2018

Who is Selected to Participate in Gifted and Talented Programs in a Small Southeastern School District?

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Who is Selected to Participate in Gifted and Talented Programs in a Small Southeastern School District?

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A Dissertation Submitted to the
Gardner-Webb University School of Education
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

Gardner-Webb University
2018

Approval Page

This dissertation was submitted by Kancy T. Cleveland under the direction of the persons listed below. It was submitted to Gardner-Webb University School of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Gardner-Webb University.

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Acknowledgements

To God be the glory!

Thank you to my family, friends, coworkers, and students for your support and patience with this process.

My husband Howard is the smartest man in the world; and our teenage daughter Kailey is a wonderful, supportive inspiration and editor.

To my Uncles, John Bennett (MY HERO) and Eric Johnson (The Hipster), for believing in me and BEING THE BEST.

To my father Randy Tucker who taught me to never, ever give up!

To Dr. Jim Palermo for his nonjudging dedication to see me to the end.

To all who have been an inspiration and guiding light through this rigorous process.

I love and appreciate you,

Kancy T. Cleveland

Abstract

Who is Selected to Participate in Gifted and Talented Programs in a Small Southeastern School District? Cleveland, Kancy T., 2018: Dissertation, Gardner-Webb University, Gifted/Academically Gifted and Talented/Gifted Identification/Gifted Qualifications/ History of Gifted Identification

This study describes a descriptive quantitative study and a binomial logistic regression model that looked at a total population versus academically gifted and talented population in Grades 3-6 in a small southeastern school district. Both populations were examined through the independent variables classified as age, gender, and socioeconomic status. Socioeconomic status was determined by if a student's lunch was full pay, reduced pay, or free. The dependent variable was whether each student was identified as academically gifted and talented or not academically gifted and talented. Do the two different populations (total versus gifted) evenly or equally represent age, gender, and socioeconomic status of the students? In this southeastern school district, the anonymous student data in Grades 3-6 were the participants. In this study, they represented five elementary schools, one intermediate school, and two middle schools within a region. The instruments involved in this study included district and state assessments for the identification of academically gifted and talented students. Based on the data, the researcher found that there were discrepancies between the socioeconomic status of the participants and the included ages. Students with paid lunch were predicted to be identified as academically gifted and talented. Those with free lunch were predicted to not be identified as academically gifted and talented. A student who has a September birth month is predicted to be identified as academically gifted and talented. The birth month of December was also predicted more likely to be identified. Therefore, students with a later in the school year birth month like March, April, May, June, July, and August were predicted to not be identified. Gender of male and female did not have a statistical significance in being identified. Between the total and academically gifted and talented populations, the researcher recommendations include uniformity in identification, a comprehensive review of the academically gifted and talented tools, examination of social justice of the population, and that possible brain development may play a role.

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Chapter 1: Introduction

Gifted and talented programs in schools seek to identify and serve children who have intellectual gifts, but the selection process is not perfect. What criteria are used to identify these children? When and how are they identified as gifted? Are age, gender, or socioeconomic status variables that affect selection as gifted? This study attempted to answer some of these questions for students identified as gifted and talented using criteria defined by the state of South Carolina in one small southeastern school district.

"Margison (2008) pointed out that students with ability levels in the top 15-20% grasp concepts quickly. Several studies have shown that when performance-based assessments are used for identification purposes, the number of identified minority students increases dramatically. Also, when placed in programs for the gifted based on high ratings in authentic assessments, minority students fare well" (Borland & Wright, 1994; Clasen, Middleton, & Connell, 1994; Hafenstein & Tucker, 1994; Maker, 1992; Reid, Udall, Romanoff, & Algozzine, 1999; Sarouphim & Maker, 2010); "however, performance-based assessments are not without their drawbacks." "Opponents of the use of these instruments point to their many limitations such as domain under representation, lack of sound psychometric properties, and laborious administration" (Frechtling, 1991; Plucker, Callahan, & Tomchin, 1996).

Statement of the Problem

The purpose of this study was to conduct a descriptive quantitative analysis study and a binomial logistic regression analysis to answer the driving question of, "who is selected to participate in gifted and talented programs in a small southeastern school district?" The problem of this study is the reliability of the South Carolina gifted and talented (GT) selection criteria which is based on Bloom's (1985) "research that high-

performing students should be challenged." Ability intelligence (IQ) tests (Terman, 1965) are the standard screening tool for initial placement into a GT program.

"Many gifted students simply will go unrecognized if the IQ test is the sole measure used for gifted determination" (Ford, Harris, Tyson, & Trotman, 2002). At the present time, "few screening instruments are available to complement the IQ test in providing a comprehensive picture of student abilities and potential (gifts). Three of the more popular teacher rating scales designed to identify gifted students are the Scales for Rating the Behavioral Characteristics of Superior Students (SRBCSS; Renzulli, Smith, White, Callahan, & Hartman, 1976), the Gifted and Talented Evaluation Scales (GATES; Gilliam, Carpenter, & Christensen, 1996), and the Gifted Evaluation Scale, 2nd edition (GES-2; McCarney & Anderson, 1989). Although SRBCSS, GATES, and GES-2 have positive qualities, they also have technical shortcomings that limit their diagnostic usefulness." South Carolina uses none of these screening tools, only ability IQ and achievement scores (South Carolina Department of Education [SCDE], 2005). "Weaknesses in one or more of the scales include nonrepresentative standardization normative samples, low interrater reliability, and lack of evidence for diagnostic accuracy" (Jarosewich, Pfeiffer, & Morris, 2002).

Researchers from Duke University "developed a gifted rating scale, the Gifted Rating Scales (GRS), published by PsychCorp/Harcourt Assessment. The GRS was designed to meet an important need in the gifted field: a teacher-completed rating scale that complements the IQ test; is easy to administer and score; is technically sound; is based on a national standardization sample that matches the latest U.S. census in terms of race/ethnicity, parent education level, and regional representation; and reflects a multi-abilities conceptualization of giftedness" (Pfeiffer & Jarosewich, 2003). "The GRS was

designed for screening giftedness as well as a rating scale to accompany an IQ test, auditions, portfolio samples, and/or nonverbal tests as part of a full diagnostic battery. To ensure that it complements the IQ test, the GRS was co-linked during standardization with the standardization of the Wechsler Intelligence Scale for Children, 4th edition (WISC-IV) and Wechsler Preschool and Primary Scale of Intelligence, 3rd edition" (WPPSI-III; Pfeiffer & Jarosewich, 2003).

What if students are being missed by not being classified due to only ability IQ and achievement scores? Does the South Carolina GT selection process work? What about age, gender, and socioeconomic status? Are they being represented in the identified population? Is the selection criteria in South Carolina for GT reliable?

Purpose and Significance of the Study

The purpose of the study was to investigate the South Carolina GT selection criteria. Does the criteria actually identify GT kids since it only looks at ability IQ and achievement in reading and math (SCDE, 1985) that is based on research from Siegle and Reis (1998)? Are age, gender, and socioeconomic status variables that affect selection as gifted? This study attempted to answer some of these questions for students identified as gifted and talented using criteria defined by the state of South Carolina in one small southeastern school district.

Renzulli's (1978, 1984, 1994, 2002) "Three Traits or Rings of Giftedness theory associating age with gifted identification" go beyond the SCDE (2005) criteria that is based on ability IQ testing (Terman, 1965). Renzulli's (1978) theory "broadens the conception of giftedness beyond test scores and intelligence." In examining the first trait of giftedness, Renzulli (2002) described "high ability as the ability to think abstractly and retrieve information rapidly by sorting the relevant from the irrelevant." Renzulli (2002)

described the "second trait of giftedness, task commitment, as the refined form of motivation that enables an individual to have high levels of interest and to devote energy to a particular task or explicit performance area. Terms linked with task commitment include enthusiasm, perseverance, and high standards for one's work." The "third trait of giftedness was when" Glass (2004) concurred with Renzulli (2011) that "gifted students also possess high levels of curiosity and creativity." Beghetto (2010) described "creativity as the ability to solve problems by divergent thinking and suggested the need to nurture this ability in an increasingly complex world." Sak (2004) asserted that while gifted students read about creative role models, they are not offered enough opportunities to use their own creative abilities in school.

"This study is important because one of the most pervasive problems among gifted and talented children is underachievement (Reis & Renzulli, 2004); therefore, it is time to examine identification guidelines and practical procedures (Renzulli, 1990) that are "more consistent with present-day research on human abilities" (Anstrom & Kindler, 1996). "Research frequently focuses on identification, programs, evaluation, or curriculum design and often does not consider the individual differences in gifted children" (Dixon, 1998). "Unfortunately, few studies distinguish between levels of giftedness. Literature that specifically delineates moderately gifted from highly gifted students is limited" according to Norman, Ramsay, Martray, and Roberts (1999) study is therefore unusual in its design. "The researchers compared moderately gifted and highly gifted students on a battery of self-concept and adjustment measures. Although the findings did not support the hypothesized differences between the two subject groups, the authors nevertheless maintained that the study of giftedness would benefit from clearer descriptions of those identified as gifted and a delineation between highly and moderately

gifted groups. Stereotyping is identified as a significant negative attribute of the gifted label" (Kerr, Colangelo, & Gaeth, 1988; Manaster, Chan, Watt, & Wiehe, 1994; Moulton, Moulton, Housewright, & Bailey, 1998).

The specific method of inquiry employed in the study was a descriptive quantitative analysis. The purpose of this research was to determine whether or not a relationship exists between date of birth, gender, socioeconomic status, and gifted classification. The setting of this research was a small school district in a southeastern school district in South Carolina.

Research Questions

The purpose of this study was to conduct descriptive quantitative analysis to answer the driving question of, "who is selected to participate in gifted and talented programs in a small southeastern school district?" To provide this study with a comprehensive and organized framework, the following research questions were investigated.

1. Is age a predictor of identification as academically gifted and talented?
2. Is gender a predictor of identification as academically gifted and talented?
3. Is a student's socioeconomic status a predictor of their identification as academically gifted and talented?

When considering the needs of gifted students, Renzulli's (2002) "three-ring conception model defined gifted behavior according to three traits: above-average ability, high levels of task commitment, and high levels of creativity." Each state has its own criteria for selecting students as academically gifted and talented. In South Carolina, in order for a student to be included in the gifted and talented program, a student must meet the South Carolina State Gifted and Talented Regulations. The regulations have three

dimensions; two of the three must be met in order to qualify in the program. Each public school district in South Carolina has freedom in naming their program for elementary/ middle level students. There are three dimensions of qualifying for classification as GT. The first dimension is reasoning abilities such as verbal and nonverbal intelligence, in which a student must have a score of 93% or higher to be considered. The Cognitive Ability Test (CogAt) given to all second graders in the state as well as the Naglieri Nonverbal Ability Test (NNAT), a nonverbal assessment, are examples of tests used. The second dimension is high academic achievement in reading or math, in which a student must have a score of 94% or higher to be considered. Renzulli and Reis (1997) referred to this as "schoolhouse giftedness" with "traits of good grades, high scores on standardized tests, and model classroom behavior." This is determined by performance on the standardized tests such as the Iowa Test of Basic Skills (ITBS) given to all second graders in the state during November or the Northwest Evaluation Association (NWEA) Measures of Academic Progress (MAP), given two or three times a year to all students beginning in first grade. The third dimension is a state contracted performance assessment called, STAR (Star Performance Assessment Test), which gives both an intelligence score of verbal and nonverbal abilities plus an academic score for both reading and math.

Definition of Terms

Gifted. Gifted and talented students are defined by the federal government as, "children and youth who give evidence of high performance capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who require services or activities not ordinarily provided by the school in order to fully develop such capabilities." (U.S. Department of Education, 1993, p. 26)

Two-Faced Label. "The Two-Faced Label" (Robinson, 1989) aptly "describes the dilemma faced by students labeled as gifted. Labeling is a social process that can have both positive and negative effects on the labeled student."

Giftedness. "Giftedness is the possession and use of untrained and spontaneously natural abilities in at least one ability domain. The question of how to define giftedness has been debated for decades; and a single, unified definition does not and should not exist" (Renzulli & Reis, 1997).

Talent. "Talent is defined as the superior mastery of systematically developed abilities or skills and knowledge in at least one field of human activity to a degree that places the child in the top 15% of individuals" (Gagné, 1991).

Identification. "According to Borland (2014), identification may well be one of the most controversial issues in gifted education. After synthesizing research on identification, VanTassel-Baska (2000) argued, traditional approaches to identification, un-supplemented by more innovative, nontraditional approaches, will invariably produce a traditional inequitable population of identified gifted students" (p. 336). According to the identification component of Criterion 2 of the National Association for Gifted Children (2010) Pre-K-Grade 12 Gifted Programming Standards, "Educators select and use multiple assessments that measure diverse abilities, talents, and strengths that are based on current theories, models, and research" (p. 2), and "assessments provide qualitative and quantitative information from a variety of sources, including off-level testing, are nonbiased and equitable, and are technically adequate for the purpose" (p. 2).

Age. Date of birth (DOB) refers to the age of a child.

Twice-exceptional students. "Twice-exceptional students, that is, students who are gifted and have learning disabilities, often need to have appropriate adaptations and

accommodations" (Barton & Starnes, 1989; Baum, 2004; Cline & Schwartz, 1999; National Association for Gifted Children, 1998) "so they can effectively gain access to enriched and accelerated instruction."

Differentiation. "Differentiation refers to teacher instructional approaches in teaching through modification of curriculum elements (content, process, product, environment) according to learner learning preferences (readiness, interest, learning style, gender, age). Differentiation came out of the belief that every individual learner varies in the way they learn" (Anderson, 2007).

Low income. "Studies also have suggested that social support through the home is a critical variable in the development of low-income students" (Olszewski-Kubilius, Lee, Ngoi, & Ngoi, 2004; Olszewski-Kubilius & Scott, 1992; VanTassel-Baska, 2007).

Acceleration. "Acceleration is generally defined as moving students through an educational program at rates faster, or at younger ages, than typical" (Colangelo, Assouline, & Gross, 2004, p. 2).

Dependent variable. The categorical dependent variable is giftedness with an answer of yes or no.

Independent variable. The categorical independent variable is month of birth, gender, and socioeconomic status.

Limitations and Delimitations of the Study

There were several possible limitations to this study. First, the sample is from only one school district; findings may not hold true across other school districts consistently. The criterion-referenced, standards-based assessment is written specifically for South Carolina; therefore, no other states administer this same test. Finally, this research was from one district in South Carolina; and since districts are different, the

results may not be true in another location.

There were delimitations noted for this study. First, the study examined data from one area of South Carolina. The researcher did not take into any account other factors that may influence the standardized test scores. All students who met the criteria for the purpose of this study were included. Students in English As A Second Language and Special Education were all included, which may vary the results. The second is that the scores used were from only one period of time. A longitudinal study could provide more information into the accuracy across a longer period of time.

Overview Organization of the Study

In Chapter 2, the researcher provides a review of the literature. Scholarly literature focusing on giftedness, identification, and age related to academically gifted and talented students will be explored. The third chapter examines the methodology of this study. A quantitative approach was utilized. Chapter 4 examines the findings of this study. Results are interpreted and discussed. Narrative as well as visuals such as tables and graphs are incorporated into this chapter to share information. The fifth and final chapter of this study discusses the findings and the subsequent conclusions made. The relationship of the findings to previous literature also is examined. Finally, the implications and recommendations are reviewed.

Chapter 2: Review of Related Literature

Introduction

The review of the literature covers many topics associated with giftedness, identification, and age related to academically gifted and talented students. This chapter provides an overview of giftedness, identification of gifted, gender differences, and socioeconomic status. The main purpose of this review is to present relevant literature and research that is linked to these specific areas. This literature review begins with the historical context and definition of giftedness. The second part of the literature review provides information on history of gifted identification. These include intelligence tests, standardized tests, and teacher referrals. This additionally will include academically gifted identification issues as well. The next section describes gender and age related to gifted children. Subsequently, the following section brings together all these topics: identification, age, gender, and socioeconomic status in children in the total and academically gifted populations. The purpose of this study was to examine who is identified as gifted and talented for program inclusion in a small southeastern school district? Are age, gender, and socioeconomic status variables that affect selection as gifted? This study attempted to answer some of these questions for students identified as gifted and talented using criteria defined by the state of South Carolina in one small southeastern school district.

Giftedness

"Conceptions of giftedness mirror theoretical progress with related constructs such as intelligence and creativity" (Plucker & Callahan, 2014; Plucker & Esping, 2014). For example, "many early intelligence theories, whether unitary (Cattell, 1987; Spearman, 1904) or "more multifaceted" (Guilford, 1967; Thurstone, 1938), "emphasized

the importance of the individual as the unit of interest and were largely psychometrically derived." "Creativity theories had similar characteristics" (e.g., Guilford, 1950; MacKinnon, 1965). "Early approaches to giftedness followed a similar trajectory, focusing largely on psychometric, unitary conceptions such as those of" Terman (1926) and Hollingworth (1942). Many "successful programs for gifted youth, such as the Talent Search programs, were initially based by Julian Stanley and his colleagues on these psychometric conceptions" (Olszewski-Kubilius & Thomson, 2014; Stanley, 1973).

During the "1970s, just as theories of intelligence and creativity began to emphasize multidimensional constructs and the role of environmental influences, definitions and theories of giftedness began to change. One of the most significant developments was the first definition offered by the federal government that proposed that giftedness was manifested in six distinct areas – general intellectual ability, specific academic aptitude, creative or productive thinking, leadership ability, visual and performing arts, and psychomotor ability (Marland, 1971) – and was directly related to a need for specialized programming in schools." Callahan, Tomlinson, Moon, Tomchin, and Plucker (1995) "found that nearly 50% of surveyed school districts based their gifted education identification procedures on this definition, making it the most popular definition at the time; however, that definition still focused largely on the capacity of the individual student and devoted little attention to potential environmental influences."

