A COMPARISON OF TRADITIONAL AND ALTERNATIVE MEASURES OF "GIFTEDNESS" IN MINORITY ELEMENTARY SCHOOL CHILDREN

by

Gregory E. Donnis

A dissertation submitted in partial fulfillment of the

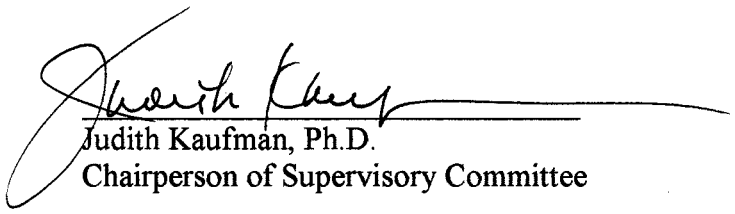
requirements for the degree of

Doctor of Psychology

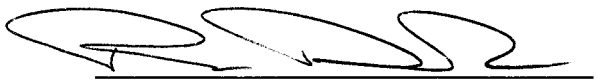
Fairleigh Dickinson University

2006

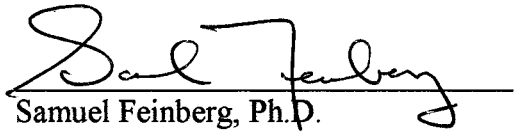
Approved by:



Judith Kaufman, Ph.D.
Chairperson of Supervisory Committee



Ron Dumont, Ed.D.



Samuel Feinberg, Ph.D.

College Authorized to Offer Degree:

University College: Arts • Sciences • Professional Studies

Date: April 25, 2006

UMI Number: 3206983

Copyright 2006 by
Donnis, Gregory E.

All rights reserved.

INFORMATION TO USERS

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleed-through, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

UMI®

UMI Microform 3206983
Copyright 2006 by ProQuest Information and Learning Company.
All rights reserved. This microform edition is protected against unauthorized copying under Title 17, United States Code.

ProQuest Information and Learning Company
300 North Zeeb Road
P.O. Box 1346
Ann Arbor, MI 48106-1346

Table of Contents

Review of Literature	1
Method	33
Results	40
Discussion	51
References	59
Appendix I	69
Appendix II	70
Appendix III	71

List of Tables

Table 1. Instrumentation Summary 36

Table 2. Percentage of Students Found Eligible for ETC by School Year 40

Table 3. Frequency Distribution for Ethnicity in the ETC and School Populations from 2002-2005 41

Table 4. Percentage of Different Ethnic Groups Identified as Eligible by SAI versus Rubric Method 42

Table 5. Relationships Between Rubric Components 44

Table 6. Significant and Nonsignificant Differences Between Mean TerraNova NCE Scores by Group 48

Abstract

The purpose of the present investigation was to compare traditional and alternative assessment of "giftedness" in predicting academic success of minority elementary school children. Educational data of 87 elementary students who were assessed for giftedness using a teacher created assessment system was analyzed to compare the traditional and alternative assessment of "giftedness" in predicting academic success. It was hypothesized that students accepted into the gifted program would not differ on measures of academic achievement based on their method of eligibility for the gifted program. When grouped by eligibility method, the students were found to differ in the area of mathematics but not in the areas of reading and language. The ethnic diversity, as well as the number of students admitted to the program, increased when student eligibility decisions were determined by the use of the alternative assessment. Weaknesses of the alternative assessment were discovered during this investigation and recommendations for improving the alternative assessment are provided.

Review of Literature

Intelligence has been studied by psychologists for more than 100 years. Over time, society and educational systems have placed a high value on intelligence quotients and test scores of all types. In our society, test scores function as gatekeepers because they measure qualities that we value in children and adults (Sternberg, 2000). Some people with very high intelligence test scores have organized themselves into groups or communities; the most well known is MENSA. The internet has many websites devoted to raising children who are gifted and how to improve scores on certain IQ tests. One website called "criticalthinking.com" sells books to improve scores on 40 tests of ability. Since intelligence testing can be used by psychologists to diagnose learning disabilities, and assess general cognitive abilities, most schools utilize intelligence testing to help determine eligibility for specialized services (Esthers & Ittenbach, 1997; Ford, 2005), including services for the gifted (Ford, 2005). While historically intelligence testing has been a valuable tool for assessing a child's unique needs and strengths and/or weaknesses, prominent researchers and test developers agree it should not be used in isolation to make educational decisions (Kaufman, Lichtenberger, & Naglieri, 1999; Kaufman, 1994; Wechsler, 1991). Past criticisms of intelligence testing centered on cultural bias but current debate focuses on the interpretation of IQ tests (Kaufman, Lichtenberger, & Naglieri, 1999) and some contend that test bias no longer exists (Jensen, 2000; Rushton & Rushton, 2003). Still others conclude that the meaning of intelligence and giftedness is rooted in one's culture and must be accounted for in any assessment (Gardner, 1993; Sternberg, 1993; 2000; 2004; 2005).

Definitions of Gifted

To understand the construct of giftedness, it is important to examine the evolution of the term in the United States. In 1869, Galton studied the nature of "men of genius" and set a precedent for conceptualizing giftedness as being related to genetics and high intelligence (Esquivel & Nahari, 2000). Terman, influenced by Galton's belief that giftedness was related to high intelligence, sought to measure giftedness through norm-based standardized intelligence testing (Esquivel & Nahari, 2000). In 1925, Terman initiated a longitudinal study of gifted children. The children were included in his study, and thus considered gifted, only if they achieved an IQ of 140 or higher (top 1%) on the Stanford-Binet Intelligence Scale (Esquivel & Nahari, 2000; Stephens & Karnes, 2000). Terman referred to those who did not achieve the cut off score of 140 as not gifted. In 1938, Thurstone studied twenty specific talents, or "primary abilities" related to giftedness, and challenged the ideas of Galton and Terman as he questioned whether a child's potential could be summarized by a single index score on a test (Esquivel & Nahari, 2000). Guilford broadened the attributes of giftedness in 1956 through his multifactor approach to intelligence known as his Structure of Intellect Model (Esquivel & Nahari, 2000). In this model Guilford stressed the many dimensions of human intelligence and proposed 120 possible high level abilities according to mental operation, thinking process, and the result of the process (Esquivel & Nahari, 2000). In 1962 Guilford expanded on his model by adding the divergent thinking process which he defined in terms of flexibility, fluency, originality, and elaboration (Esquivel & Nahari, 2000). In his view, the traditional method of assessing giftedness with an IQ score

excluded culturally and linguistically diverse children as they may not perform well on the normative measures of the time (Esquivel & Nahari, 2000).

In 1972, the U.S. Office of Education released a formal definition of giftedness that incorporated Guilford's multi-factor approach with Galton and Terman's criteria of high intellectual capacity. It also attempted to address Guilford's concern that tests of intelligence may not accurately assess the culturally diverse. This definition of giftedness created by the U.S. Office of Education included exceptional ability in one or more of the following areas: 1. High general intellectual ability, 2. Specific academic aptitude, 3. Creative or productive thinking, 4. Leadership ability, 5. Talents, 6. Kinesthetic or psychomotor ability, and 7. Disadvantaged potential (Esquivel & Nahari, 2000). The "disadvantaged potential" included women, people from rural areas, low socioeconomic status, or a diverse cultural background (Esquivel & Nahari, 2000). While this definition seems incredibly vague and open to wide interpretation, the use of the term "Disadvantaged Potential" is the most troublesome as it seems to suggest everyone but affluent whites are somehow "disadvantaged". This 1972 government definition added other attributes to the concept of giftedness beyond high intelligence and in 1978 the federal definition used the term 'gifted and talented' rather than 'gifted' (Stephens & Karnes, 2000).

One positive outgrowth of the 1972 definition was that it spawned more research into the importance that culture plays in understanding and defining giftedness (Esquivel & Nahari, 2000). Some of the early research into the qualities of gifted minorities yielded such broad and unwieldy definitions that almost the entire U.S. population could

be considered gifted. For example, Torrance's study of gifted disadvantaged African Americans in 1969 yielded a list of "creative positives" that can be found in most culturally diverse gifted children (as cited in Esquivel & Nahari, 2000). These "creative positives" include the ability to express emotions and feelings, improvise, and articulate oneself in creative role playing and dance, and use of rich imagery in language. Figural flexibility, humor, originality and, kinesthetic and emotional responsiveness are also recognized as creative positives (as cited in Esquivel & Nahari, 2000).

Research has also focused on differences between cultural values and what each culture identifies as the behavior of a gifted child, in particular the idea of individualism versus collectivism. Cantonese-Chinese immigrant families raise their children with a great sense of responsibility to the family and they downplay individual liberty (Wong & Wong, 1989) that is often promoted in the United States. Overall, Asian and Pacific Island students value collaboration over individual competition that is often encouraged in school in the United States (Lopez, 2000). In a survey of cultures around the world by Triandis (1972) the United States was found to be the most individualistic culture studied (as cited in Sternberg, 2000). Most African, Asian, and Hispanic cultures tend to be collectivistic and the value placed on individual achievement may vary considerably across cultures (Sternberg, 2000). In general, individual speed is valued as a component of intelligence in the United States but many other cultures and sub-cultures in the United States de-emphasize speed in preference for deep thinking (Sternberg, 2000). American schools tend to value verbal abilities over non-verbal abilities despite the importance of non-verbal communication in American and other societies (Sternberg, 2000). Thus,

sensitivity to these cultural influences on individual behaviors is essential to the identification of the gifted student (Lopez, 2000).

American culture also differs from other cultures by how it believes a person "becomes" gifted. Early American research by Terman and Galton may be responsible for the American belief that giftedness is largely an inherited quality (Esquivel & Nahari, 2000). While Americans have traditionally viewed giftedness and intelligence from a genetic perspective they are beginning to debate the impact of the environment on intelligence (Ford, 2003). In contrast to the genetic perspective, East Asians, who subscribe to Confucian beliefs, stress an environmental view of human development and thus place an emphasis on access to reading materials and instruction in the development of giftedness (Ford, 2003). Thus, Japanese and Chinese culture stresses that performance rests on the types and quality of educational experience provided by schools (Ford, 2003). It can be concluded that in Japanese and Chinese culture a child is believed to acquire giftedness from education and in American culture it is believed that a child acquires giftedness from genetics.

