</u> categories.** |
| **Mental Ability** | ➢ Grades K-2 99th% percentile composite score on a nationally age normed mental ability test<br>➢ Grades 3-12 ≥96th percentile composite score on a nationally age normed mental ability test | ➢ Grades K- 12 ≥ 96th percentile composite on a nationally age normed mental ability tests OR 96th percentile on a component score on a nationally age normed mental ability tests (see pg. 27 of manual for add'l information) |
| **Achievement** | ➢ Grades K-12 ≥ 90th percentile Total Reading, Total Math, or Complete Battery on a nationally normed achievement test | ➢ Grades K-12 ≥ 90th percentile Total Reading, Total Math, or Complete Battery on a nationally normed achievement test<br>➢ Grades K – 12 Superior product/performance with a score ≥ 90 on a scale of 1-100, as evaluated by a panel of three or more qualified evaluators |

| | | |
|---|---|---|
| **Creativity** | ➢ Evaluation data required | ➢ Grades K-12 ≥ 90th percentile on composite score on a nationally normed creativity test<br>➢ Grades K-12 Rating scales used to qualify student creativity must equate to the 90th percentile<br>➢ Grades K-12 Superior product/performance with a score ≥ 90 on a scale of 1-100, as evaluated by a panel of three or more qualified evaluators |
| **Motivation** | ➢ Evaluation data required | ➢ Grades 6-12 Two-year average of a 3.5 GPA on a 4.0 scale in regular core subject of mathematics, English/language arts, social studies, science, and full year world languages (see page 30 of manual for add'l info.)<br>➢ Grades K-12 Rating scales used to qualify student motivation must equate to the 90th percentile<br>➢ Grades K – 12 Superior product/performance with a score ≥ 90 on a scale of 1-100, as evaluated by a panel of three or more qualified evaluators |

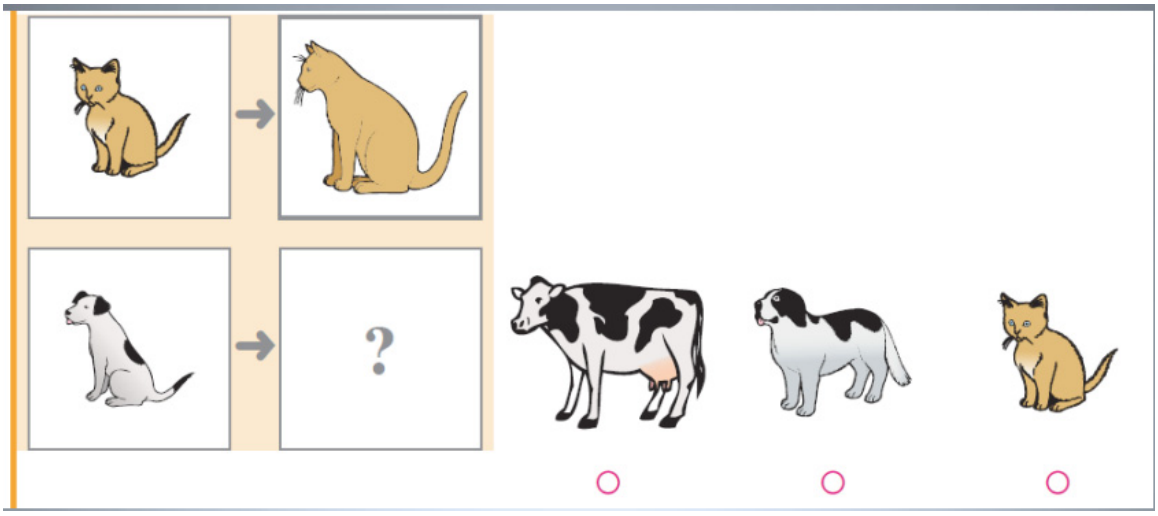
Identification of gifted students shall be nondiscriminatory with respect to race, religion, national origin, sex, disabilities or economic background.

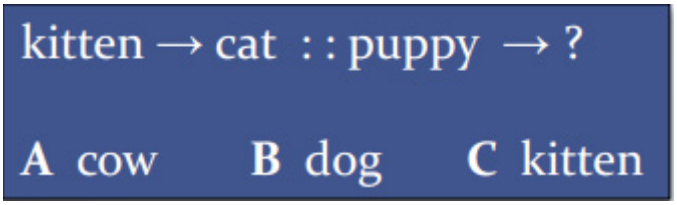
7/8/2013

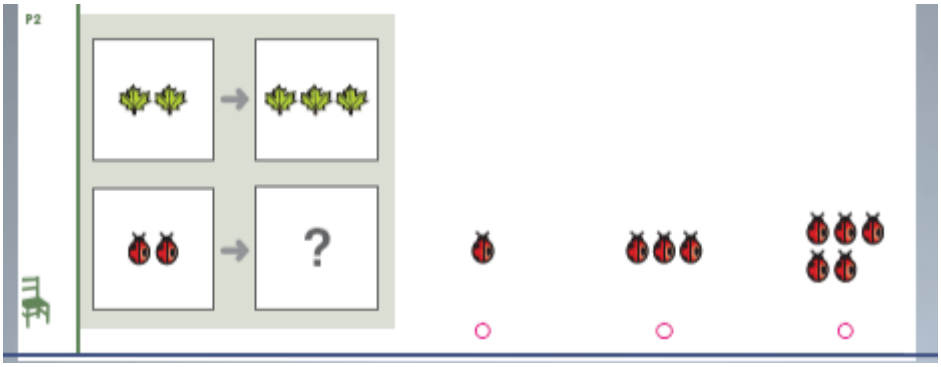
# APPENDIX B:

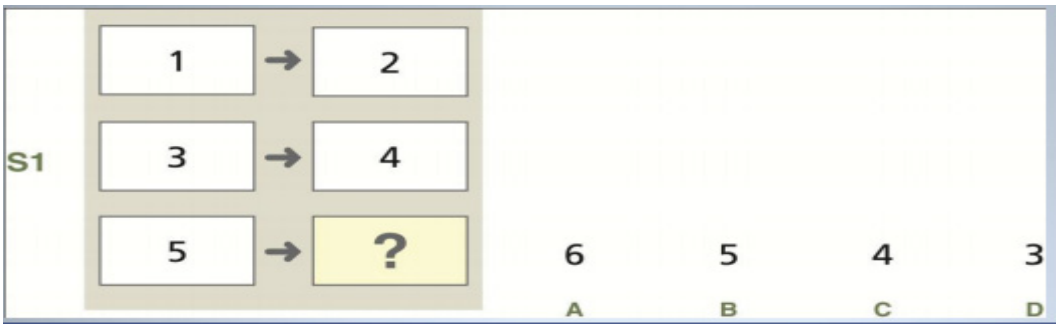
## Sample Questions from the Cognitive Abilities Test

Sample Questions from CogAT (Lohman, 2011)



# APPENDIX C:

## Torrance Test of Creative Thinking: Figural

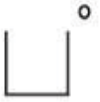
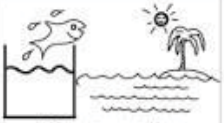
# Torrance Tests of Creative Thinking (TTCT): Figural

**Table 2. Description of the Torrance Tests of Creative Thinking (TTCT): Figural**

| *Name of Test and Subtests* | *Description* | *Rationale* | *Creative Factors* |
|---|---|---|---|
| Activity 1<br>*Picture Construction* | The person constructs a picture using a pear shape or jelly-bean shape as a stimulus on the page. The shape must be an integral part of the composition. | This activity gets at the tendency to find a purpose for something that has no definite purpose and to elaborate it so that a clear purpose emerges. | • Originality<br>• Abstractness of titles<br>• Elaboration<br>• Checklist of creative strengths |
| Activity 2<br>*Picture Completion* | This activity requires a person to use 10 incomplete figures to make and to name (label) an object or picture. | This activity calls into play the need to structure, integrate and present an object, scene or situation. | • Fluency<br>• Originality<br>• Abstractness of titles<br>• Elaboration<br>• Resistance to premature closure<br>• Checklist of creative strengths |
| Activity 3<br>*Lines and Circles*<br>(repeated figures) | This activity consists of three pages of lines or circles; the person makes objects or pictures using the lines or circles and adds titles or names at the bottom of each picture. | This activity requires an ability to return to the same stimulus again and again, perceiving it differently each time, disrupting structure to create something new. | • Fluency<br>• Originality<br>• Elaboration<br>• Checklist of creative strengths |

## Torrance Test

In a standardized Torrance Test of Creative Thinking, subjects are given simple shapes (*left column*) and are asked to use them (*top row*) or combine them (*middle row*) in a picture or to complete a partial picture (*bottom row*). Evaluators judge whether the results are more or less creative.

| | Starting Shapes | Completed Drawing | |
|---|---|---|---|
| | | More Creative | Less Creative |
| **Use** |  |  Mickey Mouse |  Chain |
| **Combine** |  |  King |  Face |
| **Complete** |  |  A fish on vacation |  Pot |

# APPENDIX D:

## Institutional Review Board Approval

*Institutional Review Board IRB*
*for the Protection of Human Research Participants*

## PROTOCOL EXEMPTION REPORT

**PROTOCOL NUMBER: IRB-03260-2015** **INVESTIGATOR: Kristal Peavy**

## PROJECT TITLE: Significant Differences in the Identification of Gifted Students Among Ethnic Groups

**INSTITUTIONAL REVIEW BOARD DETERMINATION:**

This research protocol is **exempt** from Institutional Review Board oversight under Exemption Category(ies) :2. You may begin your study immediately. If the nature of the research project changes such that exemption criteria may no longer apply, please consult with the IRB Administrator (irb@valdosta.edu) before continuing your research.

**ADDITIONAL COMMENTS/SUGGESTIONS:**

Although not a requirement for exemption, the following suggestions are offered by the IRB Administrator to enhance the protection of participants and/or strengthen the research proposal: NONE

☐ If this box is checked, please submit any documents you revise to the IRB Administrator at irb@valdosta.edu to ensure an updated record of your exemption.

Elizabeth W. Olphie 9/16/15 ***Thank you for submitting an IRB application.***

Elizabeth W. Olphie, IRB Administrator Date ***Please direct questions to irb@valdosta.edu or 229-259-5045.***

*Revised: 12.13.12*

APPENDIX E:

School System Approval Letter

Dr. Joy Perren
Director of Assessment and Accountability
Coffee County Schools

August 18, 2015

Dear Dr. Perren,

I am requesting data from Coffee County Schools for the completion of my dissertation at Valdosta State University on the study entitled "Significant Differences in the Identification of Gifted Students Among Ethnic Groups". The purpose of this study is to examine if differences exist in the four gifted test scores and qualification among the various ethnic groups represented in Coffee County.

I am requesting access to the archival test scores of students in Kindergarten through fifth grade who tested for gifted services from 2010-2015. Student demographic data including race, gender, and age will be recorded as well as the specific scores on each assessment. However, the identity of each child will not be used. Each dataset will be given a random number for the purpose of the study.

Thank you for your help in this study as I believe it will serve to add to the body of knowledge on this subject.

Sincerely,

Kristal Peavy

This request is approved.
Joy Perren
Director of Assessment