Identification

In 1978, after the federal definition appeared, broadened theories of giftedness emerged. A hallmark of these conceptions was that intelligence, largely synonymous with giftedness in earlier theories, was seen as a necessary but not sufficient condition for high achievement. For example, Renzulli's (1978) "three-ring conception of giftedness,

perhaps the most well-known model in the field, focuses on the interaction among above-average ability, creativity, and task commitment." Renzulli and his colleagues have "conducted studies of the validity of the three-ring conception" (Delisle & Renzulli, 1982; Gubbins, 1982; Renzulli, 1984, 1988a), including studies "of the effectiveness of interventions based on the model." Although "Renzulli's approach is not without its critics" (Johnsen, 1999; Olszewski-Kubilius, 1999), "the model is often portrayed in its original form, when in actuality Renzulli and colleagues have continually refined and improved the model" (Renzulli, 2005; Renzulli & D'Souza, 2014; Renzulli & Sytsma, 2008). "Perhaps the major contribution of the three-ring conception of giftedness is that it was among the first efforts to make creative productivity a goal of gifted education."

Concurrent with Renzulli's strong influence on the field of gifted education, Gardner (1983) published the "Theory of Multiple Intelligences (MI Theory), and Sternberg's (1988, 1996) Triarchic Theory of Successful Intelligence emerged." Like Renzulli's (2005) three-ring conception, "MI Theory and Triarchic Theory appealed to educators who wished to expand notions about how students are considered to be gifted and talented." Despite "MI Theory's popularity, empirical support has been mixed" (Castejon, Perez, & Gilar, 2010; Jensen, 1998; Visser, Ashton, & Vernon, 2006); and "assessment has been difficult, limiting its impact on gifted education" (Gardner, 1995; Plucker, 2000; Plucker et al., 1996). Research on the "Triarchic Theory has provided more empirical support in the areas of assessment and effective educational interventions" (Sternberg, 2011; Stormont, Stebbins, & Holliday, 2001). Renzulli (2012), Gardner (1983), and Sternberg's (1991) work "clearly broadened educator conceptions of what talent and giftedness can be and where it can be found. Furthermore, all three theoretical approaches also emphasize the role of sociocultural context in defining,

identifying, and fostering giftedness."

"During the 1980s, teacher recommendation was another facet implemented in the identification process. Unfortunately, the research implies that teachers are not well versed in what truly constitutes GT behavior and many times misidentify individuals who possess schoolhouse giftedness as the only form of giftedness" (Castellano, 1998). "Educators must be given extensive professional development on giftedness to improve their identification skills. In addition, professional development experiences should also address cultural sensitivity and an understanding of how giftedness might appear in other cultures" (Ford & Trotman, 2001).

"Identifying and selecting gifted and talented students has been researched for over 40 years" (John Hopkins University: Center for Talented Youth, 1999). Joseph S. Renzulli, Director of The National Research Center on the Gifted and Talented, University of Connecticut, has indicated "that highly productive people have three interlocking clusters of ability that can be applied to gifted and talented students: above average ability, task commitment, and creativity" (Renzulli, 1986b).

"Another theoretical milestone was Gagné's (1995, 2000) development of the Differentiated Model of Giftedness and Talent (DMGT). In the DMGT, gifts are defined as innate abilities in at least one domain area (i.e., intellectual, creative, socioaffective, sensorimotor) that place the individual in the top 10% of same-age peers. Talent is the demonstrated mastery of the gift as evidenced by skills in academics, arts, business, leisure, social action, sports, or technology that place the individual in the top 10% of same-age peers." " By proposing the gifts-talents distinction, Gagné (1993a) differentiates between potential and real-world outcomes, with underachievement occurring when gifts do not translate into talents. Perhaps not coincidentally, some state

definitions now differentiate between potential and actual achievement." Gagné (1995) "also recognized intrapersonal and environmental catalysts, which can either support or hinder the development of talent." "The acknowledgement of variables that can both hurt and help foster talents is a unique theoretical addition that mirrors earlier work" by Tannenbaum (1983) and "later changes to the three-ring conception" (Operation Houndstooth; Renzulli, 2002, 2012).

"Renzulli (1978, 1988b) reexamined the definition of giftedness by reviewing the research findings of several notable researchers and psychologists (Bloom, 1985; MacKinnon, 1965; Sternberg, 1985a; Terman, 1925; Torrance, 1969) and looking for the substantiation of factors beyond ability that played critical roles in actualizing potential. Essentially, he wanted to know the characteristics of creative, productive adults that defined gifted behaviors. His review led to the following definition."

> Giftedness consists of an interaction among three basic clusters of human traits-these clusters being above-average general abilities, high levels of task commitment, and high levels of creativity. Gifted and talented children are those possessing or capable of developing this composite set of traits and applying them to any potentially valuable area of human performance. Children who manifest or are capable of developing an interaction among the three clusters require a wide variety of educational opportunities and services (Assouline, 2007) that are not ordinarily provided through regular instructional programs. (Sternberg, 1985a, p. 261)

"Traditionally, identification in the academically gifted and talented" (Callahan, Renzulli, Delcourt, & Hertberg-Davis, 2013) is based on an "above-average (93% or higher) intelligence and high achievement (94% or above) in reading or math" (Baldwin,

2005) on a standardized test. "Our current federal definition suggests that gifted and talented students are indeed a diverse group of individuals (Borland & Wright, 1994) as discussed above, students with varying abilities and potentials in one or many domains." "This widely accepted federal definition of giftedness (Ross, 1993) highlights students' intellectual, creative, and/or artistic areas; unusual capacity for leadership; or excellence in specific academic fields. This definition discusses outstanding talents present in children and youth from all cultural groups, across all economic strata, in all areas of human endeavor. In this definition as well as other well-researched conceptions of giftedness, the notion that giftedness is a developmental construct is widely supported" (Bloom, 1985; Gardner, 1983; Renzulli, 1978, 1986a, 2005; Sternberg & Davidson, 1986, 2005). Reis and Renzulli (2009) stated,

> After having spent more than seven decades of collective lives in the field of gifted education as teachers, school psychologist, coordinator, researchers, and university professors interested in the nurturance of gifts and talents, there is no more potentially dangerous and false myth than the one above. Let us, therefore, begin this response with the following resounding statement: There is no single homogeneous group of gifted children and adults, and giftedness is developmental, not fixed at birth. (p. 233)

Reis (2005) and Renzulli (1978, 2005) have contributed "unequivocally to a robust research base that points convincingly to the heterogeneity of the group labeled "gifted" and about giftedness as a developmental concept."

"Many state definitions have similar language (although the specificity varies) to a definition developed by a team of people in response to a governmental request of the then Commissioner of Education, Sidney Marland. The 1971 Marland definition stated,

> Gifted and talented 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 services beyond those normally provided by the regular school program in order to realize their contributions to self and society. Children capable of high performance include those with demonstrated achievement and/or potential in any of the following areas:"
>
> 1. General intellectual ability
> 2. Specific academic aptitude
> 3. Creative or productive thinking
> 4. Leadership ability
> 5. Visual and performing arts
> 6. Psychomotor ability. (p. 10)

Over the years, "the Marland definition changed (e.g., psychomotor ability was eliminated), but many elements were retained, maintaining a broader perspective on demonstrated and potential abilities." In 1993, the U.S. Department of Education released "National Excellence: A Case for Developing America's Talent, a report whose definition of gifted and talented maintains some phrasing that was also in the earlier definition from the 1970s:"

"Children and youth with outstanding talent perform or show the potential for performing at remarkably high levels of accomplishment when compared with other of their age, experience, or environment. These children and youth exhibit high performance capability in intellectual, creative, and/or artistic areas, possess an unusual leadership capacity, or excel in specific academic fields. They require services or

activities not ordinarily provided by the schools, Outstanding talents are present in children and youth from all cultural groups, across all economic strata, and in all areas of human endeavor" (Robinson, 2004, U.S. Department of Education, 1993, p. 26).

"As the understanding of human abilities expanded, the notion of using multiple methods to examine the gifts and talents of young people was embraced. One of the earliest sets of guidelines for a comprehensive identification system was presented in an unpublished paper presented by Marshall Sanborn and reported in a book on identification" by Renzulli, Reis, and Smith (1981). Based on his work with a "broad range of diverse students at the University of Wisconsin, Sanborn argued for a broad-based comprehensive identification system using the following" guidelines:

- apply multiple techniques over a long period of time;
- understand the individual, the cultural-experiential context, and the fields of activity in which the student performs;
- employ both self-chosen and required performances;
- reassess the adequacy of the identification program on a continuous basis; and
- use the identification data as the primary basis for programming experiences.

In the National Research Center on the Gifted and Talented Classroom Practices "Study of more than 3,000 third- or fourth-grade teachers, Archambault et al. (1993) found that most of the public schools surveyed used achievement tests (79%) followed by IQ tests (72%) and teacher nomination (70%) as their main sources of data collection." "The data sources were similar, but the order was different in the findings" by Cox, Daniel, and Boston (1985), "who indicated that teacher nomination (91%), achievement tests (90%), and IQ tests (82%) were used most often." In an earlier study, Alvino,

McDonnell, and Richert (1981) "also found that most identification procedures included intelligence tests, teacher nominations, and achievement tests."

"Intelligence and achievement tests continue to be developed and modified to inform teachers, administrators, psychologists, parents, and the general public about the characteristics of children and adults. Their influence on people's views of children's abilities remained strong throughout the 20th century. Exploring the expressed and applied abilities of young people is a complex process. Assessment tools are administered to establish an objective profile of student intellectual abilities. Terman's (1926) longitudinal study of geniuses also revealed the difficulties in predicting what a person accomplishes in life Terman's (1926) research team" stated by (Oden, 1968) "analyzed the accomplishments of the single generation of 1,528 geniuses over time and found that early intelligence test scores were not necessarily the main determinant of adult accomplishments."

Tannenbaum (1991) "reflected on the contributions of Terman and associates and stated, "In the last analysis, high IQ is a boon or a bust in the configuration of factors that make up giftedness, depending on how much confidence is invested in it" (p. 31). The complexities of understanding one's current and future abilities and accomplishments are somewhat daunting." Tannenbaum (1991) "offered a five-factor conception of giftedness if a person is to "achieve excellence in any publicly valued area of activity" (p. 29). He stated that these "five factors have to interweave most elegantly: (1) superior general intellect, (2) distinctive special aptitudes, (3) supportive array of non-intellective traits, (4) a challenging and facilitative environment, and (5) the smile of good fortune at crucial periods of life" (Tannenbaum, 1991, p. 29). The final factor adds levity to the heady topic of intellectual ability, but it is also poignant because of the insistence that one

measure cannot begin to define or explain giftedness fully. General intellectual ability and specific aptitudes are revealed by tests, but there is more to understanding giftedness. Breaking away from a reliance on tests to determine abilities is not easy." "Some people may think that using an achievement test rather than an intelligence test makes a difference; however, several researchers, including Sternberg (1985a) and Sattler (2001), believed that intelligence and achievement tests are so similar that a quest to broaden conceptions of giftedness by including achievement is halted."

In 1950, Guilford "proposed the theoretical model of intelligence that included an emphasis on creative thinking and problem-solving. The multiplicity of more than 150, and eventually more than 220, abilities caught people's attention, as did views of other psychologists and researchers who proposed multiple abilities."

In later years, Gardner (1983) proposed "the theory of multiple intelligences. Seven intelligences (linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, and intrapersonal) were initially identified; and one more (naturalist) has been added recently. One or more of these intelligences could be the focus of an identification procedure."

Reis & Renzulli (2004) stated that "while Gardner (1983) posited a domain approach to intelligences, Sternberg (1985b) developed his triarchic theory of intelligence, cogently arguing against the reliance on IQ as the sole determinant of giftedness. His triarchic theory looked at analytical, synthetic/creative, and practical intelligences as singular and multiple forms of abilities." Both Gardner (1983) and Sternberg's (1998) "theoretical approaches are carefully defined and researched. These theorists have also experimented with various formal and informal measurement techniques, but neither theoretical model limits the assessments of children's gifts and

talents to paper-and-pencil, timed tests that yield a single or multiple scores."

"As more current theoretical perspectives on abilities and talents embrace intellective and non-intellective characteristics, identification procedures need to reflect such changes. One way to check the status of definitions of gifted and talented students and related assessment approaches is to review summary data from State of the States: Gifted and Talented Education Report (Council of State Directors of Programs for the Gifted, 1999). The state directors produce the results of a biennial survey on the status of identification and programming at the state level and in the territories. Questions focus on the existence of legislative mandates that guide the direction of screening and identification procedures, the requirements of programming, or both. Definitions of gifted and talented are provided by states." The Idaho Definition is:

> "Gifted and talented children" means those students who are identified as possessing demonstrated or potential abilities that give evidence of high performing capabilities in intellectual, creative, specific academic or leadership areas, or ability in the performing or visual arts and who require services or activities not ordinarily provided by the school in order to fully develop such capabilities. (Council of State Directors of Programs for the Gifted, 1999, p. 18)

Gifted Program Models Common Themes

The program can be an inclusion model, a pull-out program, or a special placement in another facility. Siegle (2013) stated that "teaching is the heart of gifted education." "Knowledge about teaching in gifted education has been separated into two groups: teaching systems and teaching methods" (Coleman & Cross, 2001). "A system contains elements of diagnosis, content, teaching methods, and evaluation, which are the components of teaching." Examples of "systems are Self-Directed Learning" (Treffinger,

1975) and "Schoolwide Enrichment Model" (SEM; Renzulli & Reis, 1997). "These guidelines also reflect researcher and practitioner experiences of Colangelo and Davis (1997), Coleman and Cross (2001), Davis and Rimm (2004), Feldhusen (1993), Gagné (1999), Gallagher and Gallagher (1994), and Tannenbaum (1997). Callahan, Tomlinson, and Pizzat (n.d.) "studied noteworthy practices in identification of gifted students based on what was learned from various Javits Grants awarded by the U.S. Department of Education's Office of Educational Research and Improvement during the early 1990s. The commonalities and themes emerging from the model projects and their innovative practices" included the following:

- acceptance of intelligence as multifaceted;
- recognition of the multiple manifestations of giftedness;
- emphasis on authentic tools and assessment over time;
- expanding sources of evidence;
- development of a philosophy of inclusiveness;
- strong links between the identification process and instruction;
- collaborative efforts;
- use of identification to enhance understanding; and
- early and ongoing plans and procedures to evaluate the process (U.S. Department of Education, 1993, pp. v-vii).

Kerr et al. (1988) "evaluated gifted adolescents' views of their own giftedness and their perceptions of how their giftedness was perceived by others. Although the participants perceived their giftedness as strongly positive in terms of personal growth and academics, it was viewed as strongly negative in terms of social relations with

others." Manaster et al. (1994) "refined Kerr et al.'s research and detailed subtle differences, specifically in the negative social impact category." "Finally, relying heavily on the research of both Kerr et al., Manaster et al., Moulton et al. (1998) "conducted a study of 14 gifted students' perceptions of the positive and negative aspects of being labeled gifted and talented. The study had limitations: The number of participants was small, the numbers of male and female subjects were unbalanced, and there was no comparison group. Nevertheless, their research resulted in the publication of a list of the five most positive and the five most negative attributes of being labeled gifted, as determined by gifted students themselves, and suggested negative psychological, emotional, and social consequences of the gifted label. Among the most negative attributes were stereotyping and pressure/expectations of parents and teachers. Positive attributes included personal issues such as internal gratification plus school issues such as advanced learning and special experiences in gifted classes. All children in the public school system are given the opportunity to be included in the gifted and talented program; however, it is by qualification only. This qualification allows the student to be included in services by a highly qualified gifted endorsed educator." Cross (1999) "portrayed gifted students as living in a world that sends them mixed messages such as diagnostic teaching/prescribed instruction (DT/PI; Stanley, 1979) and problem-based learning" (Gallagher, 1997). "Among the four, DT/PI and SEM have the most research. The amount of research about teaching systems is small, and even less research is available on the eight general teaching methods (recitation, observational, discovery, lecture, independent study, tutoring, materials-driven, discussion) as they apply to gifted and talented learners." (Gallager. 1997)

Multitrait Definitions

"Multitrait definitions of giftedness (or talent) differ not only with regard to the specific number of traits covered by each one; they also differ with regard to the way with which these traits are dealt." stated Borland (1989) "distinguished two opposite types of multitrait definitions: (a) conjunctive definitions, where giftedness requires the simultaneous (A and B and C) possession of distinct characteristics or abilities," like Renzulli's (1986a) "combination of above-average abilities, creativity, and task commitment; and (b) disjunctive definitions of giftedness, where giftedness and/or talent can take different forms (A or B or C), like Gardner's (1995) multiple intelligences or Gagné's (1998) four giftedness domains."

"These two types of definitions have opposite impacts on prevalence estimates. Assuming an identical minimum threshold, for instance the top 10% for each trait or criterion, conjunctive definitions lead to decreasing prevalence values as the number of criteria increases: Most of those who survive the first cutoff score (A) will not survive the second (B), and most of the A and B survivors will fail to exceed the third threshold (C). As the number of criteria included in the definition and identification process increases, the resulting number of individuals labeled gifted or talented will soon become uselessly small. In the case of disjunctive definitions, the impact is reversed; if giftedness can manifest itself as A or B or C, the resulting population of persons labeled gifted or talented will increase with each new criterion or category added. One begins with the top 10% on criterion A, then adds all those not already chosen who excel on B, and so forth with each additional criterion." Taylor (1973) "applied this reasoning in the context of his theory of multiple talents; assuming his eight talents to be uncorrelated, he estimated that 99% of the members of a population would be identified as above average (top 50%)

on at least one of these eight abilities. With a much stricter 10% selection ratio, the corresponding prevalence would still be 57%. In other words, more than half of the population would be among the top 10% in at least one of his talents. As Carroll's (1993) "seminal work has so clearly shown, most mental abilities are correlated to some extent, and these correlations have a significant impact on prevalence estimates." Taylor "acknowledged the importance of that problem but did not address it."