State definitions of gifted and talented children are in constant evolution, in part due to the continual change in the definition at the federal level (Stephens & Karnes, 2000). Since 1972, the federal definition of gifted has changed four times and 29 states have modified their definitions since 1990 (Stephens & Karnes, 2000). The interpretation of the federal definition can vary considerably from state to state. For example, the State of New York developed a definition of giftedness in 1982. The published policy stated:

> **Chapter 740 of the Laws of 1982 defines gifted pupils as "pupils who show** evidence of high performances, capability, and exceptional potential in areas such as general intellectual ability, special academic aptitude, or outstanding ability in visual and performing arts. Such definition shall include those pupils who require **educational programs or services beyond those normally provided by the regular** school program in order to realize their full potential.
>
> This broad definition is the foundation on which identification of gifted students in New York State rests. A school district's philosophy of gifted education, **identification practices, and program should be consistent with the State** definition.
>
> The definition allows districts a great deal of latitude. For example, use of the phrase, "such as," indicates that giftedness can extend to areas other than "general **intellectual ability, special academic aptitude, and outstanding ability in the visual** and performing arts." In addition, the definition permits each district to determine the kinds of data to be used and procedures to be followed in identifying gifted students." (New York State Department of Education).

New York maintained a definition that clearly left the operational definition to the individual district without specific criteria or minimum test scores. This placed the burden of defining and using a culturally sensitive assessment on the individual district. Under this definition of giftedness, differences in assessment methods and operational definitions between districts in New York could result in a child being gifted in one district and not gifted in another.

Similar to the State of New York, the State of Georgia created a theoretical definition, but the operational definitions by which gifted students are identified vary within the state (Cramond, 2004). The state defines a gifted child as, "a student who demonstrates a high degree of intellectual and/or creative ability(ies), exhibits an exceptionally high degree of motivation, and/or excels in specific academic fields, and who needs special instruction and/or special ancillary services to achieve at levels

commensurate with his or her abilities" (State Board of Education Rule, 160-4-2-.38, p.1).

Unlike the State of New York's 1982 definition, the State of Georgia defines four categories for assessment in addition to specific criteria for what constitutes the performance of a gifted student. The four criteria include mental ability, achievement, creativity, and motivation to be assessed with standardized tests of mental ability and achievement indicated by the state. Georgia also sets the performance standards that must be achieved in each category for a student to become eligible for gifted education services. Once a student has been assessed in all four categories, there are two ways eligibility can be determined. The student can qualify on the merit of their psychometric testing alone and the state sets the criteria (i.e., a child in grades 3-12 must achieve a Full Scale or composite IQ at the 96th percentile or higher and achieve at the 90th percentile on a Reading, Math, or total achievement composite). If the student does not meet the psychometric criteria then a second approach called "multiple criteria" can be used (Georgia State Board of Education Rule, 160-4-2-.38, p. 1).

In this approach the student meets the eligibility criteria in the same areas (mental ability, academic achievement, creativity, and motivation) but the student can qualify based on a test performance, grades, checklists, and other products rather than just standardized tests of mental ability and achievement. (State Board of Education Rule, 160-4-2-.38, p.1). Thus the state has created a uniform definition that is flexible enough to allow individual districts to operationalize their definition based on the diversity of the student body (Cramond, 2004).

Theories of intelligence from Sternberg (1993) and Gardner (1993) incorporated the role that culture plays in the development of abilities creating a more comprehensive definition of intelligence and the nature of giftedness. Sternberg's theory focuses on the interplay of abilities, the value of the ability in everyday life, and in the society in which the person lives (Sternberg, 1993).

Sternberg, in his "Pentagonal Implicit Theory of Giftedness" (1993) suggested that a gifted person is one who is superior in some domain to his/her peers and that domain is valued by his/or her culture. Sternberg proposes 5 criteria that must be met for a person to be considered gifted in any domain. The excellence criterion states the individual is superior in some domain to his peers. The rarity criterion states the individual's high level of an attribute is rare compared to peers. The third criterion is that of productivity. In other words, their superior abilities in these areas lead to, or have potential, to lead to production. The demonstration criterion notes that the person must be able to demonstrate his/her superior ability in this area on one or more valid measurements of the ability. The fifth criterion states that the individual must show superior abilities that are valued for that person by his/her society to be deemed gifted (Sternberg 1993).

Gardner's view of intelligence and giftedness consists of the capacity to solve problems and reason in a more naturalist environment. This differs from the more traditional model of gifted assessment that consists of testing a child on isolated tasks in a setting that may be unnatural to the child, such as an office (Gardner, 1993). Gardner identified seven distinct intelligences that correspond to particular areas of giftedness. "Linguistic intelligence" reflects the capacity to think in words and use them effectively

in writing and speaking. "Logical or mathematical intelligence" includes the ability to effectively use numbers, categorize, classify, and calculate. "Visual and spatial intelligence" involves the ability to perceive objects, spatial ideas, and appropriately orientate oneself in a spatial matrix. "Musical intelligence" includes the abilities to discriminate, transform, and create music. "Bodily kinesthetic intelligence" includes the ability to create things with the hands or use the body to express oneself. "Interpersonal intelligence" involves sensitivity to other peoples' moods, feelings, or motivations. "Intrapersonal intelligence" includes the ability to monitor and manage ones range of emotions and behavior (Gardner, 1993).

Gardner's and Sternberg's theories of giftedness not only require high abilities in one or more areas/domains, but also stress how these abilities interact as a system and how the abilities are used by the individual. Similar to Sternberg, Gardner indicates that these abilities are culturally valued activities and are further developed by environmental conditions and demands. Gardner (1993) offers a good example of this idea:

> Think, for example, of sailors in the South Seas, who find their way around hundreds, or even thousands, of islands by looking at the constellations of stars in the sky, feeling the way a boat passes over the water, and noticing a few scattered landmarks. A word for intelligence in this society would probably refer to that kind of navigational ability (p. 7)

Giftedness is a social construct (Ford, 2003; Gardner, 1993; Sternberg 1993). What one culture values as giftedness may not be valued as the same by another culture (Ford, 2003). American culture and school systems value cognitive and academic ability over spatial, musical, and interpersonal abilities (Gardner 1993). Within academic subjects, Americans tend to value reading, mathematics and sciences above social

studies, music, art, and physical education (Ford, 2003). Other cultures place more value on non-academic talents. For example, in 1974, Bernal investigated the construct of giftedness as viewed by Mexican-Americans. Bernal found that Mexican-Americans believe a gifted person is mature for their age, a great imitator of adult behavior, and a great leader. A gifted person is also viewed as one who can make suggestions valued by peers, maintain meaningful interactions with adults, and acquire an understanding of the English language. Talents with musical arts are also highly valued in the Mexican-American society (Esquivel & Nahari, 2000).

The National Association for Gifted Children (NAGC) defines giftedness as "showing, or showing the potential for showing, an exceptional level of performance in one or more areas of expression." (NAGC, 2004). The NAGC recognizes 10 basic attributes or "TABS" (Talents, Abilities, and Behaviors) of the giftedness construct including: 1. Intense interest in an area, 2. Strong desire to learn, 3. Understanding or use of humor, 4. Effective and/or inventive problem solving abilities, 5. Inquisitive nature, 6. A large "storehouse" of information, 7. Ability to quickly grasp new concepts and integrate information, 8. Many creative ideas, 9. Applies logic approaches to problem solve, and 10. Highly expressive communication abilities (Frasier et al., 1995).

The most recent federal definition for gifted which is found in The *No Child Left Behind Act* (NCLB). The NCLB states:

> The term 'gifted and talented', when used with respect to students, children, or youth, means students, children, or youth who give evidence of high achievement **capability in areas such as intellectual, creative, artistic, or leadership capacity,** or in specific academic fields, and who need services or activities not ordinarily provided by the school in order to fully develop those capabilities. (NCLB, 2002) (p. 544)

Despite the efforts of researchers and government to define "giftedness", no single definition exists for the construct of giftedness or the qualities possessed by a person deemed "gifted" (Cramond, 2004; Ford, 2003; Stephens & Karnes 2000). Since many researchers agree that giftedness is a social and cultural construct (Ford, 2003; Gardner, 1993; Sternberg 1993; 2005), then one would naturally assume that many definitions of giftedness should exist. Each state, and/or school district, in the United States could be viewed as having its own unique social and cultural characteristics that would create the need for a definition of giftedness that incorporates and recognizes these unique social and cultural characteristics.

The dissatisfaction with current definitions and measurements has resulted in further research and re-conceptualization of the nature of human intelligence (Cramond, 2004). "So many conceptions of ability, giftedness, and intelligence exist that one might conclude that giftedness, whatever it is, is shaped by social and cultural values, and beliefs, as well as politics." (Ford, 2003 p.146).

Traditional Methods of Identifying Giftedness

While many definitions of giftedness include unusually high performance in several areas, most assessments for the gifted include the use of intelligence testing (Ford, 2005; Wechsler 1991, p. 9). A popular intelligence test used by schools is the Wechsler Intelligence Scale for Children, Third Edition (WISC-III; Wechsler, 1991). Wechsler refers to the definition for giftedness in the WISC-III manual (p. 9) and recognized that the definition of giftedness will vary from setting to setting and from one

program to another. He also recognized that evaluators of the potential for giftedness should "design different assessment procedures for different situations" (Wechsler, 1991 p. 9) thus implying the need for multidimensional and individualized assessment.

Sternberg (2000) suggests that test scores are used as gatekeepers in our society, but some researchers question the sensitivity of IQ tests to detect subtle differences of ability within the gifted population (Detterman, 1993; Osborn, 2005). States including Florida, Tennessee, New Mexico, Hawaii, Oklahoma, and Connecticut designate what constitutes a "gifted score" (Stephens & Karnes, 2000) and other states like New York are more flexible and allow the local district to decide. In 1925 Terman set his IQ cut off score for giftedness at 140, but what is considered "unusually high" today varies. Pennsylvania is the only state that specifies a minimum IQ score (130) (Stephens & Karnes, 2000). Table 2.8 of the WISC-III (1991) manual qualitatively describes the IQ ranges as intellectually deficient, borderline, low average, average, high average, superior, and very superior. The term "gifted" is not used by Wechsler to describe IQ scores. Wechsler indicates an evaluation for giftedness must include assessments in other skills and talents (Wechsler, 1991, p. 9) and therefore intellectual ability is only one aspect of giftedness according to Wechsler.