"Part of the explanation for the lack of differential support for gifted students is the false belief that gifted students do not face problems" (Moon, 2009); however, "giftedness has been associated with many problems that can include social isolation and rejection, social adjustment problems" (Colangelo & Kelly, 1983; Feldhusen, 1989), "underachievement" (Siegle, 2013), "dropping out of high school" (Davis & Rimm, 1994), and "suicidal ideation" (Cross, 2013). "Gifted students can be grouped into multiple subpopulations (Robinson, 2004) that each present different vulnerabilities." According to Lee, Olszewski-Kubilius, and Thomson (2012), these "vulnerabilities vary with students' ages, genders, types of giftedness, educational experiences, and levels of giftedness. Although giftedness often gives young students an advantage in popularity, by age 13, the popularity advantage disappears as conformity pressures increase." "Creatively gifted students show particular vulnerability to underachievement" (Moon, 2009; Seeley, 2003). "Students with IQs over 155 demonstrate social isolation, whereas those with IQs over 170 experience particularly profound social isolation" (Lee et al., 2012).

South Carolina Guidelines

"Guidelines for the current operation of the gifted and talented program in South Carolina are detailed by the State Board of Education in the 2004 Gifted and Talented

Regulations (R43-220). These regulations describe approved student identification procedures, detail the multiple criteria that can be used to qualify students, provide definitions for program models, specify the training required for teachers of gifted and talented students, and establish reporting requirements." South Carolina defines gifted and talented students as students who are identified in grades one through twelve as "demonstrating high performance ability or potential in academic and/or artistic areas" (Reis et al., 1993) and, therefore, "require an educational program beyond that normally provided by the general school program" (Bloom, 1985) "in order to achieve their potential (R43-220)." "The identification process consists of several steps, including screening, referral, assessment, and placement. The process is applicable to all students, regardless of gender, ethnicity, socioeconomic group, or disability status" (SCDE, 2005; see Appendix A).

Correlations Between Criteria

"Correlations between some abilities can be very low, for instance between physical and cognitive abilities; they also can be quite strong, especially when we compare abilities belonging to the same domain" Belanger and Gagné (2006) also stated,

> To understand the impact of correlated criteria on prevalence values, let us look at the most simple situation, that of two abilities. If these two measures are uncorrelated, then an identical top 10% threshold applied to each of them will lead to either 1% identified as gifted in both (conjunctive definitions) or 19% identified in either of them (disjunctive definitions). If, on the other hand, these two criteria are perfectly correlated, then the same individuals-the top 10%-will be selected with criteria A and/or B; in that special case, disjunctive and conjunctive definitions will lead to the same result. (p. 136)

"It is easy to imagine how complicated the estimation process will become as the number of criteria increases, because each pair of criteria within the group will have a different correlation than the other pairs" (Carroll, 1993; Gagné, 1998; Taylor, 1973).

"A school or district may begin to move away from the role of identifier and gatekeeper for "the gifted program" toward a role of identifying an array of services that might be offered to students with the unique gifts and talents in evidence in its setting. Once that array is in place, the school takes on the role of matchmaker and monitor, making sure that a best fit (optimal match) has been made for each of the gifted learners in that setting and documenting the effects of those matches. This may also require that reconsideration be given to the kinds of services provided. The focus will be placed on the most frequent needs for potential or talent development in a specific setting and make those need areas the top priority. This would need to be communicated to the community, informing it when certain services cannot be provided because of limited resources and personnel. A program of services that focuses within these priorities such that 65% of all effort is spent on talent development or potential enhancement would be critical, with an additional 25% of the efforts directed toward social and emotional adjustment and programs and 10% of GT program efforts focused on targeted remediation" (Rogers, 2002).

"Halperin and Luria (1989) found strong evidence of negative stereotyping of children labeled as gifted." What about the 80% of the school who do not qualify for the program? "Research on the topic offers several broad areas of focus for achieving this goal, including expanding identification and selection procedures" (Ford & Grantham, 2003; Frasier, Garcia, & Passow, 1995; Frasier & Passow, 1994; Morris, 2002), "understanding test bias" (Ford & Harmon, 2001; Ford & Harris, 1999), "implementing

cultural awareness training in teacher education programs" (Ford & Trotman, 2001; Rios & Montecinos, 1999), "considering a variety of behaviors indicating giftedness" (Baldwin, 2002; Frasier & Passow, 1994; Maker & Schiever, 1989), and "fostering multicultural educational reform" (Banks & McGee-Banks, 2001; Bernal, 2002; Ford & Harmon, 2001; Ford & Harris, 1999). The "vast majority of young people participating in gifted and talented programs in the United States represent the dominant culture" (Donovan & Cross, 2002), "perhaps because many educators may hold a more traditional view of giftedness." "A correlation exists between the identification of gifts and talents in students and high scores on achievement or IQ tests" (Ford & Grantham, 2003; Ford & Trotman, 2001; Frasier & Passow, 1994). "This form of giftedness, described as schoolhouse or academic giftedness by Renzulli and Reis (1985, 1997), is usually characterized by high grades, high scores on standardized achievement and aptitude tests, and strong classroom performance." "With the current emphasis on this traditional type of giftedness, identified culturally, linguistically, and ethnically, CLED, students generally represent a fraction of the talented CLED students in our schools – students whose gifts may be latent or newly emerging" (Baldwin, 1978; Ford & Harris, 1999; Frasier & Passow, 1994; U.S. Department of Education, 1993). "Are they given screening opportunities to participate? Students are often nominated for gifted programs by teachers who must have knowledge, understanding, awareness, and appreciation of student cultures to ensure recognition of diverse talents" (Briggs & Reis, 2003; Frasier & Passow, 1994). "Teachers may misunderstand that student attributes, characteristics, and behaviors may vary across cultures and fail to realize that these diverse characteristics do not reflect absence of abilities and aptitudes; hence, different manifestations of aptitude may constitute one barrier to teacher nominations of culturally diverse students" (Briggs

& Reis, 2003; Frasier & Passow, 1994). The research of Copenhaver and Mclntyre (1992) "demonstrated that teacher perceptions of gifted students differed significantly and could be correlated with two factors: whether teachers had taken courses or workshops on gifted education and the grade level teachers taught." Hansen and Feldhusen (1994) and Hanninen (1988) "found definite and measurable differences between experts and novices, teachers trained and untrained in the area of gifted education. The differences were reflected in the teacher-learning process through the use of critical-thinking skills and in student-teacher interactions. Clearly, teacher perceptions are colored by their knowledge of gifted programs and their training in the field of gifted education. Perhaps more important, however, is the fact that teacher perceptions produced measurable differences in the classroom." Research by Guskin, Okolo, Zimmerman, and Peng (1986) "further supports a positive perception from identified gifted students. Their survey results indicated that gifted students have highly favorable views of themselves, that they believe giftedness can be attained by hard work, and that they also perceive others as treating them no differently or more favorably. Only a minority reported negative reactions from peers. The authors also reported that students perceived the gifted label as associated with high status, especially from parents and teachers. Federal gifted and talented standards require this for the student population." In a study by Karnes, Shwedel, and Steinberg (1984), "the majority of parents of gifted children (67% fathers, 80% mothers) believed their child had been difficult to rear compared with 40% fathers and 44% mothers of nongifted children, and parents had particular concerns about their child's emotional difficulties." "There have been reports of strained relationships and conflict in families with gifted children" (Albert, 1980; Moon, Jurich, & Feldhusen, 1996), "especially when children are underachieving"

(Rimm, 1995). Gifted children "may also elicit feelings of inadequacy in parents" (Silverman, 1993).

Age

"When gifted and talented students were compared with students of the same age group, personality and behavioral differences were found" (Mills, 1993). In this case, the Myers-Briggs "Type Indicator dimensions were used as a basis for comparison. The gifted and talented students showed greater preferences for introversion, intuition, and thinking. They were also likely to value objectivity and to be impersonal in drawing conclusions. They were more likely to want solutions to make sense in terms of the facts, models, and/or principles under consideration."

> The Myers & Briggs Foundation (1997c), "from the perspective of the student or employee completing the Type Indicator, partially defined introversion as,"
>
> I like getting my energy from dealing with the ideas, pictures, memories, and reactions that are inside my head, in my inner world. I often prefer doing things alone or with one or two people I feel comfortable with. I take time to reflect so that I have a clear idea of what I'll be doing when I decide to act. Ideas are almost solid things for me. Sometimes I like the idea of something better than the real thing. (p. 9)

Students who score higher on introversion as defined by the Myers-Briggs Type Indicator (Myers & Briggs Foundation, 1997d) are likely to use self-descriptors such as the following:

- I am seen as "reflective" or "reserved."
- I feel comfortable being alone and like things I can do on my own.
- I prefer to know just a few people well.

- I sometimes spend too much time reflecting and don't move into action quickly enough.
- I sometimes forget to check with the outside world to see if my ideas really fit the experience.

"In solving problems, introverted individuals tend to take time to think and clarify ideas before voicing an answer" (Huitt, 1992). "They may have fewer friends, but those friendships are likely to be close and strong. Gifted and talented students are also likely to play with ideas and be more intuitive" (John Hopkins University: Center for Talented Youth, 1998). The Myers & Briggs Foundation (1997a) partially defined intuition as, "Paying the most attention to impressions or the meaning and patterns of the information I get. I would rather learn by thinking a problem through than by hands-on experience" (p. 12). Students who score high on the Myers-Briggs Type Indicator scale for intuition typically see statements such as the following generally applying to themselves:

- I remember events as snapshots of what actually happened.
- I solve problems by working through facts until I understand the problem.
- I am pragmatic and look to the "bottom line. "
- I start with facts and then form a big picture.
- I trust experience first and trust words and symbols less.
- Sometimes I pay so much attention to facts, either present or past, that I miss new possibilities. (The Myers & Briggs Foundation, 1997a)

"Intuition-oriented people outnumber sensing-oriented (i.e., focusing on information that comes through your five senses) people in academic institutions. This is especially true for postgraduate education" (Geyer, 2009).

Gifted and talented students are also likely to score high on the thinking scale of the Myers-Briggs Type Indicator. The Myers & Briggs Foundation (1997b) partially defined thinking as,

> When I make a decision, I like to find the basic truth or principle to be applied, regardless of the specific situation involved. I like to analyze pros and cons, and then be consistent and logical in deciding. I try to be impersonal, so I won't let my personal wishes- or other people 's wishes-influence me. (p. 15)

"Data from previous investigations of the characteristics of early childhood giftedness include curiosity, intrinsic motivation, creativity, and independent investigation as well as advanced cognitive abilities such as memory and numeration skills" (Harrison, 2004). Rotigel (2003) also "highlighted the concerns of asynchronous development among young gifted students, indicating an uneven development between physical, intellectual, and emotional dimensions." In contrast, "commonly used identification and nomination procedures for school age gifted students include greater reliance on standardized assessments" (McBee, 2006). In addition, "teachers tend to make judgments about student abilities in relation to their age or relative precocity (Persson, 1998); thus, the characteristics that might identify a child as gifted at a younger age may become less important to teachers in older grade levels." In Copenhaver and Mclntyre's (1992) study "comparing secondary and elementary school teacher responses to characteristics of gifted students, elementary teachers were more likely to select negative characteristics such as boredom, inattentiveness, and laziness as well as independent characteristics and the presence of an extensive vocabulary. Secondary teachers chose characteristics such as inquisitiveness more often."

"This approach deals with the potential versus outcomes issue differently than

other theories, and it explicitly states how the construct changes as people develop." Subotnik, Olszewski-Kubilius, and Worrell (2011) also "emphasized that giftedness results from a combination of cognitive and psychosocial variables, keeping with the theme of broad-based influences on giftedness that we see across many recent conceptions." "Furthermore, they endorse views that intelligence is malleable and beliefs about intelligence matter" (Dweck, 1999). "The practical implications of their model run parallel to their definition:"

> Although we recognize that the generation of creative performances or ideas requires person, process, and product, it is also the case that the relative emphasis on these factors shifts over time. For example, it is important that young children develop a creative approach and attitude (person), that older children acquire skills (process), and that the acquisition of these mindsets and process skills are then coupled with deep multidisciplinary content knowledge and are applied to the creation of intellectual, aesthetic, or practical products or performances. (Subotnik et al., 2011, p. 33)

"This approach to interventions extends the situated view of Barab and Plucker (2002) by noting that the relative contributions of the parts of the person-environment-sociocultural interaction may vary over time and across different contexts. Collectively, the past several decades of theory, including the highly cited efforts in recent years, provide evidence that thinking about the nature and development of giftedness and talent continues to develop."

Gender

"Teachers interact with male and female students differently within the classroom. They tend to spend more time verbally and nonverbally interacting with male

students" (Mann, 1994; Olivares & Rosenthal, 1992; Sadker & Sadker, 1993). "This may be because boys are more likely to gain the teacher's attention by supplying answers without being called upon by a teacher" (Watson, 2000). "When talking to students, teachers tend to give more detailed information to" (Olivares & Rosenthal, 1992) "and face male students more often than female students" (Sadker & Sadker, 1995). "Additionally, due to the general tendency for boys and girls to exhibit different talents and interests" (Benbow, 1988), "teachers may develop differing expectations for each group." Gagné (1993a) "theorized that these differences in talents are due to actual differences between the genders, rather than teacher stereotypes."

"Teacher stereotypes based on gender affect their views of students. Gagné (1993b) found that teachers consider females to be more able in socio affective and artistic areas, while they view males as more talented in physical and technical tasks." Bernard (1979) "reported that teachers viewed masculine traits more highly, regardless of student gender." Dusek and Joseph (1983) similarly found that "teachers were more likely to expect high achieving students, regardless of gender, to be masculine or androgynous, and low achieving students, regardless of gender, to be feminine or undifferentiated" (p. 338). In a study using Tannenbaum's (1991) "attitude questionnaire," Cramond and Martin (1987) "showed that athletic ability, a traditionally masculine trait, was a determining factor in teacher perceptions of student abilities. Athletic individuals were viewed more favorably." Finally, Siegle and Powell (2004) "reported that teachers identified students for gifted programming who did not fit gender stereotypes more often than students who followed traditional gender roles."

"Females exhibiting traits of gifted and talented have historically faced many challenges and inequalities within the educational system. The challenges are complex

and can inhibit females from reaching their full potential during their school years and beyond. Among the many barriers girls face are the biases that teachers have based on gender" (Sadker & Sadker, 1995). "Given that one of the most common methods for screening students for gifted identification includes teacher observations and nominations" (Coleman, Gallagher, & Foster, 1994; Hallahan, Kauffman, & Pullen, 2009), "teacher perceptions of students, and teacher unintended biases, it is critically important that we examine which students teachers nominate for gifted programs and why" (Siegle & Reis, 1998). "Gender differences may exist in teacher and student perceptions of gifted students' ability and effort. Both gifted females and gifted students of color face stereotype threats that lower their performance on standardized tests and cause them to drop out of challenging classes" (Moon, 2009).

Borland (1996) reported "increased accuracy of nominations when teachers were given one criterion based on gifted programming rather than more general terms." Similarly, Kolo (1999) found that "teacher effectiveness in nominations increased when the instrument explicitly and very clearly spell[ed] out the traits or characteristics to be used by the nominators rather than ones in which the traits to be rated or checked [were] not so obvious" (p. 181). Speirs Neumeister, Adams, Pierce, Cassady, and Dixon (2007) also noted that "in order to successfully refer students to undergo the identification procedure for participation in gifted programs, teachers need a solid understanding of characteristics found in gifted children" (p. 492). "Without specific criteria, teachers develop their own conceptions of gifted and identify students who fit these conceptions" (Pierce et al., 2007). "Teacher rating scales have been shown to be effective tools in the identification process" (Hunsaker, Finley, & Frank, 1997; Renzulli, et al., 1976; Renzulli et al., 1997; Ryser & McConnell, 2004). "This is probably because they provide specific

characteristics related to gifted behavior that teachers can easily identify" (Colangelo & Kelly, 1983).

Socioeconomic Status

"Although the Jacob K. Javits Gifted and Talented Students Act of 1988 provides financial assistance to state and local educational agencies and gives highest priority to students from diverse ethnic backgrounds, economically disadvantaged, limited English proficient, and students with disabilities, the underrepresentation of economically disadvantaged students in gifted and talented programs still persists" (Abell & Lennex, 1999; Davis & Rimm, 2004; Reffel & Reffel, 2004; U.S. Department of Education, 1993).

"The underrepresentation of students in gifted and talented programs is an ongoing issue in the gifted and talented field of research" (Ford, 1998). "Many students are underrepresented, including some ethnic minorities" (Naglieri & Ford, 2003), "students with physical or learning disabilities, and students living in poverty or with low socioeconomic status (American Psychological Association [APA], 2009; Kitano, 1990; St. Jean, 1996; Stormont et al., 2001)." "There are many reasons why these groups may be underrepresented, but some believe the use of standardized tests in the gifted identification process may be at least partially responsible" (Suzuki & Valencia, 1997; Taylor & Lee, 1995).

"In addition to student interest, the subject area in which the student has demonstrated ability may influence teacher nominations. In open-ended questioning of teachers as to the characteristics of high-ability learners, cognitive traits were the most commonly named" (Alviderez & Weinstein, 1999; Busse, Dahme, Wagner, & Wieczerkowski, 1986; Endepohls-Ulpe & Ruf, 2005; Hunsaker, 1994). In fact, some

research indicates “there may be an interaction between gender and school subject ability in teacher nominations for gifted programs. For example, teachers in both the United States and West Germany rated ability in mathematics as the most important feature for boys and language ability as most important for girls” (Busse et al., 1986).

“Student interest is directly related to student achievement” (Alliman-Brissett & Turner, 2010; Horn & Walberg, 1984; Schiefele, Krapp, & Winteler, 1992; Voss & Schäuble, 1992). Previous research shows that “student interest declines each year a student spends in school” (Hidi, 2000). This “decline is especially pronounced for mathematics and science” (Krapp, 2002). These findings point to the “importance of nurturing interest in mathematics and science and to assessing levels of interest when selecting students for gifted programming. Participation in gifted programming will help students develop their gifts and achieve at higher levels” (Romanoff, Algozzine, & Nielson, 2009).

“Various research studies have documented the effect of a student’s personality traits in teacher nomination for gifted programming. In a content analysis of German teacher responses to open-ended questions concerning the characteristics of gifted students, social skills with peers were mentioned less than high-test performance. Students who were quiet and worked quickly were viewed as the top performers in a class” (VanTassel-Baska & Stambaugh, 2005).

“When not given specific selection criteria, teachers focus on academic achievement rather than creativity, leadership, or motor skills when identifying students for gifted programming” (Guskin, Peng, & Simon, 1992; Hunsaker et al., 1997). Siegle and Powell (2004) found that “teachers tend to nominate students with obscure, unusual traits rather than common behavior.” “Personality traits were mentioned, but teachers

mentioned them less than cognitive traits" (Endepohls-Ulpe & Ruf, 2005). "In a Q-sort task, teachers identified assertiveness and independence as positively correlated with perceived higher IQ scores" (Alviderez & Weinstein, 1999). "Leadership ability, at least in the sense of acting as a positive role model to other students, has been identified by teachers as a characteristic of gifted students" (Hunsaker, 1994; Persson, 1998). "There is evidence from teacher self-reports that teachers perceive highly able students as more emotionally mature than their average-ability classmates" (Persson, 1998). "Teachers have also reported a willingness to help other students as a characteristic of their most highly able students" (Persson, 1998).

Maker, Nielson, and Rogers (1994) "reported that the traditional use of intelligence tests for identifying gifted students does not produce a culturally diverse group of gifted students." Maker et al. suggested that "Gardner's (1983) MI theory can be used to resolve this situation." Maker et al. "suggested that one who enjoys engagement with challenging and ill-defined problems and who persists toward problem solution may be defined as gifted." Maker (1992) stated that according to her definition, "a gifted individual possesses qualities traditionally associated with both high intelligence and high creativity" (p. 13); "however, research suggested this was not necessarily a strong relationship" (Treffinger, 1975; Wallach & Kogan, 1965). Maker, however, "argued that this discrepancy can be explained by the fact that intelligence tests usually include items where the problem solver either has to employ the appropriate steps to solve the problem or must develop a method and apply it to solve the problem. Tests of creativity, however, include items whereby the individual is required to develop and apply appropriate methodology toward the solution of a problem; therefore, problem-solving or creativity may be demonstrated within each of the separate intelligences"

(Maker et al., 1994; see Maker, 1992, for further details regarding the identification process).

Conclusions

"According to Gagné (1998), the prevalence issue is extremely important, not only theoretically but also politically as well as practically. Theoretically, the concepts of giftedness and talent belong to the class of normative concepts. Such concepts circumscribe subgroups of people who differ from the norm through specific characteristics, like income (poverty, affluence), weight (obesity, emaciation), and age (adolescents, seniors)." As "originally pointed out" by Francis Galton (1869/1892/1962), "appropriate definitions of such concepts require clear operational criteria for membership or exclusion. In Galton's study of family relationships between eminent people, he defined eminence as presence among the top 1:4,000 Englishmen in terms of celebrity through accomplishments in science, politics, and arts. Politically, the "how many" question is crucial because of its frequency in discussions with media people and the general public; many among them want to know if giftedness and talent manifest themselves exceptionally (e.g., geniuses or prodigies) or rather commonly (the "everyone is somehow gifted" assertion). Practically, perceived prevalence directly impacts identification policies and procedures and, consequently, budget expenditures for enrichment programs"(Galton, 1869/1892/1962).

"In spite of its crucial importance, the prevalence issue has received little attention in the gifted education literature." Bélanger (1997) noted that "textbooks either ignore the subject completely" (Coleman & Cross, 2001; Gallagher, 1985; Passow, 1979; Piirto, 1994) or "mention it only briefly" (Borland, 1989; Clark, 1997; Horowitz & O'Brien, 1985; Renzulli & Stoddard, 1980; Webb, Meckstroth, & Tolan, 1982), "neither

the term prevalence nor any synonyms ever appear in the subject index of any textbook." "Indeed, only one scholar, Gagné (1998) has deemed important an examination of the question in depth. Why have so few researchers and scholars analyzed the prevalence issue? The researcher believes that the complexity of the problem as well as its sophisticated mathematical underpinnings explains in large part the general silence on this subject." Moreover, as we will see below, every answer requires that its proponent makes a somewhat arbitrary choice, something very few scholars seem ready to do. Gagné's (1999) "initial discussion of the prevalence issue covered very well the main hurdles that block a clear and simple answer to the "how many" question. The present text focuses on the four major parameters professionals need to consider if they want to estimate with some precision the prevalence of gifted and talented individuals. It is worth noting that each of these four parameters is directly influenced by the way scholars in the field of gifted education define the concepts of giftedness and/or talent."

Unfortunately, that kind of consensus has not yet reached gifted education. In the case of intellectual giftedness, which is commonly measured with IQ tests, minimum thresholds proposed over the years have ranged from lows of approximately 1% (e.g., Terman, 1925) to highs of more than 20% (Renzulli, 1988a), with many values proposed between these extremes. Such a large variability, no less than 20 fold between extremes, seriously questions the clarity of existing definitions of giftedness and talent. According to Gagné (1998), "two modal tendencies appear to stand out: a selective perspective exemplified by very low percentages (below 5%) and a liberal approach where the proposed estimates hover around 10% or 15%. In an effort to rally both groups to some consensus, Gagné (1998) proposed a metric-based system of intensity levels whose minimum threshold is fixed at 10% and labeled mild. Within this top 10% of mildly

gifted or talented persons, Gagné's (1999) DMGT recognizes four progressively more selective subgroups. They are labeled moderate (top 1%), high (top 1:1,000), exceptional (top 1:10,000), and extreme (top 1: 100,000). It is too early to see if that proposal will attract a large group of adherents. In the meantime, we must acknowledge a diversity of viewpoints on the question of the minimum threshold."

Flaws and Gaps

"With regard to the question of whether and how gifted education can be put into practice on the basis of a classroom that aims to identify competencies, specific concepts in the area of talent support have not yet been developed. Against this background, the SEM or the Autonomous Learner Model (ALM), which originate from the United States but are increasingly employed in Germany, are frequently mentioned as instruments of gifted education. These concepts share the feature that they primarily make use of forms of self-regulated lifelong learning (e.g., individualized free and project-based work) for talent support in schools. This appears to be appropriate because self-regulated forms of research-based learning require enhanced (meta) cognitive competences, in which highly able learners excel" (Weinert, 2000).

"In connection with forms of self-regulated lifelong learning in gifted education and talent support, the SEM (Renzulli & Reis, 1997) is very common in Germany. Its Type-I Enrichment enables learners to gain access to their own individual interests via general exploratory activities. Its Type-II Enrichment conveys group training activities, e.g., for self-regulated lifelong learning; and in its Type-III Enrichment, children carry out individual and small group investigations of real problems (i.e., via pull-out)." The ALM (Betts & Kercher, 1999) "employs a similar concept in federal states. Its graded activities aim to ultimately lead to self-regulated and thus lifelong learning. Within this

model, Dimension I: Orienting comprises the basics of the ability concept and the programme design, followed by Dimension II: Individual Development which imparts the competences of self-regulated learning. Dimension III: Enrichment comprises extracurricular content with possibilities of differentiation for the learner. In Dimension IV: Seminars, the learners investigate, present, and evaluate different topics cooperatively; whereas in Dimension V: In-Depth Studies, the learners devote themselves, alone or in small groups, to independent long-term projects selected from their areas of interest (i.e., via grouping)."

Vulnerability

"There is evidence that gifted and talented children may be more vulnerable to adjustment, behavioral, and mental health problems" (Garner, 1991; Kwan, 1992; Neihart, 1999; Roedell, 1984, 1986; Whitmore, 1980), "particularly if they are also from a minority or disadvantaged background" (Robbins, Tonemah, & Robbins, 2002). Porter (2005) "identified a number of issues as potential areas of problems for gifted and talented children, including overexcitability, low self-esteem, perfectionism, anxiety and stress, depression, suicide, behavior difficulties, social difficulties, and psychiatric disturbance. Although in each case the author argues that there is no evidence for increased difficulties among gifted and talented children, the research literature provides examples both supportive and contrary to this conclusion." For example, there is "research indicating that gifted children are both less vulnerable" (Baker, 1995; Eccles, Bauman, & Rotenberg, 1989; Gust-Brey & Cross, 1999; Kelly & Colangelo, 1984; Neihart, 2002; Parker, 1996; Reynolds & Bradley, 1983; Seeley, 1984) and "more vulnerable" (Coleman & Cross, 1988; Czeschlik & Rost, 1994; Freeman, 1994; Garner, 1991; Kwan, 1992; May, 1990; Renzulli, 1981; Roedell, 1984; Whitmore, 1980) "to

mental health problems." In general," there is growing consensus that gifted and talented children on average do not experience more difficulties than all children" (McCallister, Nash, & Meckstroth, 1996; Nail & Evans, 1997; Neihart, Reis, Robinson, & Moon, 2002); however, there are a "number of potential factors that may place individual children at higher risk for developing behavioral or emotional problems." "These factors include asynchronous development" (Roedell, 1984, 1986; Webb, 1993); "unrealistic expectations of parents and teachers, including excessive and inappropriate use of praise" (Freeman, 1995; Webb, 1993); "parent overinvolvement; a mismatch between capabilities and instructional environment; and difficulties with peer groups" (Pfeiffer & Stocking, 2000).

"The greater the asynchrony between various domains of development and adult expectations of children, the more vulnerable the child is to the development of socioemotional and behavioral problems" (Lovecky, 1997; Silverman, 1994). "Forty percent of gifted children state they feel different from other children; and feeling different is associated with lower self-esteem and more difficulties in relationships with peers, even though children perceived their differences generally in a positive light" (Janos & Robinson, 1985). These "perceived differences can lead gifted children to experience a variety of socioemotional problems" (Monks, Heller, & Passow, 2000). Furthermore, "children's abilities may be masked by learning difficulties that gifted and talented children can also present" (Brody & Mills, 1997). "These questions have led to a fundamental change in the ways in which the concept of giftedness is viewed. Except for certain functional purposes related mainly to professional focal points (i.e., research, training, legislation) and to ease of expression, the absolutist view of "the gifted" is not supported by current theory, research, and the assumptions of the various groups

represented in this study" (Renzulli, 1978). "This research, plus the contributions of Bloom (1985), Gardner (1983), Renzulli (1978, 1994), and others, suggests a shift in the emphasis from the traditional concept of "being gifted" (or not being gifted) to a concern about the development of giftedness or gifted behaviors in those youngsters who have the highest potential for benefiting from special educational services. This slight shift in terminology might appear to be an exercise in heuristic hair splitting, but it has significant implications for the concept of giftedness and subsequent identification and programming endeavors as stated by Renzulli (1990). Identification procedures that result in a total preselection of certain students and the concomitant implication that these young people are and always will be "the gifted" must be reexamined. This absolute approach, coupled with the almost total reliance on test scores, is inconsistent with current research."

"The alternative to such an absolutist view is to forego the tidy and comfortable tradition of knowing on the first day of school who is gifted and who is not. The research in favor of a more flexible approach is so overwhelming that it no longer needs to be argued" (Sternberg & Davidson, 1986); therefore, "it is time to examine identification guidelines and practical procedures (Renzulli, 1990) that are more consistent with present-day research on human abilities."

Sternberg and Wagner (1982) have "described giftedness as a kind of mental self-management with three characteristics: adapting to environments, selecting new environments, and shaping environments." Sternberg and Wagner "also described three skills typically used: separating relevant from irrelevant information, combining isolated pieces of information into a unified whole, and relating newly acquired information to information acquired in the past. Each of these studies found that gifted and talented

students tended to be different in predictable ways."

Cognitive or Environmental

Plucker & Callahan (2014) stated that "around the turn of the 21st century, a wave of new philosophical perspectives began to influence views of learning and talent. Many educators had grown weary of conceptualizations that described constructs, including giftedness, as being either largely cognitive or environmental." Barab and Plucker (2002) "reviewed theory and research within five such perspectives (i.e., ecological psychology, situated cognition, distributed cognition, activity theory, legitimate peripheral participation) and concluded that the separation of mind and context at the heart of traditional conceptions of talent development polarized learner and context, either implicitly or explicitly stating that, in the case of talent and giftedness, the individual impacts or influences the environment" (Plucker & Barab, 2005, p. 204; Corno et al., 2002; Snow, 1992).

"Barab and Plucker (2002) proposed an integrated model of giftedness in which talents, broadly defined, are developed through the interaction of the individual, environment, and sociocultural content. From their perspective, talent development is an ever-spiraling process, as continued interactions build on themselves over time and lead to greater opportunities to develop talent and greater success as a result. The primary implications are that solving real-world problems, within realistic contexts and with considerable support, should be the focus of talent development programs and that unless advanced learners have their talents fostered and remain challenged in K-12 schools, they will never develop their full potential as creative, real-world problem solvers. The situated view is more popular outside of the field than within, which is not surprising given that many gifted education programs continue to use an identify the bright"

student" intervention model, against which the situated approach explicitly argues."

"The latest major theoretical development is the model proposed by" (Subotnik et al. 2011, 2012; Worrell, Olszewski-Kubilius, & Subotnik, 2012), "who defined giftedness as performance that is clearly at the upper end of the distribution in a specific talent domain even relative to other high-functioning individuals in that domain." "Further, giftedness can be viewed as developmental in that in the beginning stages, potential is the key variable; in later stages, achievement is the measure of giftedness; and in fully developed talents, eminence is the basis on which this label is granted" (Subotnik et al., 2012, p. 176).

Summary

"There is no more varied group of young people than the diverse group known as gifted children and adolescents. Not only do they come from every walk of life, every ethnic and socioeconomic group, and every nation, but also they exhibit an almost unlimited range of personal characteristics in temperament, risk-taking and conservatism, introversion and extraversion, reticence and flamboyance, and effort invested in reaching goals. No standard pattern of talent exists among gifted individuals" (Neihart et al., 2002).

"Controversy has reigned over the effectiveness of teachers in the nomination procedure for gifted students" (Gagné, 1994; Hoge & Cudmore, 1986; McBee, 2006; Pegnato & Birch, 1959; Pierce et al., 2007; Renzulli 1986c; Rohrer, 1995; Siegle, Wilson, & Powell, 2013; Speirs Neumeister et al., 2007). "During the middle of the last century, Pegnato and Birch (1959) challenged the idea that teachers could reliably identify gifted students. They reported that teachers were ineffective in identifying students with IQ scores above 130." This research, often cited as evidence to support

Gagné (1994), "found that teachers were as effective as other methods of identification for gifted students." Although other researchers (Hodge & Kemp, 2006; Hoge & Cudmore, 1986; Rohrer, 1995) "have also found that teachers were able to identify gifted and talented students, some research (Speirs Neumeister et al., 2007) has shown that even experienced teachers often hold a "narrow conception of giftedness" and are not aware "how culture and environmental factors may influence the expression of giftedness in minority and economically disadvantaged students" (p. 479). The purpose of this study was to examine who is identified as gifted and talented for program inclusion in a small southeastern school district? Are age, gender, and socioeconomic status variables that affect selection as gifted? This study attempted to answer some of these questions for students identified as gifted and talented using criteria defined by the state of South Carolina in one small southeastern school district.

Chapter 3: Methodology

Introduction

Research by Renzulli and Reis (1997) reiterated that "the question of how to define giftedness has been debated for decades; and a single, unified definition does not and should not exist"; therefore, each state (SCDE, 1985) has their own criteria. According to Renzulli (1994), the use of "one size fits all curriculum" (p. 14) "produces the same type of learning for all students which may be anti-individual and anti-multicultural." Renzulli and Reis (1997) referred to this as "schoolhouse giftedness" (p. 8) with traits of good grades, high scores on standardized tests, and model classroom behavior. The purpose of this study was to examine who is identified as gifted and talented for program inclusion in a small southeastern school district? Are age, gender, and socioeconomic status variables that affect selection as gifted? This study attempted to answer some of these questions for students identified as gifted and talented using criteria defined by the state of South Carolina in one small southeastern school district.

Participants

Participants in this study were anonymous third-grade through sixth-grade students from a rural southeastern school district (Appendices B & C) in South Carolina. The researcher used the data management warehousing software, Enrich, to gather anonymous information. No student name, identification number, or school was requested. The requested information included grade, date of birth, gender, socioeconomic status, and academically gifted and talented qualification. The researcher did not have or use any identification of the students except a randomly assigned number.

Instruments

Selection as GT was based on the South Carolina regulations. To follow Title IX,

The Office for Civil Rights, and the State Board of Education Regulation 43-220, the South Carolina State Board of Education recognizes the need to provide gifted education services to identified students in Grades 1-12. Gifted and talented students are those who were identified in Grades 1-12 as demonstrating high-performance ability or potential in academic and/or artistic areas. These students require an educational program beyond that normally provided by the general school program to achieve their potential. Screening begins in the second grade for every student in the state and students start being served with gifted and talented services in the third grade.

South Carolina statewide screening is with the CogAt and ITBS tests. These tests are given in the late fall of a child's second grade school year. These scores are used to identify students as academically gifted and talented.