According to the National Association for Gifted Children (NAGC) approximately 5% of the general population meets the criteria of gifted (2004). According to the theoretical normal curve distribution described by Wechsler, 8.9% of the population would fall in the "superior" to "very superior" ranges (120 and above). To create a "cut-off" score that includes the top 5% of the population, the score would likely be in the mid 120's since an IQ at the 95th percentile corresponds to an IQ of 125

(Wechsler, 1991, p. 254). Nevertheless, the ceilings (highest scores obtainable) of the Wechsler test limit its ability to detect subtle differences between people scoring two or more standard deviations above the mean (i.e., 130 and above) (Osborn, 2005). In other words, since so few people in the WISC-III standardization sample scored above a 130 (98^{th} percentile) there are less people in that range to be used as a basis of comparison.

Each gifted child has different educational needs that should be addressed through a complete understanding of their intellectual level and area of talent (Osborn, 2005). "The concept of different levels of intellectual ability with attendant differences in cognitive, affective and emotional functioning is basic to understanding gifted children." (Osborn, 2005 p. 2) Today's intelligence tests are devised to discriminate differences in abilities between people in the normal sample and lack the ability to isolate differences between people at the extreme ends of ability (Detterman, 1993). The effect of ceilings (which limits the child's ability to demonstrate their intellect to the most difficult test items when the child could perform at a higher level) and limited descriptions of IQ ranges creates another obstacle for psychologists who use IQ tests as part of their assessment (Osborn, 2005). The Hollingworth Center for Highly Gifted Children has attempted to improve the description of IQ ranges and suggested the following criteria be used to describe ranges of giftedness: Mildly gifted (IQ range 115 to 129); Moderately Gifted (IQ range 130 to 144); Highly Gifted (IQ range 145 to 159); Exceptionally Gifted (IQ range 160 and up) (Hollingsworth Center Newsletter, 1991). The Hollingsworth Center of Highly Gifted Children seems to have created descriptions of giftedness based solely on an IQ score. If an IQ of 115 (84^{th} percentile) is considered mildly gifted then

approximately 16% of the population is gifted, which is quite different than the suggested prevalence (5%) suggested by the NAGC (2004).

Another criticism leveled against current intelligence testing is bias and cultural unfairness (Ford, 2005; Kornhaber, 1999). A test is considered biased if it systematically under or over estimates skills or abilities for a given group (Sternberg, 2000). If this definition is accepted, most tests are free from bias (Sternberg, 2000). For example, one study by Weiss, Prifitera, and Roid (1993) found the Full Scale IQ of the WISC-III an equal predictor of academic achievement for Caucasian, African-American, and Hispanic children (as cited in Kaufman, 1994). However, tests of academic achievement may share the same bias as the test of intelligence (Sternberg, 2000). In addition, many children's strengths, such as creative and practical abilities, lie outside the abilities tested by the WISC-III and most other intelligence tests (Sternberg, 2000). While intelligence tests measure the same qualities across groups, the emphasis placed on the development and assessment of these particular abilities varies by culture (Sternberg, 2000). The source of potential unfairness in the assessment of intelligence is test users who overvalue global IQ measures for educational decisions and do not incorporate tests of abilities that lie outside traditional measures (Kaufman, 1994).

Test developers have gone to great lengths to eliminate cultural bias or the culturally loaded aspects of their product (Johnsen, 2004). Rushton and Rushton (2003) believe that bias in the standardized testing of ability no longer exists. They believe that brain size variation is responsible for Herrnstein and Murray (1994) finding that African-Americans having an average IQ score of 85, Caucasians 100, and East Asian 106. However, recent research contends that race is a social construct, and studies of race and

other constructs may serve social ends but cannot serve scientific ends (Sternberg, Grigorenko, & Kidd, 2005). Still others assert that a test can never be culturally neutral because they are developed by people and therefore reflect the culture of the test developer (American Educational Research Association, American Psychological Association, and National Council on Measurement in Education, 1999; Sternberg, 2000). While the controversy about the origin of test bias may continue for years to come, the position adopted by the American Psychological Association is the most widely accepted (American Educational Research Association, American Psychological Association, and National Council on Measurement in Education, 1999; Sternberg, 2000).

The over-reliance on standardized test scores for the assessment of the gifted may result in some gifted individuals being overlooked due to low estimates of ability (Hadaway & Marek-Schroer, 1992; Sternberg, 2000). Abilities assessed by standardized tests may not be the same as those valued by the child's culture and upbringing (Hadaway & Marek-Schroer, 1992; Kaufman, 1994; Sternberg, 2000). Literature and government research consistently indicates that students from minority backgrounds are disproportionately underrepresented in programs for gifted students (Ford, 1995, 2005; Hadaway & Marek-Schroer, 1992; Lidz & Macrine, 2001; Lopez, 2000; U.S. Department of Education, 2003). It has been estimated that minorities were underrepresented in 30-70 percent of gifted programs in the United States (Hadaway & Marek-Schroer, 1992). Ford (1995) asserts that gifted programs are "the most segregated educational programs in the United States" (p. 52). The over-reliance on standardized intelligence testing for identifying the gifted child has contributed to the under representation of minorities in

programs intended to enrich or provide alternative education for the gifted (Hadaway & Marek-Schroer, 1992). For some students from bilingual or Limited English Proficiency (LEP) homes, the validity of the test is also questionable as it becomes more a measure of the child's knowledge of the English language rather than intelligence or academic skills (Armour-Thomas, 1992). Despite the risks of under identification of gifted students from minority backgrounds inherent with using the traditional method for identification, reliance on traditional standardized testing procedures remains the norm (Aderholt-Elliot, Algozzine, Algozzine, & Haney, 1991; Ford, 2005; Stephens & Karnes, 2000). Only 24 states mention "non-discriminatory testing" in their gifted education policies and three states (Arizona, Oregon, and Ohio) use one score to determine eligibility for gifted education programs (Council of State Directors of Program for the Gifted and National Association for Gifted Children, 2003).

In an attempt to address limited English proficiency or the cultural diversity of a child in their assessment, some psychologists may choose to utilize tests of cognitive and academic skills that are translated and published outside the United States, which may create more problems than it solves. Unfortunately, these tests may include vocabulary that does not reflect the experience of linguistically and culturally diverse children since they live in the United States (Lopez, 2000). In addition, tests from other countries include a normative sample that is not representative of these children in the United States.

In the traditional method of assessing giftedness, teachers are often asked to nominate students who they believe display the characteristics of being gifted (Powell & Siegle, 2000). In 1959, Pegnato and Birch concluded that teachers are unable to

effectively or efficiently screen for the gifted and talented (as cited in Powell & Siegle, 2000). They argued that teachers are more likely to select compliant students over more challenging students who may have greater potential (as cited in Kornhaber, 1999). Some speculate that teachers may not refer children from diverse backgrounds because their behaviors may differ from the mainstream expectation of a gifted child (Kornhaber, 1999; Lopez, 2000). For example, some cultures may value collaboration over competition and these students may not be nominated for the formal assessment since they are overlooked (Lopez, 2000). As a result, teachers refer more or less disproportionate numbers of African-Americans, Native Americans, and Hispanic children to programs for the gifted (Ford, 1995; Frasier, Garcia, & Passow 1995; Frasier & Passow, 1994). Rohrer (1995) found evidence that contradicted Pegnato and Birch's assertion that teachers were unable to screen students for giftedness. Rohrer suggests that while teacher's preconceived notions of giftedness may preclude some children from being identified, teachers were able to identify gifted students regardless of ethnicity or classroom behavioral adjustment (Rohrer, 1995). In addition, many teachers are trained to initially diagnose and remediate learning problems rather than assess for giftedness (Frasier, Garcia, & Passow 1995; Powell & Siegle, 2000). Considering this style of training, it is feasible that teachers may be more focused on looking for reasons that disqualify the child from the program rather than discovering reasons why the child qualifies. Teachers need more training to identify the gifted of the majority and minority cultures (Frasier, Garcia, & Passow 1995; Powell & Siegle, 2000).

In some cases, parents have provided useful information in the identification process (Hadaway & Marek-Schroer, 1992). However, many parents lack knowledge

about the assessment procedures and special programs available (Woods & Achey, 1990). In addition, the involvement of the parents can be influenced by parental modesty, language barriers, and mistrust. (Hadaway & Marek-Schroer, 1992).

Another tool used in the traditional method of identification of giftedness is checklists. While some hold promise; notably the *Gifted and Talented Evaluation Scales* (GATES; Gilliam, Carpenter, & Christensen, 1996), *Scales for Rating the Behavioral Characteristics of Superior Students* (Renzulli et al., 1976) and the very popular *Group Inventory for Finding Creative Talent* (Rimm & Davis, 1976), many scales hold such a narrow view of giftedness that no child could be considered gifted (Hadaway & Marek-Schroer, 1992; Powell & Siegle, 2000). Alternatively, some checklists are so broad in their criteria for giftedness that they lack the ability to discriminate between the average achieving student and the gifted (Hadaway & Marek-Schroer, 1992). Thus, it appears that some of the problems with checklists for giftedness may be rooted in the variable definitions and criteria for giftedness.

Another criticism of the traditional method of gifted identification is that the traditional method supports a definition of giftedness that is too narrow through the use of a limited range of instruments (Hadaway & Marek-Schroer, 1992). In 1991, a survey of directors of programs for the gifted was conducted to assess the nature of the definitions that they used. Fifty-eight percent of the directors used a definition that included productive thinking, leadership, performing arts, and psychomotor ability in conjunction with the more traditional assessment of cognitive abilities (Aderholt-Elliot et. al., 1991). Creativity, which has long been associated with giftedness, is also conspicuously absent from many definitions used to select children for programs (Lopez, 2000). As creativity

is only moderately correlated with intelligence, highly intelligent children may not demonstrate creativity to the same level (Esquivel & Lopez, 1988). Therefore, the programs seeking only students with high cognitive and academic abilities are missing a subset of the gifted population who are very creative but lack the test scores on measures of cognitive ability to qualify as gifted (Lopez, 2000). Assessments of creativity may be overlooked when states and local school districts decide how to assess and define giftedness because the inclusion of measurements of creativity creates an additional problem due to the inconsistent relationship between measurements of creativity and actual creative accomplishments (Renzulli, 2002).