Dimension A-Reasoning Abilities

The CogAt is a group administered test ability battery. The purpose of the CogAt is to assess student abilities in reasoning and problem-solving using verbal, quantitative, and nonverbal (spatial) symbols. The CogAt is well suited to help educators make important student placement decisions, such as selecting students for gifted and talented programs. Exclusive features such as the Ability Profile Score can help expand the educational opportunities of all students. On Dimension A, a student must score at or above 93rd national age percentile on verbal/ linguistic, quantitative/mathematical, nonverbal, and/or a composite score. With an aptitude score that is at or above 96th percentile in Grades 2-6, a student automatically becomes qualified as GT96 and identified as academically gifted and talented.

Dimension B-Academic Achievement

The ITBS is a group administered achievement test battery. The purpose is to provide a comprehensive assessment of student progress in major content areas. Dimension B-Achievement Test of Academic Achievement requires that a student score at or above 94th percentile in reading comprehension and/or math concepts/problem-solving or a score of advanced on the math or reading portion of state testing.

Additional Dimension A and B Screening

Additional screening by the NWEA MAP test is also given in math and reading up to three times a year. Another additional "ability test is the NNAT which is an individually administered nonverbal ability test" (Naglieri, 2008).

The results from the administration of the aptitude (CogAT) and achievement tests are entered the Gifted Identification Forms and Tasks (GIFT) software program (SCDE, 2017), which identifies students who automatically qualify for a gifted and talented program. GIFT also identifies those students who may benefit from a secondary screening using the Performance Task Assessments (PTA; Dimension C).

Dimension C-Intellectual and Academic Performance

Dimension C (Intellectual/Academic Performance) requires students to demonstrate a high degree of interest in and commitment to academic and/or intellectual pursuits or demonstrate intellectual characteristics such as curiosity/inquiry, reflection, persistence/tenacity in the face of challenge and creative productive thinking. One of the methods by which these characteristics may be demonstrated is with a score of 16 on either the verbal or nonverbal component of the PTA for Grade 3 placement (SCDE, 2017).

Procedures

This was both a quantitative descriptive analysis research project involving mean, median, and mode (Huck, 2012) and binomial logistic regression analysis (Butin, 2010; Creswell, 1994; Huck, 2012, Laerd, 2015). Step one was to collect the data of the independent variables of birth month, gender, and socioeconomic status then the dependent variable of identified as academically gifted and talented or not identified. The data was formatted into spreadsheets to allow the statistician and researcher to then analyze the data. Step two was to create tables and graphs with the data. Step three was to utilize the SPSS (Statistical Package for the Social Sciences) binomial logistic regression to analyze the data as recommended by Laerd Statistics (2015). Through this evaluation, the researcher determined trends, looked for patterns, and looked for statistical significance. The binomial logistic regression analysis used each dependent variable of academically gifted and talented or not and the independent variables (birth month, gender, and SES). These tests looked to see how well the independent variables predicts the dependent variable. The data provided a measure of how well observed outcomes are related to the total population and the gifted population.

The researcher focused on each set of data based on research question. Once these were analyzed, the data set was removed and replaced with the next set. The first tests were on birth month, second on gender, and third on socioeconomic status compared to the dependent variable of identification of academically gifted and talented or not. Socioeconomic status was identified by lunch payment status of paid, reduced, or free.

Purpose Statement

The purpose of this study was to examine who is identified as gifted and talented for program inclusion in a small southeastern school district? Are age, gender, and

socioeconomic status variables that affect selection as gifted? This study attempted to answer some of these questions for students identified as gifted and talented using criteria defined by the state of South Carolina in one small southeastern school district. The categorical independent variable is the month of birth, followed by gender and then socioeconomic status. The categorical dependent variable is giftedness and the answer of yes or no. The null hypothesis is that there will be no difference. All months have an equally likely chance of producing giftedness. The alternate hypothesis is that at least 1 month has a different (high or low) probability of producing giftedness. At this point, the researcher coded the dates of birth (DOB) as the independent variable by months (September, 1; October, 2; November, 3; December, 4; January, 5; February, 6; March, 7; April, 8; May, 9; June, 10; July, 11; and August, 12). The academically gifted and talented classification was the dependent variable and was coded as 1. The non-academically gifted and talented was coded as 0.

Steps of Data Collection

1. The initial step was to collect data through a variety of methods:
    a. The researcher requested permission through the help of the principal and superintendent of the school district (Appendices B & C).
    b. The researcher collected student data: date of birth on Table 1, gifted classification on Table 2, gender data on Table 3, and socioeconomic status on Table 4 belonging to students in the third grade through sixth grade without identifying information (no names, no ID numbers, no school names) from the Enrich Data Warehouse and the technology department. The researcher sorted the data by birthday and used every set of data points.

c. The researcher collected data about birthdays and classification as academically gifted and talented. This information came from the Enrich Data Warehouse and the district gifted and talented software called GIFT.

2. The researcher coded the dates of birth (DOB) as the independent variable (Table 1) by months (September, 1; October, 2; November, 3; December, 4; January, 5; February, 6; March, 7; April, 8; May, 9; June, 10; July, 11; and August, 12).
3. The academically gifted and talented classification (Table 2) was the categorical dependent variable and was coded as 1. The non-academically gifted and talented was coded as 0.

Table 1

Date of Birth Chart

Month	Coding
September	1
October	2
November	3
December	4
January	5
February	6
March	7
April	8
May	9
June	10
July	11
August	12

Table 2

Gifted and Talented Classification Coding

Classification	Coding
Academically Gifted and Talented	1
Not Academically Gifted and Talented	0

Table 3

Gender Classification Coding

Classification	Coding
Female	1
Male	0

Table 4

Socioeconomic Status Coding

Classification	Coding
Free Lunch	2
Reduced Lunch	1
Paid Lunch	0

Summary

Determination of academically gifted and talented students has historically been defined by federal governments. In the United States, each individual state decides the criteria, while local school districts identify and serve to meet educational needs. Stakeholders are always interested in who qualifies. The methodology in this study was a descriptive quantitative analysis. The independent variables of this study were month of birth, gender, and socioeconomic status. The dependent variable was if the student qualification was academically gifted and talented or not qualified as academically gifted and talented. If the mean is "the expected" selection based on criteria, variation from the mean informed the researcher and the school district. The purpose of this study examined who is identified as gifted and talented for program inclusion in a small southeastern school district? Are age, gender, and socioeconomic status variables that affect selection as gifted? This study did attempt to answer some of these questions for students identified as gifted and talented using criteria defined by the state of South

Carolina in one small southeastern school district.

Chapter 4: Results

Introduction

This study was a descriptive quantitative analysis (Creswell, 1994) identified as academically gifted and talented at a small southeastern school district. Then a binomial logistic regression statistical analysis with categorical independent variables (month of birth, gender, and socioeconomic status) based on a dichotomous (yes or no) dependent variable of gifted and talented identification (Laerd, 2015) was completed with the same data.

South Carolina statewide screening is with the CogAt and ITBS tests. These tests are given in late second grade for every student to begin identification of gifted and talented services. The CogAt is a group-administered test of ability. A student must score at or above the 93rd national age percentile on verbal/linguistic, quantitative/mathematical, nonverbal, and/or a composite score. The ITBS is a group administered achievement test battery. A student must score at or above the 94th percentile in reading comprehension and/or math concepts/problem-solving, or a score of advanced on the math or reading portion of state testing. Additional screening is given up to three times a year with the NWEA MAP test in math and reading. Another additional "screening test is the NNAT which is an individually administered nonverbal ability test" (Naglieri, 2008). Another intellectual and academic performance test is the PTA for Grades 2-5 (SCDE, 2017). The dependent variables of the study was if the student qualified as academically gifted and talented or did not qualify as academically gifted and talented. The independent variables were month of birth, gender, and socioeconomic status based on lunch status of paid, reduced, or free. If the mean is "the expected" selection based on criteria, variation from the mean informed the researcher

and the school district. The statistical analysis of the logistic regression strengthened the study to predict if the independent variables would increase or decrease the identification of academically gifted and talented.

This chapter is organized into a brief introduction, restatement of the problem, and presentation of the results organized by the research questions including graphs. The statistician and researcher used charts and graphs to visually make the data easier to analyze, assist in looking for trends, and analyze for any possible variation in the selection of the gifted and talented population. Lastly, a summary of the general terms of the results is included with the null hypothesis outcomes.

Restatement of the Problem

Research by Renzulli and Reis (1997) "reiterated that the question of how to define giftedness has been debated for decades; and a single, unified definition does not and should not exist"; therefore, each state (SCDE, 2017) had their own criteria. According to Renzulli (1994), the use of "one size fits all curriculum" (p. 14) produces the same type of learning for all students which may be anti-individual and anti-multicultural. Renzulli and Reis (1997) referred to this as "schoolhouse giftedness" (p. 8) with traits of good grades, high scores on standardized tests, and model classroom behavior. The purpose of this study examined who is identified as gifted and talented for program inclusion in a small southeastern school district? Are age, gender, and socioeconomic status variables that vary in selection of the gifted? This study did attempt to answer some of these questions for students identified as gifted and talented using criteria defined by the state of South Carolina in one small southeastern school district.

Presentation of the Results Organized by Research Questions

Who is identified as gifted and talented for program inclusion in a small southeastern school district? Are age, gender, and socioeconomic status variables that affect selection as academically gifted and talented? Student names and identification numbers were not requested for the research to remain anonymous. The researcher used the data management warehousing software, Enrich, to gather the data. The requested information did include grade, school, date of birth, gender, academically gifted and talented qualification, and socioeconomic status of paid, reduced, or free lunch status.

Age By Birth Month Results

Age Research Question 1. Is a student's birth month a predictor of their identification as gifted and talented? The third- through sixth-grade results included a total of 1,541 students from the database. The number of students with birthdays in each month on Table 5 ranged from 7-9%; however, 130 students were reported not in the expected age corresponding grade level and therefore removed from this study. This may have been due to parents/guardians academically redshirting their students, early starting of school, special education status, possible English as a Second Language Learner, and/or possible retention. Due to the non-identifiable, anonymous information of this study, the researcher has no way of knowing for sure that is why they were removed from this study.

Table 5

Frequency Table Total Population by Birth Month Results

Month	Frequency	Results
September	137	9%
October	121	8%
November	112	7%
December	122	8%

January	111	7%
February	113	7%
March	107	7%
April	128	8%
May	123	8%
June	104	7%
July	115	7%
August	118	8%
	1411	

Of the total number of students 1,411, as shown in Table 5, September has the highest percentage at 9%. The other months range from 7% to 8%. Next, in Table 6, was the gifted population birth months.

Table 6

Frequency Table Gifted Population by Birth Month Results

Month	Frequency	Results
September	45	14%
October	29	9%
November	28	9%
December	36	11%
January	27	9%
February	24	8%
March	15	5%
April	24	8%
May	27	9%
June	20	6%
July	20	6%
August	20	6%
	315	

Table 6 however, when looking at the gifted population of 315 students within the total students of 1,411 the month of September rises to 14%. The student birth month of December was at 11%. This is more than the total population which was 8%. The gifted population by month ranges from 5%-14% which is a larger range from the total population of 7%-9%. How many students are found in each school within this district?

The following, *Figure 1,* was of the total percentage of students by school.

Figure 1. Total Students by School.

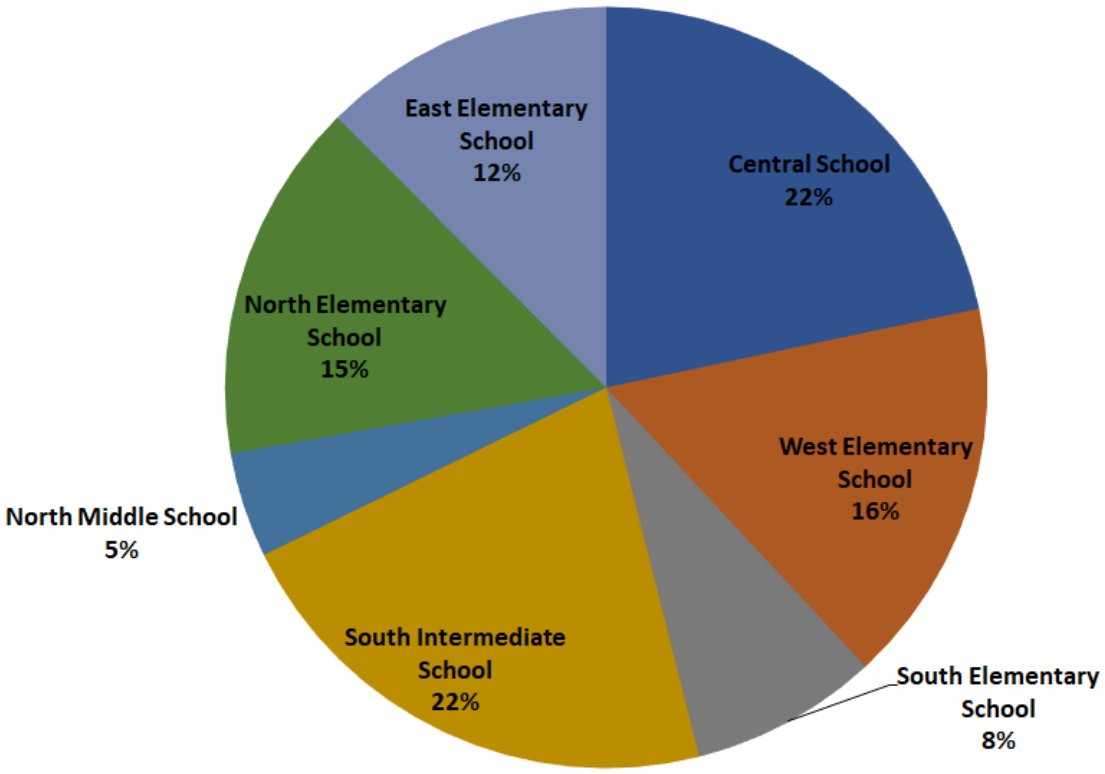

Figure 1. Total Students by School. Central School and South Intermediate School both had 22% of the total students by school. West Elementary School was next with 16% of the total student population. North Elementary School had 15% of the total population. 12% of the total population attended East Elementary School. The smallest populations were South Elementary School at 8% then North Middle School at 5%. The following,

Figure 2, showed the percentage of gifted students by each school they attend.

Figure 2. Percent Gifted by School.

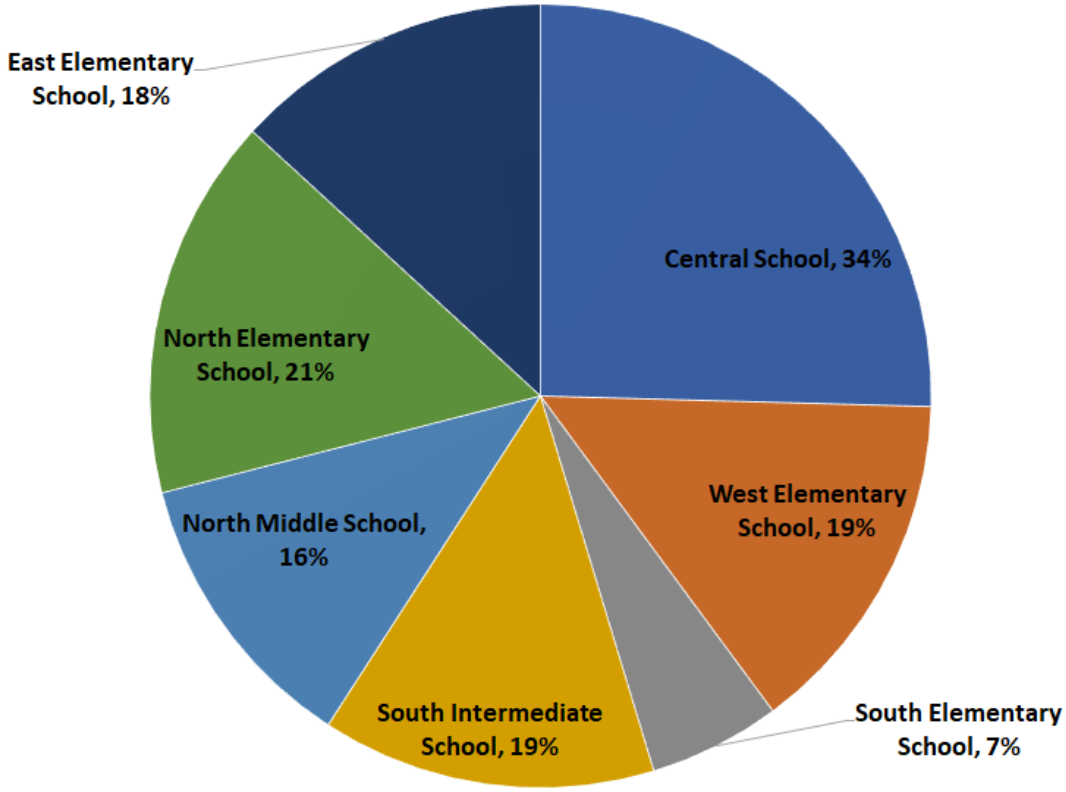

Figure 2. Percent Gifted by School showed the percentage of all gifted students by school of attendance. Three elementary schools consist of grades 3, 4, 5, and 6. One elementary school consists of grades 3, 4, and 5. While another elementary school only includes grade 3. The intermediate school included in this study consists of grades 4, 5, and 6. One middle school is grade 6.

Figure 3 is a frequency table of the total amount of students that are organized by birth month.

Figure 3. All Students by Birth Month

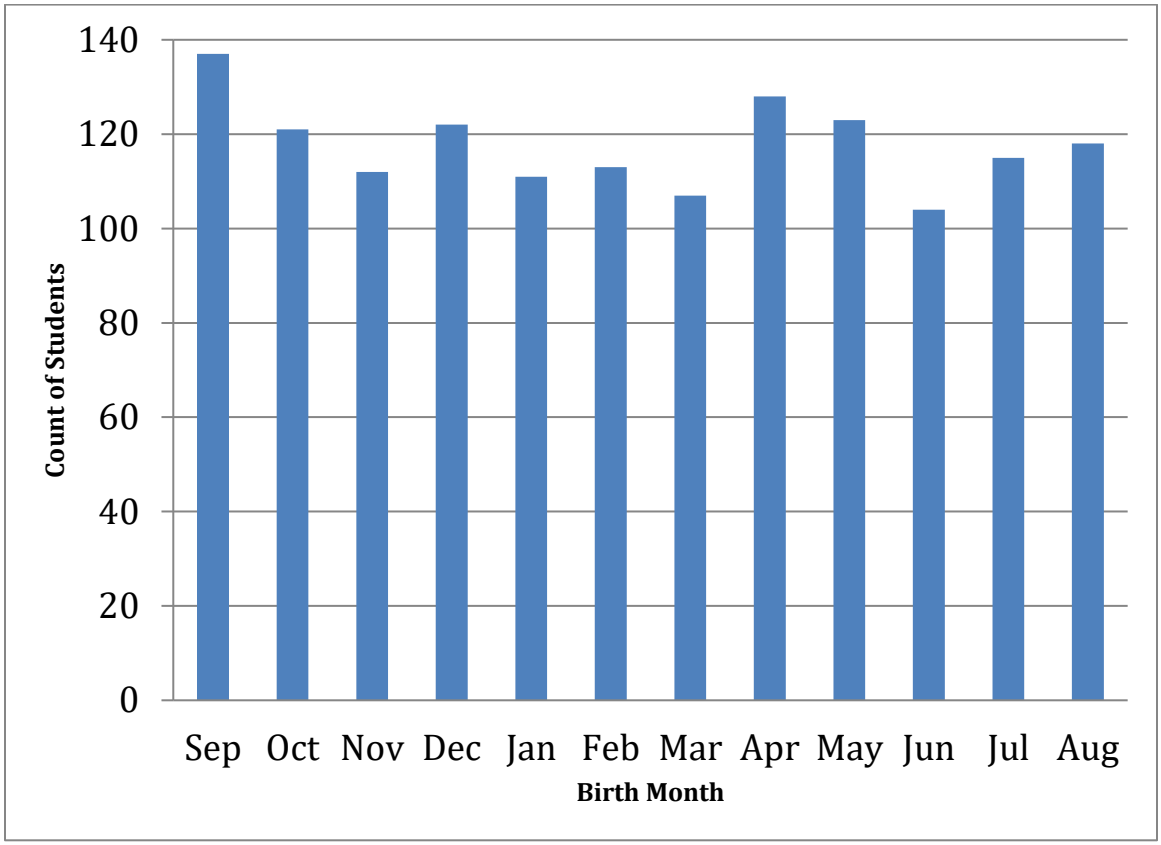

Figure 3. All Students by Birth Month showed the total students by birth month with only a slight difference in number of students in each category. September being the largest and June being the smallest number of student with those birth months. All months have 104 students or more but less than 137.

Figure 4 represented the number of gifted students in each birth month.

Figure 4. Gifted by Birth Month

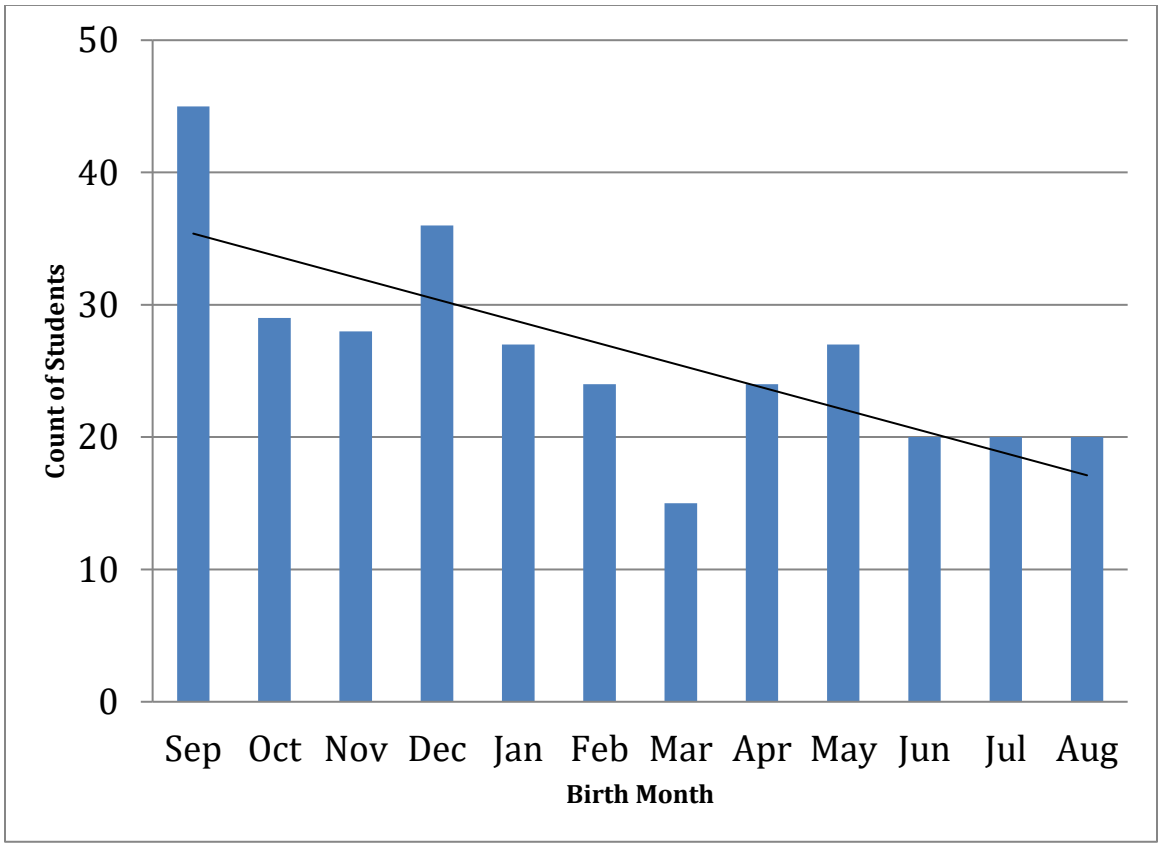

Figure 4. Gifted by Birth Month showed a clear difference in the birth months in the total population and the gifted population. The total population had similar numbers while the gifted population had definite peaks and valleys of difference.

The third- through sixth-grade results of academically gifted and talented students by age determined by birth month ranged from 4-14%. The majority were from the month of September at 45 students with 14%. March was the next to smallest with 15 students representing 5%. December was the next largest with 36 students representing 11% of the total gifted population in Grades 3-6. The gifted population were not as evenly distributed as the total student population on birth month.

The logistic regression model showed the statistically significant independent variables. Each independent (birth month, gender, and SES) variable was analyzed with SPSS (Statistical Package for the Social Sciences) software as referenced in Laerd Statistics (2015), related to each research question.

Figure 5 looked at the gifted by birth month when separated into half of the school year. The school year was divided into two equal parts of September to February followed by March through August.

Figure 5. Gifted by Half of the School Year

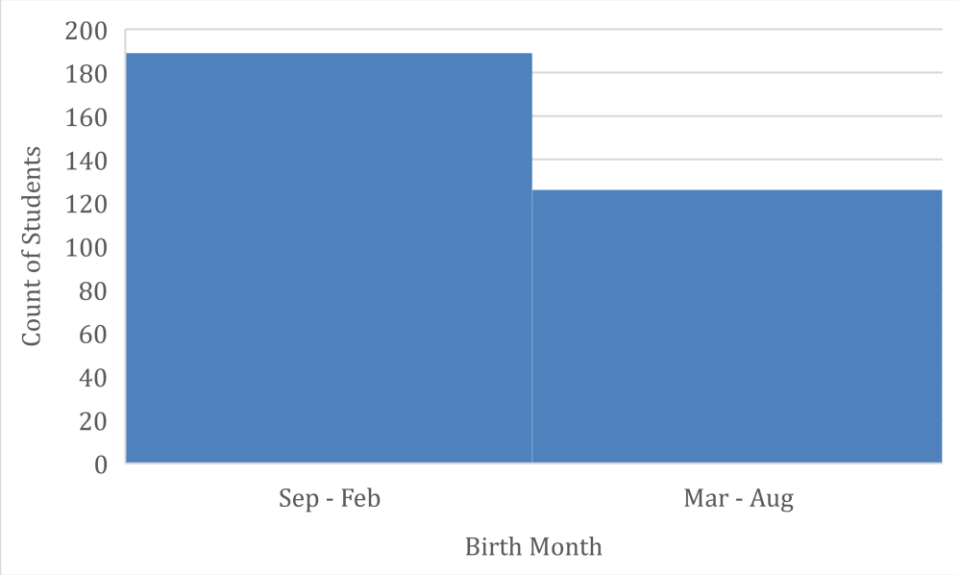

Figure 5. Gifted by Half of the School Year more gifted students have birth months in the first half of the school year during September through February, with the total number being 203 at 62%. The birth months in the second half of the school year during March through August were lower, with the total being 126 at 38%. The total number of gifted and talented students overall was 329.

In statistics, linear regression analysis is used to model the relationship between two variables – an independent variable (birth month, gender, and SES) and a dependent

(gifted or not) variable. The model attempts to predict the response of the dependent variable based on the variation of the independent variable. For simple linear regression, there is one independent variable and for multiple linear regression, there are multiple independent variables. This study had one dichotomous (yes or no) dependent variable whether a student is identified academically gifted and talented.

Two of the most common applications on linear regression are:

- prediction or forecasting, and
- definition of the strength of the relationship between the independent and dependent variables.

The prediction method uses a set of independent and dependent variables to establish a model. Based on the model, when additional independent data points are added dependent data points can be predicted. The strength of relationship is used to describe how close the relationship is between the independent (birth month, gender, SES) and dependent (being gifted or not) variables. One use was to indicate the null hypothesis that the dependent variable (gifted yes or no) has no relationship to the independent (birth month, gender, SES) variable. (Laerd, 2015)

Linear regression models are often fitted using two tools: the least squares approach and an equation ($y = mx + b$) for the relationship between the independent and dependent variables. Least squares measured the difference between the actual data point and the fitted value as defined by the model.

The coefficient of determination, R2, is based on the sum of squares of the difference between the actual data point and the fitted value. R2 provides a numerical value between 0 and 1 that represents the measure of how well the model predicts the

actual data point. The researcher was interested in learning was interested in learning the significance and relative strength of the relationship between variables. R^2 approaching 1 indicated that the model was a good prediction of the independent variables. R^2 approaching 0 indicated that the dependent variable has little relationship to the independent variable.

Binomial logistic regression (logistic regression) is like linear regression with the exception that the dependent variable (gifted or talented) is dichotomous ("gifted" or 1, and "not gifted" or 0). Logistic regression is also capable of evaluating nominal or categorical independent variables (such as gender – 2 categories: "male" and "female"). Like linear regression analysis, logistic regression also evaluates the relationship between the independent and dependent variables; however, the mathematical calculations are much more complex.

A slight difference in the application of logistic regression are:

- determine which of the independent (birth month, gender, SES) variables have a statistically significant effect on the dependent (gifted yes or no) variables, and
- determine how well the model predicts the dependent variables of birth month, gender, and SES.

Figure 6 represents the statistical significance of the model as calculated by the "Omnibus Test of Model Coefficients"

Figure 6. Omnibus Tests of Model Coefficients.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	79.856	14	.000

	Block	79.856	14	.000
	Model	79.856	14	.000

Figure 6. For this type of binomial logistic regression, you can reference the "Model" row. From Figure 6, you can see that the model is statistically significant ($p < .0005$; "**Sig.**" column). The prediction was significant.

Figure 7 represents how much variation in the dependent variable can be explained by the model (the equivalent of R2 in multiple regression).

Figure 7. Model Summary.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	1334.101[a]	.055	.087

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Figure 7 contains the Cox & Snell R Square and Nagelkerke R Square values, which are both methods of calculating the explained variation (it is not as straightforward to do this as compared to multiple regression). These values are sometimes referred to as pseudo R^2 values and will have lower values than in multiple regression. However, they are interpreted in the same manner, but with more caution. Therefore, the explained variation in the dependent (gifted or not) variable based on our model ranges from 5.5% to 8.7%, depending on whether you reference the Cox & Snell R^2 or Nagelkerke R^2 methods, respectively. Nagelkerke R^2 is a modification of Cox & Snell R^2, the latter of which

cannot achieve a value of 1. For this reason, it is preferable to report the Nagelkerke R^2 value. These goodness of fit test showed SES is a good fit, gender is not, and birth month is weak except for the months of September and December. September and December had a significance to being identified as GT but not the rest of the birth months.

Figure 8 represents the variables in the equation table that show the contribution of each independent variable to the model and its statistical significance.

Figure 8. Variables In the Equation.

Variables in the Equation

		Wald	df	Sig.
Step 1a	Free/Reduced Lunch	53.077	2	0.000
	Free/Reduced Lunch(1)	52.451	1	0.000
	Free/Reduced Lunch(2)	2.892	1	0.089
	Gender(1)	1.049	1	0.306
	Month of school Year (Sept - Aug)	20.080	11	0.044
	Month of school Year (Sept - Aug)(1)	0.669	1	0.413
	Month of school Year (Sept - Aug)(2)	2.099	1	0.147
	Month of school Year (Sept - Aug)(3)	2.623	1	0.105
	Month of school Year (Sept - Aug)(4)	6.212	1	0.013
	Month of school Year (Sept - Aug)(5)	1.794	1	0.180

Month of school Year (Sept - Aug)(6)	1.327	1	0.249
Month of school Year (Sept - Aug)(7)	0.490	1	0.484
Month of school Year (Sept - Aug)(8)	0.269	1	0.604
Month of school Year (Sept - Aug)(9)	0.657	1	0.418
Month of school Year (Sept - Aug)(10)	0.164	1	0.685
Month of school Year (Sept - Aug)(11)	0.027	1	0.869
Constant	62.808	1	0.000

a. Variable(s) entered on step 1: Free/Reduced Lunch, Gender, Month of school Year (Sept - Aug).

Figure 8. Contains the variables in the equation with the following terms.

Wald = Wald's statistic for testing significance of parameter estimates

Df = Degrees of freedom

Sig = The level of statistical significance indicated by the Score test for the coefficient. Small values (less than 0.05) indicate that the coefficient is statistically different from zero.

The Wald test ("Wald" column) is used to determine statistical significance for each of the independent variables. The statistical significance of the test is found in the "Sig." column. In a bionomical logistic regression analysis, the sig. number should be small (less than 0.05) and the Wald to be large. The df is the degrees of freedom and tells how many options were in the test. Figure 8 showed that Paid lunch (53.077) with a sig. of 0.000, Free lunch (52.451) with a sig. of 0.000, and September birth month (20.080) with a sig. of 0.044 were the most statistically significant in this study. Now, each research question will be reported as Birth Month Run, Gender Run, and SES Run within the logistical regression analysis.

Figure 9 represents the Birth Month run.

Figure 9. Birth Month Omnibus Tests of Model Coefficients.

Birth Month Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	22.607	11	.020
	Block	22.607	11	.020
	Model	22.607	11	.020

Model is statistically significant (p < 0.05)

Figure 9. Contains the Omnibus Tests of the Model Coefficients that provided the overall statistical significance of the model (namely, how well the model predicts categories compared to no independent variables). For this type of binomial logistic regression, you can reference the "**Model**" row. From the table above, you can see that the model is statistically significant ($p < 0$ .05; "**Sig.**" column).

Figure 10 represents the variables in the equation for the Birth Month run.

Figure 10. Birth Month Variable in the Equation.

Birth Month Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	Month of school Year (Sept - Aug)			21.215	11	.031			
	Month of school Year (Sept - Aug)(1)	-.525	.375	1.967	1	.161	.591	.284	1.232
	Month of school Year (Sept - Aug)(2)	.435	.325	1.791	1	.181	1.545	.817	2.920
	Month of school Year (Sept - Aug)(3)	.491	.328	2.232	1	.135	1.633	.858	3.109
	Month of school Year (Sept - Aug)(4)	.718	.316	5.181	1	.023	2.051	1.105	3.808

	Month of school Year (Sept - Aug)(5)	.454	.330	1.891	1	.169	1.575	.824	3.009
	Month of school Year (Sept - Aug)(6)	.279	.336	.686	1	.407	1.321	.684	2.554
	Month of school Year (Sept - Aug)(7)	-.225	.371	.366	1	.545	.799	.386	1.654
	Month of school Year (Sept - Aug)(8)	.123	.334	.135	1	.713	1.131	.588	2.176
	Month of school Year (Sept - Aug)(9)	.321	.328	.955	1	.328	1.378	.724	2.622
	Month of school Year (Sept - Aug)(10)	.154	.349	.195	1	.659	1.167	.588	2.314
	Month of school Year (Sept - Aug)(11)	.031	.347	.008	1	.929	1.032	.522	2.038
	Constant	-1.589	.245	41.952	1	.000	.204		

a. Variable(s) entered on step 1: Month of school Year (Sept - Aug).

Figure 10. Contains The Birth Month Variables in the Equation that showed the contribution of each independent variable to the model and its statistical significance. The Wald test ("Wald" column) is used to determine statistical significance for each of the independent variables. The statistical significance of the test is found in the "Sig." column. From these results you can see that Month of School Year September (p = 21.215) and Month of School Year of December (p = 5.181) added significantly to the model/prediction, but others like Month of School Year August (p = .008) did not add significantly to the model. The B coefficients ("B" column) are used in the equation to predict the probability of an event occurring, but not in an immediately intuitive manner. The coefficients do, in fact, show the change in the log odds that occur for a one-unit change in an independent variable when all other independent variables are kept constant. So, for example, the log odds change for Month of School Year (4) which is the month of December log odds change is 0.454, which is the increase in log odds (as *B* is positive).