The need to go beyond the traditional methods of assessment of giftedness and use better assessment procedures is clear. The traditional methods lead to an under-representation of minorities in gifted education programming (Kornhaber, 1999; Lopez, 2000). As demographics in the United States continue to change, the need for psychologists and educators to improve their assessment of the nation's children increases. An estimated 42% of the school age population in the year 2000 was comprised of students whose first language differs from English. The Census Bureau projects that the US population will grow from 275 million in the year 2000 to 383 million by 2050 (Reyes-Carrasquillo, 2000). Consequently, by 2050 the terms "minority" and "majority" will become antiquated with respect to discussion of subgroups of the United States population (Reyes-Carrasquillo, 2000). The Caucasian population is projected to decrease to 50% of the US population by 2050 due to changing birth rates and immigration patterns. The remainder of the population will be comprised of 16% African-American, 21% Hispanic, 11% Asian, and 1% Native American (Reyes-

Carrasquillo, 2000). While these over-simplified groupings of Americans barely describe the diverse cultures within each group, they highlight the increasing need to develop new assessment procedures for giftedness and the need to recognize the unique manifestations of giftedness within each culture.

The NAGC suggests that 5% of the overall population is gifted. This is a common assumption based on the distribution of IQ scores in the general population known as the "normal curve" (Renzulli, 2004). One significant pitfall to this assumption is the incorrect assumption that IQ and giftedness are one in the same (Renzulli, 2004). IQ is only one aspect of giftedness (Frasier, et al, 1995; NAGC, 2004; NCLB, 2002, p.544; Renzulli, 2002; Sternberg, 1993). A second pitfall to the 5% assumption is that the gifted become viewed as a fixed population that will always be present and selected for specialized services (Renzulli, 2004). This second pitfall effectively limits the number of children allowed into programs for the gifted, and may consequently deny special programs to gifted children (Renzulli, 2004).

Educators and psychologists need to identify the gifted in all populations and provide these students with every opportunity to excel to their fullest potential. Assessments that rely solely on standardized measures not only limit access to programs for the gifted but also limit the access of culturally and linguistically diverse students to career opportunities (Reyes-Carrasquillo, 2000). In one thirteen-year study that followed students from Kindergarten through high school, the top 9% (assessments not specified) of each major ethnic group (White, Black, Hispanic, and "other") were deemed "gifted". The identified students were randomly assigned to a gifted program treatment condition or a "no special treatment condition" in Kindergarten and received this condition through

graduation. After thirteen years, minority and non-minority students in the gifted program had the same college attendance rate, while 45% of the gifted minority students who received the "no special treatment condition" dropped out of school, highlighting the impact of participation in gifted programs for the individual students and society as a whole (Smith, LeRose, & Clasen, 1991).

The Future: Ideal Qualities and Standards

Many of the promising procedures for improving the identification of the gifted are directly related to the weaknesses of the traditional method. One procedure calls for programs to adopt a broader definition of intelligence that also incorporates culture (Ford, 2003; Lopez, 2000) and for schools to evaluate their policies for any aspect that may hinder the participation of minorities in their gifted program (Ford, 2003).

The use of a variety of assessment tools will also improve the identification of gifted minority students (Armor-Thomas, 1992; Callahan, Hunsaker, Adams, Moore, & Bland, 1995; Ford, 2003; Kaufman, 1994; Lopez, 2000). One must take into account the norms, reliability, validity, standards for administration, and possible sources of bias when choosing instruments (Lopez, 2000). In addition, the testing of limits is recommended when using standardized formal measures (Sattler, 1992). Additional demonstration, time extensions, and changes in presentation or response modalities are examples of appropriate tests of limits (Lopez, 2000). All testing results need to be interpreted within the context of linguistic and cultural backgrounds to avoid bias (Kaufman, 1994; Lopez, 2000; Sternberg, 2004). Non-verbal measures such as The Leiter International Performance Scale-Revised (Leiter-R; Roid & Miller 1997), The

Universal Non-Verbal Intelligence Test (UNIT; McCallum & Braken, 1997) and The Test of Non-Verbal Intelligence 3 (TONI-3; Brown, Sherbenou, & Johnson, 1997) are recommended for children coming from a home where English is not the primary language (Lopez, 2000). The Torrance's Tests of Creative Thinking (Torrance, 1974) also has a non-verbal version for early elementary students (Lopez, 2000). Other informal measures are observation scales, checklists, inventories, product judgments, portfolio assessments, interviews, recordings of performances or presentations, and case studies (Lopez, 2000). Ideally the assessment should take place in a natural setting for the child, such as his/her classroom or their home environment, and observations should take place in multiple settings with multiple school personnel (Lopez, 2000).

Programs using flexible identification criteria have been able to identify linguistically and culturally diverse gifted children with special talents in one or more areas (Lopez, 2000). Flexibly incorporating information from standardized intelligence testing, standardized academic testing, observation, nominations, and student products allows students to be identified based on their own unique strengths and allows the examiner to utilize tests that will highlight these strengths (Lopez, 2000). A high score on a test of intelligence should warrant consideration for program participation, but a "lower score" should not rule out the possibility of giftedness (Hadaway & Marek-Schroer, 1992). Hadaway and Marek-Schroer do not offer a suggested range for a "lower score".

If a culturally diverse child is suspected of being gifted, language skills should be assessed (Lopez, 2000). Gifted children often demonstrate strength in their language skills and gifted ESL children will show rapid growth in their acquisition of English

(Lopez, 2000). Knowledge of a child's language proficiency will also help determine the language of assessment, possible alternative measures, and the language of instruction (Lopez, 2000).

Assessment and teaching personnel need to be trained in identifying gifted children from diverse backgrounds (Ford, 2003). This will improve the screening, nominating, and assessment procedures in schools (Armour-Thomas, 1992; Lopez, 2000). In one study, training teachers about instruments used to identify the gifted, to understand the effect of culture on behavior, and increasing their familiarity with the cultures of their students, significantly improved the referral rate of African-American, Native American, Hispanic, and Asian children to gifted programs (Woods & Achey, 1990).

Encouraging referrals from multiple sources and referrals of preschool children helps the parents become more involved in the process and provides the school with an idea of what the child's culture values (Lopez, 2000). In addition, parents should be involved in the referral process using interpreters, if necessary, and school staff that are representative of the child's culture. Communication to parents regarding the gifted programs curriculum, identification procedures, and instruments need to be early, consistent, and ongoing (Ford, 2003). This also serves to improve home-school connections and knowledge of cultural views on intelligence (Lopez, 2000).

Collaboration and consultation across programs and specialists helps to improve identification practices (Lopez, 2000). Collaborative efforts between the ESL department, psychologists, teachers, administrators, and educators of the gifted will

improve identification and teaching practices. In addition, programs for the gifted must engage in reflective and critical self-evaluations (Ford, 2003).

Some promising methods of identifying the gifted have incorporated research into developing a full assessment program (i.e., DISCOVER, The Problem Solving Assessment) (Kornhaber, 1999). DISCOVER is a method of assessment for the gifted developed at the University of Arizona at Tucson (Kornhaber, 1999). The method is aligned with Gardner's theory of multiple intelligences (Sarouphim, 2004). DISCOVER presents students with problems to solve in an economical, efficient, and effective manner. The test is comprised of spatial, logical-mathematical, and linguistic tasks. Intrapersonal, interpersonal, and body-kinesthetic talents are noted by observers (Sarouphim, 1999). Research has shown this assessment process to not only be valid and reliable (Sarouphim, 1999, 2001), but also a promising tool for identifying gifted minority students (Sarouphim, 2004).

It has been suggested that use of the DISCOVER assessment can help reduce under-representation of minority students in gifted programs but it may over identify students as gifted. In one study of Hispanic and Native American ninth graders, 29.3% were identified as gifted by the DISCOVER assessment process (Sarouphim, 2002) which is much higher than the predicted 5% of the population (NAGC, 2004). Criticisms of DISCOVER pertain to lack of consistent and equal training for all evaluators and unclear scoring procedures. While reliability between observers has been demonstrated, inconsistent training and experience led to observer variability in the field (Kornhaber, 1999).

The Problem Solving Assessment (PSA) is an outgrowth of the DISCOVER program and was developed by educators of the gifted in public schools in Charlotte-Merklenburg, North Carolina (Kornhaber, 1999). PSA has two phases. The pre-assessment phase consists of teachers of the gifted giving a lesson to the whole classroom. While the children perform tasks, the teachers observe the children and complete checklists. The second phase evaluates logical-mathematical, linguistic, and spatial intelligences with nine activities over three days (Kornhaber, 1999). One study concluded that the use of PSA in one district resulted in placement of 19% of the African-American students, while traditional methods had identified only 7% of the population (Reid, Udall, Romanoff, Algozzine, 1999). This assessment process also identified many more children as gifted than would be predicted using the 5% of the population prevalence rate (NAGC, 2004). Other criticisms of PSA include unclear scoring procedures and a lack of being "intelligence fair" as success on many tasks were dependent on language reasoning (Kornhaber, 1999).

Other researchers feel supplemental portfolio procedures will make vast improvements when used to supplement a school's current process (Hadaway & Marek-Schroer, 1992). A portfolio can be summarized as a purposeful collection of student's work that reflects his/her ability to produce, perceive and reflect. The portfolio can comprise of material intended or not intended for teacher inspection. When used in conjunction with traditional standardized testing, they allow a sampling of what the student is capable of on a day to day basis that may not be measurable through traditional measures (Hadaway & Marek-Schroer, 1992). Some examples of student work often included in a portfolio include, writing, journals, artwork, projects, class discussions, free

time use, and home samples. While portfolio assessment adds another dimension of the child's work to the assessment, portfolio measures have been criticized on many fronts. First, there is a lack of standardization on what work is included in the portfolio. Second, some allow the student to select work samples for the portfolio while for others the teacher is the single authority on its composition. Thirdly, portfolios are notoriously time consuming to create and later evaluate. Finally, the evaluation criteria used by raters varies considerably, creating poor inter-rater reliability unless considerable training and guidelines are provided (Hadaway & Marek-Schroer, 1992).