SPSS Statistics also includes the odds ratios of each of the independent variables in the "**Exp(B)**" column along with their confidence intervals ("**95% C.I. for EXP(B)**" column). This informs you of the change in the odds for each increase in one unit of the independent variable. For example, for Birth Month, an increase in one unit (i.e., being December) increases the odds by 2.051. What this means is that the odds of identified as gifted and talented ("yes" category) is 2.051 times greater for December birth months as opposed to not having a December birth month or not gifted. Values less than 1.000 indicate a decreased odds for an increase in one unit of the independent variable. The null hypothesis on the independent variable of birth month makes no difference in identification as academically gifted and talented has been disproven due to a statistical significance was found. Mainly with the month of September being a predictor of GT. December had a significance while August, July, June, and May birth months would probably not be identified as gifted and talented.

Gender Results

Gender Research Question 2. Is a student's gender a predictor of their identification as academically gifted and talented?

Table 7

Gender Total Population Results

	Number	Percentage Results
Total Female	740	48%
Total Male	801	52%
Total Female Gifted	176	11.4%
Total Male Gifted	153	9.9%

Total student population had 740 females at 48% while 801 were males at 52%. The gifted population had 176 females at 11.4% with 153 males at 9.9%. These are similar.

Figure 11 represented the total population of male and female students.

Figure 11. Gender Total Population Third through Sixth Grade.

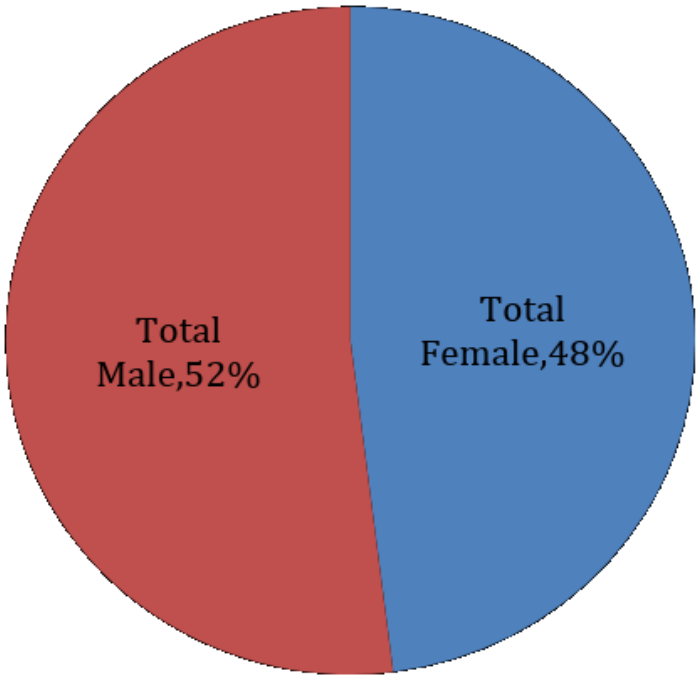

Figure 11. Gender Total Population Third through Sixth Grade stated the total population of third graders through the sixth graders. This represented how many males which was 52% are to females which was 48%.

Figure 12 represented how many gifted children were male versus female.

Figure 12. Gender Gifted Population Third Through Sixth Grade

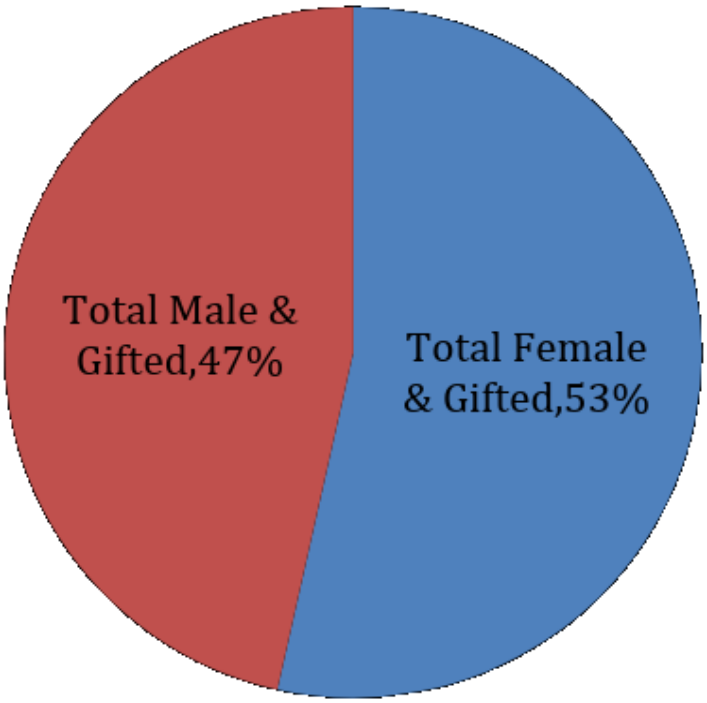

Figure 12. Gender Gifted Population Third through Sixth Grade represented how many gifted males at 47% versus how many gifted females at 53%. The total population and gifted population were similar percentages.

Table 8

Gender Gifted Population Results

	Number	Percentage Results
Total Female	740	48%
Total Male	801	52%
Total Female Gifted	176	11.4%
Total Male Gifted	153	9.9%

Table 8 showed that the number of total males of 801 students was at 52%. The total females of 740 were at 48%. The gifted males of 153 was at 9.9%. The gifted females of 176 at 11.4%. These are very similar to each other. Gender does not seem to be a

predictor of GT.

Figure 13 represents the Gender run.

Figure 13. Gender Categorical Variables Coding

Gender Categorical Variables Codings

		Frequency	Parameter coding (1)
Gender	Male	725	1.000
	Female	679	.000

Figure 13. Gender Categorical Variables Coding stated that the gender count had more males than females. The Parameter coding only had one coding choice of male or female.

Figure 14 represents the results of the Omnibus Tests of Model Coefficients.

Figure 14. Gender Omnibus Tests of Model Coefficients

Gender Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	1.323	1	.250
	Block	1.323	1	.250
	Model	1.323	1	.250

Model is not statistically significant (p > .0005)

Figure 14. The Gender Omnibus Tests of Model Coefficients stated that the logistic regression analysis did not show a statistical significance because (p>.0005). So, being male or female does not increase a student's chance to be identified as academically gifted and talented. The null hypothesis of gender makes no difference on being classified as academically gifted and talented was proven true. Gender does not predict GT. Next, we will look at the third research question.

Socioeconomic Status Results

Socioeconomic Status Research Question 3. Is a student's socioeconomic status a predictor of their identification as academically gifted and talented?

The following Tables 9, 10, 11, and 12 delve into the number breakdowns of each grade level to see if any trends appear.

Table 9 represents the third-grade results.

Table 9

Third-Grade Results

Classification	Results
Free Lunch	48.24%
Reduced Lunch	6.23%
Paid Lunch	45.53%
Female	51.22%
Male	48.78%
Gifted	12.47%

The third-grade students, Table 9, had the highest percentage of females, 51.44%, followed by males at 48.78%. Most students are on free lunch, 48.24%; then paid lunch, 45.53%; and then reduced lunch, 6.23%. The identified academically gifted and talented population is the lowest at 12.47%.

Table 10 represented the fourth-grade results.

Table 10

Fourth-Grade Results

Classification	Results
Free Lunch	47.41%
Reduced Lunch	6.48%
Paid Lunch	46.11%
Female	45.60%
Male	54.40%

Gifted	22.80%

The fourth-grade results, Table 10, were similar to the third grade in socioeconomic status.

Table 11 represented the fifth-grade results.

Table 11

Fifth-Grade Results

Classification	Results
Free Lunch	46.75%
Reduced Lunch	7.00%
Paid Lunch	46.25%
Female	45.50%
Male	54.50%
Gifted	20.25%

The fifth-grade results, Table 11, had more males, 54.50%, than females, 45.50%, similar to the third-grade results; however, the socioeconomic status of free lunch, 46.75%, and paid lunch, 46.25%, were very close in numbers of not even a full point. The reduced lunch, 7.00%, stayed in the lowest category. The percentage of academically gifted and talented students went down slightly to 20.25%.

Table 12 represented the sixth-grade results.

Table 12

Sixth-Grade Results

Classification	Results
Free Lunch	41.93%
Reduced Lunch	8.07%
Paid Lunch	50.00%
Female	49.74%
Male	50.26%
Gifted	29.69%

The sixth-grade socioeconomic status, Table 12, was different from the other grade levels. Paid lunch was the highest at exactly 50.00%, followed by free lunch at 41.93%, then reduced lunch at 8.07%. The males at 50.26% and females at 49.74% were within a point of each other. The identified academically gifted and talented swelled to 29.69% of the students.

Figure 15 represented the SES for the total population.

Figure 15. Total Population Lunch Payment.

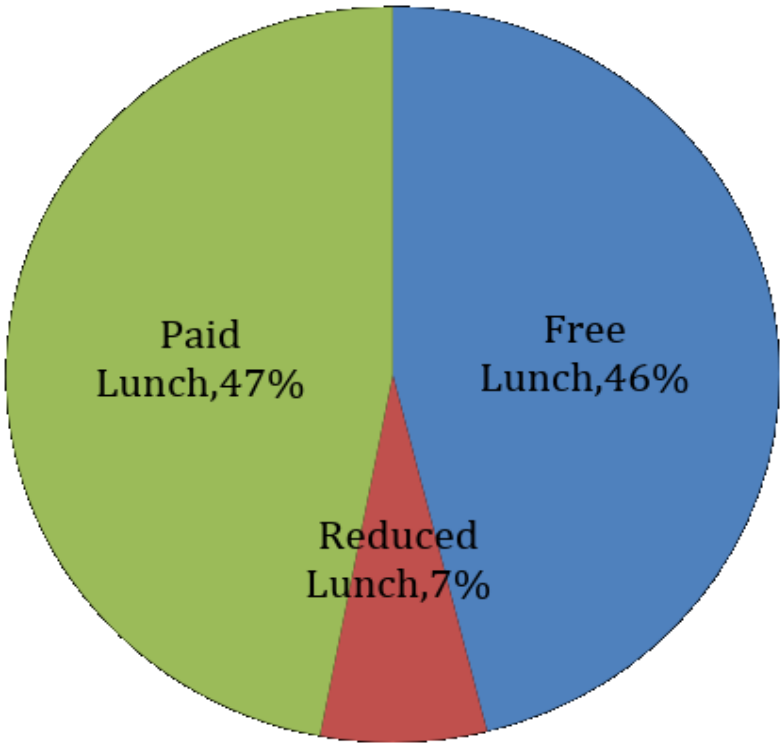

Figure 15. The total population SES was classified according to lunch payment. The paid lunch represented 47% of the population. Free was at 46% which is very similar and close to the paid lunch total. However, reduced lunch was the smallest represented

population with only 7%. The socioeconomic status of the total gifted population was broken down next into *Figure 16*.

Figure 16 represented the SES for the total population.

Figure 16. Gifted Population Lunch Payment.

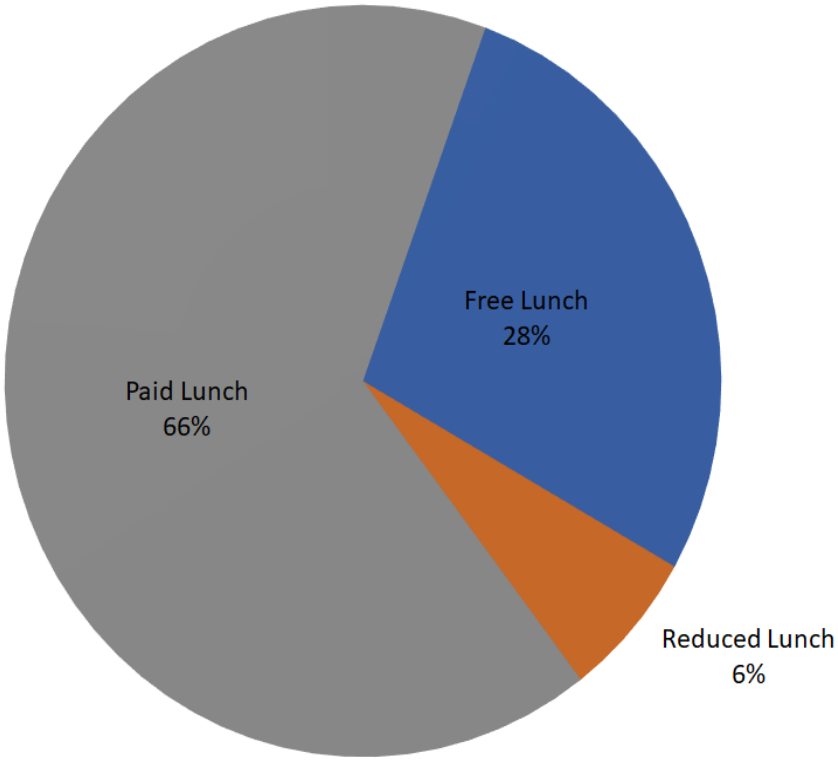

Figure 16. Most of the gifted population is in the socioeconomic status of having paid lunch at 66%. Free lunch was only 28% of the gifted population. These two categories are very different in the total (Figure 15) and gifted (Figure 16). The total paid population was 47% while the gifted paid population was a much larger 66%. The total free lunch number of students was 46% which was close to their paid population. However, when you look at the gifted population free lunch is only 28%. So, a discrepancy is shown.

Reduced lunch was about the same for the total population at 7% and gifted population at 6%.

Table 13

Third through Sixth Grade SES Results

	Number	Percentage Results
Total Free/Reduced	814	53%
Total Paid	727	47%
Total Gifted	329	21.3%
Total Free/Reduced Gifted	112	7.3%
Total Paid Gifted	217	65.96%
Total Female Gifted	176	11.4%
Total Male Gifted	153	9.9%

The amount of paid lunch in Table 13 was much higher at 66% for the gifted and talented population than the total population at 47%. The reduced lunch is similar, with 6% for the gifted and talented population and 7% for the total population. The free lunch status is 28% for the gifted and talented population, while it is 46% for the total population. Results of the whole population do not compare to the gifted sample. A discrepancy is shown. This will be addressed further in the conclusions in Chapter 5.

SES run:

Figure 17 represents the SES Omnibus Tests.

Figure 17. SES Omnibus Tests

SES Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	57.177	2	.000
	Block	57.177	2	.000
	Model	57.177	2	.000

Model is statistically significant (p < .0005)

Figure 17. The SES omnibus tests of model coefficients model is statistically significant due to the Model being less than .0005 at 0.000. When looking at the total number of

students in third through sixth grade of 1,411, the majority are on free/reduced lunch at 53% and paid at 47%.

Figure 18 represents the SES Hosmer Lemeshow Test.

Figure 18. SES Hosmer and Lemeshow Test

SES Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	.012	1	.911

Figure 18. For this test you do not want the result to be statistically significant because this would indicate that you have a poor fitting model. In this example, the Hosmer and Lemeshow test is not statistically significant (p = .991; "**Sig.**" column), indicating that the model is not a poor fit. (Laerd, 2015) This states that the model is a good fit and SES does predict GT.

Table 14

SES Variables in the Equation

SES Variables in the Equation

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	Free/Reduced Lunch			53.404	2	.000			
	Free/Reduced Lunch(1)	1.076	.148	52.858	1	.000	2.932	2.194	3.919
	Free/Reduced Lunch(2)	.508	.287	3.119	1	.077	1.661	.946	2.918
	Constant	-1.987	.120	274.192	1	.000	.137		

a. Variable(s) entered on step 1: Free/Reduced Lunch.

The independent variable of SES was represented by paid lunch, reduced lunch, and free lunch. The Wald test ("**Wald**" column) is used to determine statistical significance for each of the independent variables. The statistical significance of the test Table 13 is found in the "**Sig.**" column. From these results you can see that Free/Reduced Lunch

which was paid (p = 53.404) and Free/Reduced Lunch(1) which was free (p = 52.858) added significantly to the model/prediction, but others like Free/Reduced Lunch(2) which was reduced lunch payment (p = 3.119) did not add significantly to the model.

The Variables in the Equation, Table 13, showed the contribution of each independent variable to the model and its statistical significance. The Wald test was used to determine statistical significance of each of the independent variables. Statistical significance was in the Sig column. The statistical significance was found in: Month of School Year .044 September, Month of School Year .013 December, and Free/Reduced. Lunch Status .089 Paid lunch. The B coefficients used in the equation to predict the probability of an event occurring, like Free/Reduced Lunch(1) 1.089 which would be REDUCED lunch status and the student would not be classified as GT. Followed by Free/Reduced Lunch(s) which is FREE lunch status and the student would probably also not be classified as GT. So, if a student has paid lunch the logistic regression tests predicts that person has a better chance to be identified GT. A September birth month predicts the student will be identified GT. A December birth month also have a good prediction of being GT. However, birth months late in the school year like August, July, June, May, and April predict you probably will not be identified as gifted. Reduced lunch is a smaller percentage in both total and gifted populations. But when looking at FREE lunch is where the total population is high, and the gifted population is low. A discrepancy is shown.

The null hypothesis said no difference between SES and being gifted. This logistic regression analysis has disproven that null hypothesis. Due to paid predicts gifted while free predicts not gifted. This is a discrepancy. This will be discussed in Chapter 5.

Summary in General Terms of the Results

When looking at the breakdown of age by month in the total population of students, there was little discrepancy between months. The total population had a very similar breakdown of 7-9% of each month represented; however, the gifted population was the largest at 14% in September, followed by December at 11%. While October, November, January, and May each average 9% in birth month. February and May had 8% of the birth months. The birth months of June, July, and August only 6% each. While March was the smallest month represented with only 5%.

The academically gifted and talented identification starts with the smallest in third grade with 12.07%, then peaks in the sixth grade with 29.69%. This makes sense due to the state of South Carolina first screening in the fall of the second grade of students, with gifted pull-out services beginning in third grade. This district offers additional testing in the fall for third through sixth grades. The state provides additional screening in the spring for second through fifth grades if a student has qualified in at least one dimension, either ability of a 93% or higher or academic achievement of a score of 94% or higher.

A binomial logistic regression was performed to ascertain the effects of gender, socioeconomic status, and birth month on the likelihood of students being identified as academically gifted and talented. The logistic regression model was statistically significant, $\chi 2(4) = 79.856$, $p < .0005$. The model explained 8.7% (Nagelkerke R2) of the variance in being selected as gifted and correctly classified 79.8% of cases. Of the predictor variables socioeconomic status and birth months of September and January were statistically significant: (as shown in Table 10).

The results of the descriptive quantitative analysis and the binomial logistic regression model were similar. The descriptive quantitative analysis and the binomial logistic regression model both found the most students identified as academically gifted

and talented socioeconomic status as well as the birth months of September and December being statistically significant.

Chapter 5: Conclusions

Summary of Results

The descriptive quantitative analysis (Creswell, 1994) and binomial logistic regression model (Laerd, 2015) of the study leads one to think there is a trend toward academically gifted and talented students being identified with month of birth, mainly September. December was the second highest month in the study. The logistic regression model was statistically significant, $\chi 2(4) = 79.856$, $p < .0005$. The model explained 8.7% (Nagelkerke R2) of the variance in being selected as gifted.

The population of gifted and talented seems to be at a minimal percentage in the third grade, then rises significantly in the sixth grade. The gifted and talented population sample is most of paid lunch (66%), while the total population at paid lunch is less than half (47%). The gifted and talented population is composed of socioeconomic status of students who have paid lunch at 66%; then free lunch at 28%; and last, reduced lunch at 6%. The total population has a socioeconomic status composed of students who have paid lunch of 47%, free lunch of 46%, and reduced lunch of 7%. "Underrepresentation of gifted and talented students in the free lunch socioeconomic category might be a social justice issue in schools not having equal opportunities for all" (Theoharis, 2007). Belanger and Gagné (2006) discussed the "need for decision makers to be cognizant of the lower socioeconomic status being underrepresented in academically gifted and talented identification."

Discussion of the Findings

Age Research Question 1. Is a student's birth month a predictor of their identification as gifted and talented? The findings show more gifted students identified with the birth months of September and December. Having a September birth month is a

predictor that a student might be identified academically gifted and talented. If a student's birth month is later in the year it is a predictor that they will be not likely be identified as gifted. Age alone could be the answer. This would need to be researched further using a larger population with different states being represented. When compared to the total population, the results of the gifted population do not follow the same trends. The trend of months being evenly represented did not hold true within the gifted population.

The third- through sixth-grade results included a total of 1,411 students from the database. The number of students with birthdays in each month ranged from 7-9%. However, 130 students were reported not in the expected age corresponding grade level. This may have been due to parents/guardians academically redshirting their students, early starting of school, special education status, possible English as a Second Language Learner, and/or possible retention. Due to the non-identifiable, anonymous information of this study, the researcher has no way of knowing for sure, so they were removed from the study.

The null hypothesis of the dependent variable of birth month would not make a difference in identification of the dependent variable, gifted, was disproven by the descriptive quantitative analysis and the logistic regression statistical tests. So, birth month can be a predictor of gifted. Particularly the month of September followed by December.

Gender Research Question 2. Is a student's gender a predictor of their identification as academically gifted and talented? No, gender does not predict identification of academically gifted and talented. When looking back at another body of previous research by Olivares and Rosenthal (1992), "the element of gender seemed to be

predominantly female in the gifted population and mostly male in the total population." This did not hold true with the gifted or regular population in this study. Yes, a student's birth month of September and December predict identification of academically gifted and talented.

"There is no more varied group of young people than the diverse group known as gifted children and adolescents. Not only do they come from every walk of life, every ethnic and socioeconomic group, and every nation, but they also exhibit an almost unlimited range of personal characteristics in temperament, risk-taking and conservatism, introversion and extraversion, reticence and flamboyance, and effort invested in reaching goals. No standard pattern of talent exists among gifted individuals" (Neihart et al., 2002).

"In open-ended questioning of teachers as to the characteristics of high-ability learners, cognitive traits were the most commonly named" (Alviderez & Weinstein, 1999; Busse et al., 1986; Endepohls-Ulpe & Ruf, 2005; Hunsaker, 1994). In fact, some research indicates "that there may be an interaction between gender and school subject ability in teacher nominations for gifted programs. For example, teachers in both the United States and West Germany rated ability in mathematics as the most important feature for boys and language ability as most important for girls" (Busse et al., 1986).

The null hypothesis of the independent variable of gender would not make a difference on the dependent variable of gifted was proven correct. Gender does not predict being gifted. You can be male or female since it is not a predictor of identification of academically gifted and talented.

Socioeconomic Status Research Question 3. Is a student's socioeconomic status a predictor of their identification as academically gifted and talented? Yes,

socioeconomic status of PAID lunch predicts identification of academically gifted and talented. While FREE lunch predicts that you will probably not be identified as academically gifted and talented. The SES of REDUCED lunch had no statistical significance of identified of academically gifted and talented.

The socioeconomic status also varies between groups. The gifted students had more paid lunch than free lunch. The total population had more free lunch than paid lunch. Both groups had the least students represented with reduced lunch. Paying for lunch was a predictor of gifted identification. While having free lunch was a predictor of not being identified as gifted.

"Controversy has reigned over the effectiveness of teachers in the nomination procedure for gifted students" (Gagné, 1994; Hoge & Cudmore, 1986; McBee, 2006; Pegnato & Birch, 1959; Pierce et al., 2007; Renzulli,1986a; Rohrer, 1995; Siegle et al., 2013; Speirs Neumeister et al., 2007). During the middle of the last century, Pegnato and Birch (1959) "challenged the idea that teachers could reliably identify gifted students. They reported that teachers were ineffective in identifying students with IQ scores above 130." This research, often cited as evidence to support Gagné (1994), "found that teachers were as effective as other methods of identification for gifted students." Although other researchers (Hodge & Kemp, 2006; Hoge & Cudmore, 1986; Rohrer, 1995) have also found that teachers were able to identify gifted and talented students, some research (Speirs Neumeister et al., 2007) has shown that even experienced teachers often hold a "narrow conception of giftedness" and are not aware "how culture and environmental factors may influence the expression of giftedness in minority and economically disadvantaged students" (p. 479).

The null hypothesis of the independent variable of SES (free, paid, or reduced

lunch) would not make a difference on the dependent variable of gifted identification was disproven. Paid lunch is a predictor. While free lunch is a predictor for not being identified as GT.

Recommendations for Practice, Policy, and Research

Uniformity in identification. "Research by Renzulli and Reis (1997) reiterated that the question of how to define giftedness has been debated for decades; and a single, unified definition does not and should not exist"; therefore, each state (SCDE, 2017) had their own criteria. According to Renzulli (1994), the use of "one size fits all curriculum" (p. 14) produces the same type of learning for all students which may be anti-individual and anti-multicultural. Renzulli and Reis (1997) "referred to this as "schoolhouse giftedness" (p. 8) with traits of good grades, high scores on standardized tests, and model classroom behavior." Uniformity in identification of academically gifted and talented students would be helpful rather than each state making their own regulations.

Brain development. Further research into brain development about age by month might provide insight as to why more students born in September and December followed by October and November are identified as gifted. "Barab and Plucker (2002) proposed an integrated model of giftedness in which talents, broadly defined, are developed through the interaction of the individual, environment, and sociocultural content. From their perspective, talent development is an ever-spiraling process, as continued interactions build on themselves over time and lead to greater opportunities to develop talent and greater success as a result. The primary implications are that solving real-world problems, within realistic contexts and with considerable support, should be the focus of talent development programs and that unless advanced learners have their talents fostered and remain challenged in K-12 schools, they will never develop their full

potential as creative, real-world problem solvers. The situated view is more popular outside of the field than within, which is not surprising given that many gifted education programs continue to use an "identify the bright student" intervention model, against which the situated approach explicitly argues."

Comprehensive review of gifted screening tools. A comprehensive review of gifted screening tools might provide identification of a broader range of socioeconomic status students and equality in gender. Margison (2008) pointed out "that students with ability levels in the top 15-20% grasp concepts quickly." Several studies have shown that when "performance-based assessments are used for identification purposes, the number of identified minority students increases dramatically" (VanTassel-Baska, 2007). Also, "when placed in programs for the gifted based on high ratings in authentic assessments, minority students fare well" (Borland & Wright, 1994; Clasen et al., 1994; Hafenstein & Tucker, 1994; Maker, 1992; Reid et al., 1999; Sarouphim, 2001). Instruments that are used to identify the gifted and talented can yield different results. "The Peer Referral Form has high reliability and validity in the screening of Hispanic populations" (Callahan, Hunsaker, Adams, Moore, & Bland, 1995). Are the current instruments free of bias? That could be a research topic for the future.

Social justice. The Social Justice Theory in education asks if the playing field for every child is level. "Do students have equal opportunities regardless of race, gender, or poverty level" (Robbins, 2014)? Do students living in poverty have a level playing field for identification in the academically gifted and talented programs? Hopefully, by using the NNAT, this allows use of an identification tool that allows students with diversity whether socioeconomic, gender, or age to qualify for services. More research could be conducted to find any additional instruments and assessments to assist with leveling the

playing field for identification."

All students need to be able to feel safe and comfortable in their learning environment. By feeling safe, students can grow and mature educationally for individual success. All stakeholders want students to be successful in schools.

The Social Justice Theory (Norzick, 1974) "looks at fairness and equality. How are things such as programs and housing distributed? Looking at the students who "have" and those who "have not" who are economically disadvantaged, is the "wealth" distributed evenly?"

Gifted and talented identification for a school system. "According to Belanger and Gagné (2006), stakeholders have a moral responsibility to be aware of these diverse issues with varying populations of gender, socioeconomic status, and age." "Being aware of these issues can provide safeguards to make sure the environment is inclusive of diversity. Schools might contribute to developing equalities and conditions for social justice, even if it is imperfectly realized," stated Rawls (1971, p. 73). "Another thought of improving social justice in education is how schools reproduce inequalities and social injustices through maldistribution and silencing" (Bourdieu & Passeron, 1977).

Determination of academically gifted and talented students has historically been defined by federal governments. In the United States, each individual state decides the criteria, while local school districts identify and serve to meet educational needs. Stakeholders are always interested in who qualifies.

The state of South Carolina's gifted and talented selection criteria is based on the theories of Bloom (1985) "which states that high-performing students should be challenged." Ability intelligence (IQ) tests (Terman, 1965) are the standard screening tool for initial placement into a GT program. "Many gifted students simply will go

unrecognized if the IQ test is the sole measure used for gifted determination" (Ford et al., 2002). "Now few screening instruments are available to complement the IQ test in providing a comprehensive picture of the student's abilities and potential (gifts). Three of the more popular teacher rating scales designed to identify gifted students are the SRBCSS (Renzulli et al., 1976), GATES (Gilliam et al., 1996), and GES-2 (McCarney & Anderson, 1989). Although the SRBCSS, GATES, and GES-2 have positive qualities, they also have technical shortcomings that limit their diagnostic usefulness. South Carolina uses none of these screening tools, only ability IQ and achievement scores (SCDE, 2005)." "Weaknesses in one or more of the scales include nonrepresentative standardization normative samples, low interrater reliability, and lack of evidence for diagnostic accuracy" (Jarosewich et al., 2002).

South Carolina statewide screening is with the CogAt and ITBS tests. These tests are given in late second grade for every student to begin identification of gifted and talented services. The CogAt is a group-administered test of ability. A student must score at or above the 93rd national age percentile on verbal/linguistic, quantitative/ mathematical, nonverbal, and/or a composite score. The ITBS is a group administered achievement test battery. A student must score at or above the 94th percentile in reading comprehension and/or math concepts/problem-solving or a score of advanced on the math or reading portion of state testing. Additional screening is given up to three times a year with the NWEA MAP test in math and reading. Another additional "screening test is the NNAT, which is an individually administered nonverbal ability test" (Naglieri, 2008). Yet another intellectual and academic performance test is the PTA for Grades 2-5 (SCDE, 2017).

Students are given multiple opportunities to be identified within the school system

in this study; however, due to the state PTA being given yearly with a slightly different version of the tool, students are learning to simply “take the test” which would result in the identification numbers growing. This might be an explanation why the numbers in this sample grew significantly in the sixth-grade year. If this sample population demonstrated social justice for all students, the gifted and talented population would include a larger number of free lunch participants and less paid lunch which would mimic the total population data. Further research and study is needed.

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Appendix A

South Carolina Department of Education GT Testing

Student Identification

The identification of gifted and talented students is a multi-step process which consists of screening and referral, assessment of eligibility, and placement. The objective of the grade 2 testing program is to evaluate each student for the purpose of placement into a district gifted and talented program.

Dimension A. In accordance with State Board Regulation 43-220, students must meet the criteria for two out of the three dimensions outlined in this law. Dimension A (Reasoning Abilities) requires students to demonstrate high aptitude (93rd national age percentile) in one or more of these areas: verbal/linguistic, quantitative/mathematical, nonverbal, and/or a composite of the three. Scores on the CogAT may be used for this purpose.

Dimension B. Dimension B (High Achievement in Reading and/or Mathematical Areas) of the regulation requires that students demonstrate high achievement in reading and/or mathematical areas (94th national percentile and above) as measured by a nationally normed or statewide assessment. Scores on the Iowa Assessments (IA) may be used for this purpose.

The results from the administration of the aptitude (CogAT) and achievement (IA) tests are entered into the Gifted Identification Forms and Tasks (GIFT) software program, which identifies students who automatically qualify for a gifted and talented program. GIFT also identifies those students who may benefit from a secondary screening using the Performance Task Assessments (Dimension C).

Dimension C. Dimension C (Intellectual/Academic Performance) requires students to demonstrate a high degree of interest in and commitment to academic and/or intellectual pursuits or demonstrate intellectual characteristics such as curiosity/inquiry, reflection, persistence/tenacity in the face of challenge and creative productive thinking. One of the methods by which these characteristics may be demonstrated is with a score of sixteen on either the verbal or nonverbal component of the Performance Task Assessments for grade 3 placement.

Information About the Tests

The following tests will be administered to all Grade 2 students:

CogAT	Level 8, Form 7
IA	Level 7, Form F

The following charts list the required sections for each test, the number of items on each section and an estimated time for administration. Districts may choose to administer any of the optional tests, but the optional tests must be administered after the required tests are complete.

Iowa Assessments™

Required Sections of each Test	Number of Items	Estimated Time
Reading: Picture Stories	11	10
Reading: Sentences	6	10
Reading: Stories	18	25
Reading Totals	35	45
Mathematics: Concepts	26	25
Mathematics: Problems	15	25
Mathematics Totals	41	50

A district may decide to administer additional tests included in the Iowa Assessments that are not required for the South Carolina Grade 2 Gifted and Talented Assessment Program. There is no extra charge for this service. The district simply administers the tests of interest, and the scores for these tests will be provided automatically. Districts that wish to receive a Total Reading score must also

administer the Vocabulary test, which is not required for the South Carolina Grade 2 assessment program.

Cognitive Abilities Test™(CogAT®)

The nine tests listed below need to be administered.

Required Sections of each Test	Number of Items	Estimated Time
Verbal Battery		
Picture Analogies	18	13
Sentence Completion	18	14
Picture Classification	18	13
Quantitative Battery		
Number Analogies	18	15
Number Puzzles	14	15
Number Series	18	15

Nonverbal Battery		
Figure Matrices	18	13
Paper Folding	16	11
Figure Classification	18	13

All of the CogAT tests are untimed. For screening into the gifted and talented program, a student must take all nine tests to receive all three scores: verbal, quantitative, and nonverbal.

All districts will be given the opportunity, at a discounted price, to provide the CogAT and Iowa Assessments to students in grades 3 through 8 across the state. Please contact Sue Rawls, your local Riverside Account Executive, at 704.620.8262, for more information.

SC Performance Tasks Assessments (PTA) Grades 2-5

What are South Carolina Performance Tasks?

As a part of the process to assist in the identification of students for participation in programs for the gifted and talented, the state has developed performance assessments that are available for administration. Scoring of the assessments as well as training in their administration is provided by the Office of Assessment through a contractor.

Students are identified by their school districts and must meet the criteria specified in Regulation 43-220.

When are South Carolina Performance Tasks administered?

- 2018 - February 20 - March 8

https://ed.sc.gov/tests/elementary/gifted-and-talented-program-grade-2/

Appendix B

Permission Request

November 4. 2017

To Whom It May Concern,

Greetings. I am working on my doctorate in curriculum and instruction and would like to use anonymous data from the [redacted] Database. Participants in this study will be anonymous, randomly selected students. No student name, identification number, or school will be used. The requested information includes grade, date of birth, gender, socioeconomic status, and academically gifted and talented qualification. The target number for inclusion in the study is 200+. The researcher will not have or use any identification of the students except a randomly assigned number.

This is a quantitative research project involving a Fit Binary Logistic Model (Minitab, 2017). Through this evaluation the researcher will determine if birth month, gender, or socioeconomic status is a predictor of gifted and talented classification.

May I use anonymous data from the [redacted] Database?

Thank you for your time,

Kancy Cleveland

Appendix C

Permission Granted

District [redacted]

December 6, 2017

Dr. Jim Palermo
School of Education
Gardner-Webb University
PO Box 7304
Boiling Springs, NC 28017

RE: Acknowledgement and Permission to Conduct Research Study

Dear Dr. Jim Palermo:

I am writing to acknowledge consent and grant permission for Kancy Cleveland, current Doctoral student at Gardner-Webb University, to conduct her research study at [redacted].

Please feel free to contact me with any questions or concerns.

Sincerely,

[redacted]
Superintendent
[redacted]