The use of process orientated assessment procedures will better tap the potential of children from limited English or minority culture background (Lidz & Macrine, 2001; Lopez, 2000). Dynamic Assessment (DA) allows children to demonstrate their cognitive potential through tasks that are more related to classroom experiences (Lidz & Macrine, 2001; Lopez, 2000). DA uses existing tests with varying additional procedures to assess learning potential using a pre-test/teaching/post-test format (Lidz & Macrine, 2001; Lopez, 2000; Matthews, 2002). This process holds promise as a means to identify bilingual immigrant children who could benefit from gifted program placement but did not meet the criteria based on tradition measures and criteria (Matthews, 2002). The key component of the DA process is the active intervention by the assessor to help the student understand the basic principles of a strategic task solution (Lidz & Macrine, 2001). Through observation and post-test scores, the assessor is able to determine the degree to which the child benefits from instruction (Lidz & Macrine, 2001). In 1978, Vygotsky had suggested that a child's ability to profit from guided instruction could serve as a measure of the child's zone of proximal development or the difference between their

developed abilities and latent capacities (as cited in Sternberg, 2004). Thus, dynamic testing measures the process of learning in context, while traditional measures assess the same process as a product of past learning and is thus very important when not all children had the same opportunity to learn in the past (Sternberg, 2004).

Lidz and Macrine (2001) used a DA procedure with the Naglieri Nonverbal Abilities Test (NNAT; Naglieri, 1997) along with other assessment and screening procedures, including rating scales, questionnaires, standardized group academic testing, and the mental processing subtests of the Kaufman Assessment Battery for Children (K-ABC; Kaufman & Kaufman, 1983). The study was conducted in a school comprised of two-thirds minority students with a history of identifying only one percent of the student population as gifted. Using this method, five percent of the population was identified. The authors attribute the change to the DA process used with the NNAT. They go further to suggest that the success of the DA procedure with the NNAT supports the idea that changing the type of test is not sufficient to generate proportional identification of gifted minority students, but it is the nature and format of the test administration that makes the difference (Lidz & Macrine, 2001).

In 1995 the National Research Center for Gifted and Talented published a guidebook to help school districts implement a plan to identify gifted students from diverse backgrounds (Frasier et al., 1995). The guidebook included recommended criteria, instruments, suggestions on how to establish assessment teams, and how to coordinate the services. It included how to establish reliability, scoring criteria, and how to develop an appropriate curriculum. Staff development models, rubrics, case studies, and reproducible transparencies were also provided (Frasier et al., 1995). Despite the

passing of ten years and the efforts by organizations and government policy, the implementation of research into daily practice has encountered continued controversy and obstacles (Ford, 2005).

Obstacles to Change

The research described to this point clearly supports the need for a change in how schools in the United States assess for giftedness. Most of this research is at least five to ten years old, and change of this magnitude is slowed by many obstacles including contextual beliefs and values, the technical qualities of alternative assessments, and diversity in the area of talent development (Johnsen, 2003).

The belief in the sanctity of numbers in our educational system creates a view that giftedness is a binary construct; the child is gifted or not gifted (Johnsen, 2003). Perpetuating this belief are parents who tend to view quantifiable scores as more scientific than teacher judgments (Johnsen, 2003). Children who produce high quality work but have average IQ scores are considered talented or overachievers, but not gifted (Johnsen, 2003). Some fear this change toward alternative measures will lead to an end of gifted programming because soon every child will be considered gifted (Johnsen, 2003).

Without technically adequate alternative measures, the belief in the sanctity of numbers and giftedness as a binary construct will be sustained (Johnsen, 2003). The research is limited, both in the validity and reliability of alternative measures (Johnsen, 2003). Theories on how talent develops suggest it is a highly dynamic and idiosyncratic

process which will challenge any examiner to select the appropriate components to assess (Johnsen, 2003).

In 1994, Hunsaker surveyed 39 school districts that serve large numbers of culturally diverse students to examine the success and failure of alternative strategies to identify gifted students. The majority of these districts used a combination of alternative measures in conjunction with traditional measures. The most frequently used alternative strategies were checklists, portfolios, rating scales, and behavior observations. While districts recognized the advantages of these techniques and continued to use them, they were dissatisfied with these alternative measures because they were costly, time consuming, and required additional personnel to implement. Other districts surveyed had attempted to use the these alternative measures but had stopped using them because they were costly, time consuming, subjective, and overall not successful at differentiating gifted children. Hunsaker (1994) concluded that these professionals needed more training to recognize the benefits of alternative measures.

Hunsaker (1994) also found that schools cited lack of training for their teachers, limited time, limited funding, lack of home support, and poor motivation in the student body as other variables that contributed to the implementation of alternative measures. In addition, teachers felt limited by state criteria. In the end, traditional methods of identification seem more cost effective despite their well-documented limitations.

Even when teachers have the resources to use alternative measures, using multiple sources of information to decide whether a student should participate in a program for the gifted can be problematic for teams and students when the information is contradictory (Aderholdt-Elliot & Algozzine, 1991). Qualitative data is difficult to assess and compare

without clear criteria to quantify the material (Patton, Prillaman, Van Tassel Baska, 1990).

Another obstacle to change is the lack of recognition of the existence of under-representation of students from ethnic and cultural minorities in their gifted programs. All the schools surveyed had similar under-representations resembling statistics predicted by scholars (Hunsaker, 1994). Despite this, Hunsaker found that almost half of the schools surveyed did not acknowledge that they had this problem in their school. To overcome this major obstacle, educators may need to deal with their personal belief systems about the presence of giftedness in these populations (Hunsaker, 1994).

Once schools accept that they have a problem they need to implement an assessment program that is financially viable and capable of identifying gifted ethnic and cultural minorities. Based on continued controversy and calls for change (Ford, 2005) the problem still exists. It is the obstacles identified by Hunsaker (1994) and Johnsen (2003) that are impeding the implementation of proven programs.

Lidz and Macrine (2001) incorporated existing school data from standardized academic testing (ITSB), sociometric questionnaires, parent questionnaires, the GATES rating scale (Gilliam, Carpenter, & Christensen, 1996), group observations, the K-ABC (Kaufman & Kaufman, 1983) mental processing subtests, and the Dynamic Assessment (DA) adaptation of the NNAT (Naglieri, 1997) to assess for giftedness. To qualify for the gifted program the student had to achieve a 97^{th} percentile on two of the three major assessments (ITSB, K-ABC, or NNAT). A regression analysis revealed that the DA-NNAT was the best predictor of gifted status among those selected, suggesting that it responsible for the inclusion of most students in the gifted program when minority group

was controlled (Lidz and Macrine, 2001). The K-ABC MPC score also predicted gifted status when minority group was controlled (Lidz and Macrine, 2001). Unfortunately ITSB scores were available for very few students and were subsequently omitted from the main regression analysis (Lidz and Macrine, 2001). The use of existing school data, such as the ITSB scores, to predict giftedness is a worthy pursuit as it circumvents some of the obstacles commonly encountered when districts attempt to utilize alternative strategies to increase minority inclusion in gifted programs. Based on research by Hunsaker (1994) it can assumed that districts are most likely to successfully implement research based assessment programs when they require few budgetary additions, limited demands on time, and limited personnel additions.

The purpose of the present investigation was to compare traditional and alternative assessment of "giftedness" in predicting academic success of minority elementary school children. Educational data of students who were assessed for giftedness using a teacher created assessment system was analyzed to compare traditional and alternative assessment of "giftedness" in predicting academic success of minority elementary school children. The school district involved in this investigation made a decision to substitute a test of school ability (OLSAT-6, Lennon & Otis, 1989) for an IQ test when assessing for eligibility for their gifted program and thus the test of school ability constitutes the "traditional assessment". It was hypothesized that behavior checklists and academic measures (alternative assessments) can be used as an alternative to ability testing to differentiate the gifted from the general student population. Students who were selected for inclusion in a gifted program using the traditional method (ability assessment) will not differ significantly on future standardized tests of academic

achievement when compared to a group of children who entered the same gifted program based on alternative assessments and academic achievement. It was further hypothesized that a scoring rubric incorporating both a test of ability and alternative measures can differentiate the gifted from general student population.

Method

Participants

Test data from 87 third-, fourth-, fifth-, sixth-, and seventh-grade students was evaluated. The participants included 52 girls and 35 boys. Using a combination of traditional and alternative assessments, the students were evaluated for academic enrichment from the school district's pull-out gifted program entitled Enriched Thinking for Children (ETC). The students attended two linked "sister schools". One school is for Kindergarten through third-grade students and one is for fourth through sixth-grades. Using identical assessment procedures and scoring criteria established by the district, each student was assessed for academic enrichment in second-, third-, or fourth-grade. Each child was in the ETC program for a minimum of one year and received instruction from the same teacher for this period of time.

The students are members of a large and diverse student body. Their ethnic and cultural background is roughly representative of the general population in this school district. The most current New York State report of student body demographics and academic performance in this district is from the 2002-2003 school year (NYSED, September 4, 2005). This district has not experienced any population shifts in the past two years; therefore, it is assumed that the 2005-2006 school year demographic data is fairly consistent with the 2002-2003 data. New York State reports the average class size in this district is approximately twenty students. There was an average of 497 students in each Kindergarten to third-grade school and an average of 384 students in each grade-four to grade-six level schools. Sixty percent of the district's public school student body is African-American; sixteen percent is Caucasian; fourteen percent is Hispanic; and ten

percent of the student body is identified as American Indian, Asian, Alaskan, or Pacific Islander.

New York States describes this district as a district with "high student needs in relation to district resource capacity" (NYSED, September 4, 2005). Forty-three percent of the students qualify for free lunch; fifteen percent are enrolled in a reduced lunch program; and roughly eight percent of the student body is enrolled in a program for students with limited English proficiency. On average, four percent of the student body drops out of school prior to graduation.

Procedure

This study utilized pre-existing information within the school district including standardized test data and educational records. Data used to determine inclusion of each student was collected from the ETC teacher. The remaining archival test data was collected from the school database.

The data collection process began with a nomination of a student by his/her classroom teacher or by another school professional. Once nominated, two behavior checklists for giftedness were completed by the student's classroom teacher and the ETC teacher. The parent of the nominated child also completed a parent version of the checklist for gifted behavior. The ETC teacher also administered a group test of school ability (OLSAT-6) in December of each year. A curriculum based measure of reading ability (ELP) was also collected in December. The checklist raw scores, estimate of overall school ability (OLSAT-6), and curriculum measures were entered into a rubric to determine inclusion in the ETC program.

The majority of ETC students (78%) were nominated and selected in their second-grade year. While some students enter the ETC program at the end of first-grade based solely on teacher recommendation, they are later assessed using the second-grade rubric. Once a student is accepted into the ETC program no further assessment is done to maintain membership in the program.

In second-, third-, and fifth-grades, all students were administered a standardized test of academic achievement, the *TerraNova* (CTB/McGraw-Hill, 1997). The *TerraNova* tests are scored by the test publisher and returned to district and entered into the school database. *TerraNova* scores were used as outcome variables in hypothesis testing.

Instrumentation

The instruments for this investigation are part of the standard assessment battery for giftedness in the district and tests given to all students district-wide. Table 1 summarizes the instruments used in this study.

Table 1. *Instrumentation Summary*

Identification Measures	Outcome Measures
OLSAT-6	TerraNova 2
Teacher Checklist	TerraNova 3
ETC Teacher Checklist	TerraNova 5
Parent Checklist	
Early Literacy Profile	

The scoring rubric (Appendix I) is the core of the gifted assessment, as it aggregates scores from at least five instruments into one score that determines eligibility for the ETC program. The lowest grade level for a rubric is second-grade. The number of instruments used is dependent on the grade level in which the student is assessed. For example, five assessments are incorporated by the second-grade rubric. The child's performance on each component earns them a corresponding score on the rubric ranging from one to four. The student's score on the teacher checklist, ETC teacher checklist, and test of school ability are double-weighted, while the ELP score and parent checklist are single-weighted. Children who achieve a composite score equal to or greater than the 96th percentile on the test of school ability (OLSAT-6) automatically enter the program.

The Otis-Lennon School Ability Test, sixth edition, (OLSAT-6, Lennon & Otis, 1989) is a group administered test of school ability that assesses both verbal and non-

verbal abilities. In addition to a composite score, School Ability Index (SAI), scores for verbal and non-verbal abilities are also obtained. Scores are reported as normalized standard scores with a mean of 100 and a standard deviation of 16. The OLSAT-6 includes practice tests to help students familiarize themselves with the content and format of the test. The district in this study utilizes a practice session for the students to become familiar with the instructions, types of questions, and procedures as described in the OLSAT-6 manual. Different grade levels have different forms of the OLSAT-6. The reliability coefficients for OLSAT-6 range from .70 to .90 across all grade levels suggesting internal consistency (Lennon & Otis, 1989). The Standard Error of Measurement for the composite SAI score is 5 SAI units (Lennon & Otis, 1989). Evidence for validity is reported in the form of a high correlation between the OLSAT-6 and the Stanford Achievement Test. Four reviews of the OLSAT-6 indicate a need to improve the theoretical basis of the test, and the evidence of validity (Anastasi, 1992; Salvia & Ysseldyke, 1995; Swerdlik, 1992; Walsch & Betz, 1995).

The classroom teacher and ETC teacher checklists (Appendix II) were created by the ETC team. The 25-item checklists asks the rater to evaluate a student's behavior by indicating whether a certain behavior is observed "Almost always-4", "Frequently-3", "Seldom-2", or "Never-1". The ETC team reports the scale to assess social development, creative thinking, fund of information, tendency towards inquiry, interest, and motivation. The final raw score is derived by adding the responses. The range of the total score is 25 to 100 points. The raw score is later entered on the scoring rubric.

The parent checklist (Appendix III) was created by the ETC team. The 18-item checklist asks the rater to evaluate a student's behavior by indicating whether a certain

behavior is observed "Almost always-4", "Frequently-3", "Seldom-2", or "Never-1". The ETC team also reports this scale to assess social development, creative thinking, fund of information, tendency towards inquiry, interest, and motivation. The final raw score is derived by adding the responses. The range of the total score is 18 to 72 points. The raw score is later entered on the scoring rubric.

The Early Literacy Profile (ELP) is a curriculum based assessment developed by the school district. It has not been evaluated for reliability or validity. It is used by classroom teachers to evaluate student reading and writing skills based grade level expectations. Assessed throughout the year, a student is expected to move through several reading levels per grade. The student's ELP reading level at the time of the ETC evaluation is entered into the scoring rubric. Possible rubric points earned for ELP reading level range from 1 to 4. For example, if the child's ELP reading level is 3 or more grade levels above their current grade the child earns 4 points on the rubric. ELP reading levels that are 1 or 2 grade levels above the child's grade earn 3 points on the rubric. If a child's ELP reading level is "on grade level" 2 points are earned on the rubric. A "below grade level" ELP reading level earns 1 point on the rubric. See Appendix I for further detail.

The *TerraNova* (CTB/McGraw-Hill, 1997) is a group-administered test of reading, writing, science, mathematics, and social studies given to all second, third, and fifth-grade students in the spring. Nationally-normed scores are reported as percentile ranks and standard scores. Using a conversion table percentile ranks were converted to NCE scores. Kuder-Richardson 20 reliability is reported as .82 to .94. This district

administers only the reading, writing, and mathematics portions of the *TerraNova*. These scores were used as an outcome variable to test hypotheses.

Statistical Analysis

Analysis of the data was completed using Statview software. Descriptive statistics were utilized to describe shifts in the number and ethnicity of students in ETC after the assessment procedure was modified to one that incorporates alternative assessment.

Test score data and demographic data for each student were gathered from the school database and ETC assessment records. The data was divided into four groups: The first group (Gifted by SAI) consists of those students who entered the ETC program based on their OLSAT-6 score alone (the traditional method). The second group is comprised of those who would not have entered the program solely as a result of their OLSAT-6 performance, but rather were included in ETC based on a combination of traditional and alternative measures (Gifted by Rubric). The third group consists of those who did not enter the ETC program based on SAI (Not Gifted by SAI). Children in the "Not Gifted by SAI" group were not considered for the alternative measure as their SAI score earned only one point on the rubric, rendering it impossible for them achieve the necessary points on the rubric to be found eligible for ETC. The fourth group (Not Gifted by Rubric) comprises of children denied entrance into ETC based on their total rubric score. These four groups were compared based on their school performance across time using Analysis of Variance (ANOVA) and Bonferroni/Dunn Post Hoc analysis. It was hypothesized the groups (Gifted by SAI and Gifted by Rubric) would not differ significantly in relation to their *TerraNova* scores and both groups in turn would reflect the outstanding academic achievement often associated with the gifted population.

Results

The rubric method of assessment for ETC (Enriched Thinking Children) replaced the traditional method that relied solely on an SAI score for admission to ETC in the 2002-2003 school year. As outlined in Table 2, the number of students accepted into ETC increased after the district began the use of the rubric to determine ETC eligibility.

Table 2. *Percentage of Students Found Eligible for ETC by School Year*

School Year	Use of Rubric	Number of second grade students accepted into ETC	Percentage of second grade students accepted into ETC
2001-2002	No	4	3%
2002-2003	Yes	8	6%
2003-2004	Yes	16	13%
2004-2005	Yes	19	15%
2005-2006	Yes	19	15%

Note. The mean number of students per grade over 5 school years was estimated as 126 (NYSED, September 4, 2005).

Prior to the use of the rubric a child could only gain entrance into the program if he or she obtained an SAI score of 128 or greater on the OLSAT-6. Using this traditional method for the 2001-2002 school year, only three percent of the grade-2 student body was identified as gifted. This three percent is below what many consider to be the percent of the general population that is gifted (Hollingsworth Center Newsletter, 1991; NAGC, 2004; Renzulli, 2004). The first year that the rubric was put in place (2002-2003) the number of students identified as eligible for the ETC program doubled (4 to 8). By the second year (2003- 2004) of using the rubric, the number of students identified for

ETC had quadrupled (4 to 16) from the last year of the traditional method. The last two school years (2004-2005 and 2005-2006), during which the rubric method of eligibility was used, resulted in 15% of grade-2 qualifying for ETC.

Prior to use of the rubric, three out of the four children accepted into the ETC program were Caucasian. The representation of ethnicity in the ETC population was examined in relation to the population of the school district. Table 3 displays these findings. While Caucasians comprise 16% of the overall school population they represent 31% of the ETC population. Hispanics represent only 14% of the overall school population but comprise 6% of the ETC population. While 60% of the school population is African-American, 49% of the ETC population is African American. The Asian population in the school is 10% and the ETC Asian population is 14%.

Table 3. *Frequency Distribution for Ethnicity in the ETC and School Populations from 2002-2005*

Ethnicity	Number in ETC population	Percent of ETC Population	Number in School population	Percent of School Population
African American	32	49	529	60
Caucasian	21	31	141	16
Asian	9	14	88	10
Hispanic	4	6	124	14
Total	66	100	882	100

Note. **Representation in school population based on 2002-2003 student body which had a mean of 126 students per grade** (NYSED, September 4, 2005).

Children enter the ETC program based on their SAI alone (Traditional method) or based on their rubric score (Alternative method). Since the implementation of the rubric, the ETC population has become more ethnically heterogeneous. The implementation of the rubric affected the representation of the African American ETC population greater than any other group. Table 4 shows that only 13.5% of the African Americans were accepted into the ETC program when the criterion for admittance was an SAI of 128 or more while 50-55% of the Asian, Caucasian, or Hispanic children entered based on their SAI score. The vast majority (86.5%) of the African-American children, who entered ETC from 2001-2005 were found eligible for ETC by the rubric.

Table 4. *Percentage of Different Ethnic Groups Identified as Eligible by SAI versus Rubric Method*

	ETC Eligibility Method	
Ethnicity	SAI	Rubric
African American	13.5	86.5
Caucasian	55.0	45.0
Asian	50.0	50.0
Hispanic	50.0	50.0

Note. Data includes all ETC students from 2001-2005

Use of the alternative assessment clearly had an impact on the ETC population. The ethnic diversity as well as the number of students admitted to the program increased when student eligibility decisions were determined by the use of the rubric. Since the use of the rubric resulted in quadrupling the number of students in the ETC program and it

also improved the ethnic diversity in ETC, attention should be given to the rubric to explore the relationships between its components and how the rubric functions to select students. The ETC team created different rubrics for each grade level in which a child could be assessed (grades 2-5). The rubrics vary by components due to the increased availability of educational test data that becomes available as a child progresses through school. Since 79% of the students in the current study entered ETC with a grade-2 rubric, attention was given to this rubric and its components.

The grade-2 rubric is comprised of five components. These components are the OLSAT-6, Teacher Checklist, ETC Teacher Checklist, Parent Checklist, and Early Literacy Profile (ELP). The child's score on each component of the grade-2 rubric earns them a corresponding score on the rubric ranging from one to four. The student's score on the Teacher Checklist, ETC Teacher Checklist, and OLSAT-6 are double-weighted, while the ELP score and Parent Checklist are single-weighted.

The relationship between rubric components was analyzed with a correlation matrix. Un-weighted grade-2 rubric values were used in the matrix to avoid distorting the relationships between components. The correlations between the ETC Teacher Checklist, Teacher Checklist, Parent Checklist, Early Literacy Profile, and OLSAT-6 SAI rubric values are shown in Table 5.

Table 5. *Relationships Between Rubric Components*

	Classroom Teacher	Parent	SAI
ETC Teacher	.901*	.555*	.729*
Classroom Teacher		.593*	.569*
Parent			.324

* $p<.0001$ using Fisher's r to z

Note. Because ELP rubric score variance is zero it cannot be included in the matrix

Since every student that received a rubric earned the highest possible rubric score for their Early Literacy Profile (ELP), this component had a variance of zero and thus could not be used in the correlation matrix. A weak to moderate correlation between the SAI rubric score and the parent checklist rubric score was found. The Fisher's *r* to *z* statistic indicates that the strong positive relationships between all remaining components are statistically significant ($p<.0001$).

Of those students nominated for an ETC assessment by a teacher, 76% of the students are eventually accepted into the program. Between the 2001-2005 school years, only 38% of those students accepted into ETC were accepted based on their SAI score alone. Thus eligibility for 62% of the ETC population was determined using the alternative assessment.

If a child was given an alternative assessment (rubric) it was very likely that this child entered the ETC program. In contrast to the 38% acceptance rate based on SAI alone, 82% of the children who receive an alternative assessment were found eligible for ETC. Given these results it seems reasonable to question if the rubric can discriminate

children with the potential for very high academic achievement from those without such potential. In an attempt to answer this question *TerraNova* scores for all students nominated for ETC (N=87) were compared across time. *TerraNova* data was available for Grades 2, 3, and 5. Four groups emerged in the data: (1) Those students who entered the ETC program based on their OLSAT-6 score alone (Gifted by SAI); (2) Students included in ETC based on a combination of traditional and alternative measures (Gifted by Rubric); (3) Students who did not enter the ETC program based on their SAI score alone (Not Gifted by SAI); (4) Children denied entrance into ETC based on their total rubric score (Not Gifted by Rubric).

Unfortunately only 9 students in the entire sample (*N*=87) were found ineligible by the rubric and they were all evaluated in the 2004-2005 school year. The 9 students found ineligible do not have *TerraNova* scores from grade-2 because the Grade-2 *TerraNova* was first administered in the 2005-2006 school year. In addition, Grade-5 *TerraNova* data also does not exist for these students because they are currently in fourth grade. This fact prohibits an analysis of the academic achievement over time for those 9 students who were found ineligible by the rubric. However, it is possible to compare the "Not Gifted by Rubric" group to the other groups (Gifted by SAI and Gifted by Rubric) on the Grade-3 *TerraNova*.

Data for the "Not Gifted by SAI" group was also limited to a single year (2005-2006) and was found only on the Grade-2 *TerraNova*. This prohibits the comparison of the *TerraNova* testing across time for the "Not Gifted by SAI" group. However, it is possible to compare the academic achievement of the "Not Gifted by SAI" group to the

other groups (Gifted by SAI and Gifted by Rubric) on the Grade-2 *TerraNova* from the 2005-2006 school year.

An Analysis of Variance (ANOVA) was used to compare Grade-2 *TerraNova* NCE scores of the "Not Gifted by SAI"; "Gifted by SAI"; and "Gifted by Rubric" groups. Group scores are outlined in Table 6. Using ANOVA for Grade-2 *TerraNova* Total scores, the differences between groups is significant (F= 14.40, p<.0001). The difference between groups is also significant on the Grade-2 *TerraNova* Reading scores (F=5.26; p= .0115). The groups also differed significantly on Grade-2 *TerraNova* Language scores (F=8.564; p= .0013) and Grade-2 *TerraNova* Math scores (F=20.636; p<.0001).

A Bonferroni/Dunn Post Hoc analysis was used to isolate the group differences on Grade-2 *TerraNova* scores. The "Not Gifted by SAI" group performed significantly below the "Gifted by SAI" group on all Grade-2 *TerraNova* measures (p< .05) after Bonferroni/Dunn correction for multiple comparisons. The "Gifted by Rubric" group performed significantly above the "Not Gifted by SAI" group on only the Grade-2 *TerraNova* Math (p< .05). The "Gifted by SAI" group outperformed the "Gifted by Rubric" group on Grade-2 *TerraNova* Total and Grade-2 *TerraNova* Math (p< .05).

ANOVA was also used to compare the Grade-3 *TerraNova* NCE means between the 3 groups represented on this test (Not Gifted by Rubric; Gifted by Rubric; Gifted by SAI). Group scores are outlined in Table 6. The 3 groups differed significantly on their mean Grade-3 *TerraNova* Total scores (F= 7.89, p= .0011) and their Grade-3 *TerraNova* Math scores (F= 12.570, p<.0001). The "Gifted by SAI"; "Gifted by Rubric"; and "Not

Gifted by Rubric" groups did not differ significantly on the Grade-3 *TerraNova* Reading or Language tests.

A Bonferroni/Dunn Post Hoc analysis was used to determine which comparisons were responsible for the significant differences found between groups on the Grade-3 *TerraNova* Total scores and their Grade-3 *TerraNova* Math scores (Table 6). The "Gifted by SAI" group outperformed the "Gifted by Rubric" group on Grade-3 *TerraNova* Math scores ($p < .05$) after Bonferroni/Dunn correction for multiple comparisons. The "Gifted by SAI" group scored significantly higher than the "Not Gifted by Rubric" group on Grade-3 *TerraNova* Total scores and Grade-3 *TerraNova* Math scores ($p < .05$). The "Gifted by Rubric" group outperformed the "Not Gifted by Rubric" group on Grade-3 *TerraNova* Total scores and Grade-3 *TerraNova* Math scores ($p < .05$). Significant differences were not found between "Gifted by Rubric" and "Not Gifted by Rubric" groups on their mean Grade-3 *TerraNova* Reading NCE scores or between their mean Grade-3 *TerraNova* Language NCE scores. These findings indicate that the rubric is capable of discriminating between students based on their math skills but not on their reading or language skills. Since the *TerraNova* Total score is comprised of the Reading, Math, and Language scores it is reasonable to assume the significant difference ($p < .05$) between "Gifted by Rubric" and "Not Gifted by Rubric" on Grade-3 *TerraNova* Total scores is due to their differing performances on the Grade-3 *TerraNova* Math test.

Table 6. Significant and Nonsignificant Differences Between Mean *TerraNova* NCE Scores by Group

	Grade-2 *TerraNova*				Grade-3 *TerraNova*				Grade-5 *TerraNova*			
Group	Total	Reading	Language	Math	Total	Reading	Language	Math	Total	Reading	Language	Math
Not Gifted by SAI	49.75	50.79	49.54	47.33	-	-	-	-	-	-	-	-
Gifted by SAI	78.45	70.45	77.50	82.9	80.41	72.18	75.68	84.86	73.65	67.00	74.88	75.75
Gifted by Rubric	63.67	63.70	62.83	62.33	72.07	65.37	71.24	76.16	72.88	69.31	72.06	73.31
Not Gifted by Rubric	-	-	-	-	62.19	59.31	62.50	64.37	-	-	-	-
Method Comparison												
Not Gifted by SAI vs. Gifted by SAI	sig	sig	sig	sig								
Not Gifted by SAI vs. Gifted by Rubric	ns	ns	ns	sig								
Gifted by SAI vs. Gifted by Rubric	sig	ns	ns	sig	ns	ns	ns	sig	ns	ns	ns	ns
Gifted by SAI vs. Not Gifted by Rubric					sig	ns	ns	sig				
Gifted by Rubric vs. Not Gifted by Rubric					sig	ns	ns	sig				

Note. sig = significant difference, ns = nonsignificant difference; significance =<.05

By grade-5, data for only two groups exist ("Yes by SAI" and "Gifted by Rubric"). Only 4 students represent the "Yes by SAI" group and 8 students represent the "Gifted by Rubric" on the Grade-5 *TerraNova*. The ANOVA statistic was attempted but it yielded very weak statistical power coefficients (.051- .073). Unfortunately statistical comparisons between the groups presented in Table 6 for Grade-5 *TerraNova* must be viewed with caution due to the small number of students in each group and the resulting weak statistical power.

The performance of the "Gifted by SAI" and the "Gifted by Rubric" groups between Grade-2 *TerraNova* testing and Grade-3 *TerraNova* testing was compared. As outlined in Table 6, the "Gifted by SAI" and "Gifted by Rubric" groups did not differ significantly on Grade-2 or Grade-3 *TerraNova* Reading or Language tests. However, Table 6 also shows "Gifted by SAI" outperforming "Gifted by Rubric" on the Grade-2 *TerraNova* Math test ($p < .05$) and Grade-3 *TerraNova* Math test ($p < .05$). The "Gifted by SAI" group out-scored the "Gifted by Rubric" group on the Grade-2 *TerraNova* Total score ($p < .05$) but these groups did not significantly differ on the Grade-3 *TerraNova* Total score. Table 6 shows that the *TerraNova* Total score mean for the "Gifted by Rubric" group increased by 9 from grade-2 to grade-3, while the "Gifted by SAI" group's *TerraNova* Total score increased by only 2. The primary hypothesis of this project was that a significant difference between these two groups would not be found on academic measures, thus validating the "giftedness" of the "Gifted by Rubric" group and the ability of the alternative assessment to accurately identify gifted children that may have been overlooked by the traditional measure (OLSAT-6). The two groups ("Gifted by SAI" and "Gifted by Rubric") differ on the *TerraNova* Math assessments at both Grade-2 and

Grade-3 levels but do not differ on Grade-2 or Grade-3 *TerraNova* Reading and Language assessments. Thus the hypothesis is accepted in the subject areas of Reading and Language, but not accepted in the area of Mathematics.

Discussion

The purpose of the present investigation was to compare traditional and alternative assessment of "giftedness" in predicting academic success of minority elementary school children. It was hypothesized that behavior checklists and academic measures (alternative assessments) can be used as an alternative to norm-referenced ability testing to differentiate the gifted from the general student population. It was also hypothesized that students who were selected for inclusion in a gifted program using the traditional method (ability assessment) would not differ significantly on future standardized tests of academic achievement when compared to a group of children who entered the same gifted program based on alternative assessments and academic achievement. Statistical analyses revealed no significant differences between those students accepted with the traditional format and those with the alternative method on Grade-2 and Grade-3 TerraNova measures of Reading and Language. These groups however did differ significantly on the Grade-2 and Grade-3 *TerraNova* measures of Mathematics. Thus the primary hypothesis of this investigation was supported for the reading and language areas.

It was further hypothesized that a rubric incorporating both a test of ability and alternative measures can differentiate the gifted from the general student population. The rubric was only able to differentiate between the gifted and general student population in the area of Mathematics to those students who were denied access to ETC by the rubric. There was no significant difference on Grade-3 *TerraNova* measures of Reading or Language.

Results indicate that the incorporation of the alternative assessment procedures increased the number of ETC students as well as the ethnic diversity of those students. In the three years since the incorporation of the alternative assessment, the number of students included quadrupled with approximately 15% of each grade-level represented in the ETC population. Prior to the use of alternative assessment, identified children were low and 75% were Caucasian despite the fact that they represent only 16% of the general student population. After implementation of the alternative approach, the demographics of the overall student population was better reflected in the program, with 31% Caucasian.

The alternative assessment procedure has undoubtedly improved the ethnic diversity of ETC, having the greatest impact on the African-American population. Of the minority population entering the program, 85% were African American, contrasted with 50% of other ethnic minorities. It is suggested that if the traditional measures were the sole criteria for selection, African-Americans who are gifted would be overlooked, and with greater frequency than the other ethnic groups. The study's findings are supported by the criticisms of the traditional method of assessment for giftedness resulting in the under-representation of minorities in programs for gifted students (Ford, 1995, 2005; Hadaway & Marek-Schroer, 1992; Lidz & Macrine, 2001; Lopez, 2000; U.S. Department of Education, 2003).

Using only the traditional method would have magnified the under-representation of the "majority" (60% African-American) of the school's population. The incorporation of a more flexible assessment procedure, through the use of an alternative measure, has helped this school district achieve a more representative population of students in the

ETC program. It may be argued that the district "lowered the bar" to allow more students into the program and that those included in ETC with an alternative assessment may not truly be "gifted"; especially since 82% qualified for the program based on an alternative assessment. However, the findings of this study suggest these children function in the ETC program.

It was found that the two groups ("Gifted by SAI" and Gifted by Rubric") did differ on some academic measures (*TerraNova* Mathematics and Total Score) in grade-2. By grade-3 the only significant difference on *TerraNova* testing was in the area of Mathematics. Observed group differences found on the *TerraNova* Total in Grade-2 diminished over time and were not found on Grade-3 testing. The "Gifted by Rubric" group steadily improved their overall level of academic achievement as assessed by *TerraNova* testing. Thus it can be assumed that those children placed in the program through alternative assessment did, indeed, have the ability to function in the gifted program. However, it is possible that that the "Gifted by Rubric" group improved in their academic achievement due to their inclusion in the ETC program and that the program stimulated enhanced performance. It is also possible that teacher expectations of ETC students are higher and thus this group was encouraged and challenged more by their classroom teachers in grades 2 thru 3 compared to their previous years of schooling. Inclusion in ETC may raise academic confidence, motivation and change a child's peer group. Thus the child is surrounded by academically driven and competitive peers and normative reference points might shift. Whatever the contributing factor, those who would have been overlooked by the traditional assessment benefited from inclusion in

ETC and may have not performed at the same level in mainstream classes. While the effect of the rubric is positive, its components need to be more carefully evaluated.

Closer analysis of the relationship between rubric components indicated zero variance in ELP scores for all students receiving the rubric thus suggesting that the ELP does not contribute to the eligibility determination. This district-created test of reading achievement should not be included in the rubric. A substitute would be an individually administered achievement test of reading found on such tests as the *Wechsler Individual Achievement Test-Second Edition* (Psychological Corporation, 2001) or the *Woodcock Johnson -III* (Woodcock, McGrew, & Mather, 2001).

This school district has also chosen to substitute a group test of "School Ability" (OLSAT-6) for a more traditional test of intelligence for determining ETC eligibility. It is possible that the use of this test is responsible for the low number of children found eligible for ETC with the traditional method. Group tests of ability have 3 major limitations (Salvia & Ysseldyke, 1995). The first is that extrapolation is used to calculate mental age based on grade sampling, but students of differing ages can be in the same grade which adds confusion to the interpretation of the resulting score. The second limitation is that most group tests of ability are standardized on school districts and not individual students. Efforts are usually made to select representative districts, as was done with the OLSAT-6 (Lennon & Otis, 1989) but the population in each district may not necessarily include a representative population of individuals (Salvia & Ysseldyke, 1995). The third limitation is that group tests of ability are standardized on volunteer districts. Districts that refuse to participate are replaced by those thought to be "comparable". This replacement process may introduce bias (Salvia & Ysseldyke, 1995).

In addition, group tests of ability require the student to read, and thus ability levels estimated by group measures may be contaminated by a child's reading level. As discussed in a review of the OLSAT-6 (Swerdlik, 1992), the test user must accept the limitations of a group administered test and use it only as a screening instrument. Unfortunately this school district has substituted the OLSAT-6 for traditional intelligence testing. In the traditional model of eligibility determination, decisions were made solely on the OLSAT-6. An individual test of intelligence such as the *Wechsler Intelligence Scale-Fourth Edition* (Wechsler, 2003), *Differential Ability Scales* (Elliott, 1990) or the *Stanford-Binet Intelligence Scales Fifth Edition* (Roid, 2003) would be better instruments to capture the multiple facets of intelligence demonstrated in the gifted minority student.

Classroom teacher nomination was the catalyst for evaluation of students in this study but there has been some debate about the ability of teachers to accurately nominate and help identify gifted children (Ford, 1995; Frasier, Garcia, & Passow 1995; Frasier & Passow, 1994; Kornhaber, 1999; Lopez, 2000; Rohrer 1995). Some researchers (Frasier, Garcia, & Passow 1995; Powell & Siegle, 2000) have found that teachers need more training to identify the gifted of the majority and minority cultures (Frasier, Garcia, & Passow 1995; Powell & Siegle, 2000). If it assumed that all the children accepted into ETC are gifted, then the teachers who selected these children for ETC eligibility testing correctly identified gifted children with 76% accuracy. Only 24% of those students nominated for eligibility testing were found ineligible. To ascertain if some gifted children were not nominated for eligibility testing (because they were overlooked by their teachers) all students not nominated in grades 2-5 would need to be assessed. Since classroom teachers determine which students are selected for eligibility testing, their

decision to refer the student is almost as crucial as the type of assessment used to determine eligibility. This would be a worthy extension of this research.

The manner in which the rubric is weighted (Classroom Teacher Rating, ETC Teacher Rating, and OLSAT-6 SAI score are double weighted; Parent rating and ELP are single weighted) increases the possibility of teacher bias. The classroom teacher and ETC teacher nominate a child; also rate the child, and then their rating counts double that of the parent rating scale and the reading test (ELP). Since one teacher nominated the child and both teacher ratings are in very high agreement (.901), it can be assumed that the teacher ratings of the child will always be high. Thus it is not surprising that 82% of the children who receive a rubric are found eligible for ETC. Every child in this study received the highest possible score on the ELP component of the rubric, thus another very high score on a rubric component is guaranteed. Interestingly, the parent rating of the child was only moderately correlated to the rating of both teachers but it is single weighted. Thus the only component of the rubric that has enough weight (double-weighted) to exclude a nominated child after high ratings on three of the four other components is the OLSAT-6 SAI score. This happened to 24% of the students who received the rubric.

Regardless of method of determining eligibility, by grade-3 all students in ETC are achieving at similar reading and language levels on the *TerraNova*. While the alternative assessment (rubric) is not without weaknesses, it appears to be a far better method of eligibility assessment for giftedness than the use of the OLSAT-6 SAI score alone (traditional method) for this ethnically diverse district. Efforts by this district to improve the test of cognitive ability and test of reading ability used in the rubric will help

to improve the validity of their alternative assessment. If the quality of the tests of academic ability and cognitive ability are improved, the ETC team may feel more comfortable in removing the "double-weighting" on teacher assessments and the OLSAT-6 score. Inclusion of a third rater may help reduce the chance of teacher bias in the assessment. This district may also wish to improve the type of gifted rating scale used by teachers and parents. The current scale is a non-standardized scale without evidence for validity or reliability. The *Gifted and Talented Evaluation Scales* (GATES; Gilliam, Carpenter, & Christensen, 1996) is a valid and reliable gifted rating scale that can be integrated into a comprehensive assessment (Sattler, 2006).

The limitations of this study relate to the varying representation of each of the four groups across the three grade levels of *TerraNova* testing and the lack of reliability and validity evidence for the district devised components of the rubric. The low number of students in each remaining group in grade-5 significantly reduced the statistical power of the ANOVA. If each group was represented on each grade level and the sample size increased, a regression analysis could have been performed to further analyze rubric components.

While this study has some limitations, the implications for future research in the field are many. It would be valuable to continue to collect data on these students and assess trends over time. In addition, it would also be valuable to assess the rubric for reliability and validity if the district invests in improving the rubric components. This would also help to simplify the rubric to the most essential components. While research in the field has consistently called for sweeping change in how children are assessed for gifted programs (Ford, 1995, 2005; Hadaway & Marek-Schroer, 1992; Lidz & Macrine,

2001; Lopez, 2000) change has been slow (Ford, 2005; Hunsaker, 1994). Districts have been resistant and slow to implement programs suggested by the academic community (Ford, 2005; Hunsaker, 1994) but continued evaluation of district-devised alternative assessment procedures for the gifted may lead to more change in school districts with large and diverse student populations.

In conclusion, this district has made significant improvements in the assessment of its diverse population for gifted programs. It has created an alternative assessment which has helped to increase the number and ethnic diversity of students in its gifted program. Improving the quality of the components that comprise the alternative assessment will help further validate this school district's alternative assessment procedure for identifying the gifted students.

References

Aderholt-Elliot, M., Algozzine, B., Algozzine, K., & Haney, K. (1991). Current state practices in educating students who are gifted and talented. *Roeper Review,* 14, 20-23.

Anastasi, A. (1992). Review of the Otis-Lennon School Ability Test (6th ed.). In J.J. Kramer & J.C. Conoley (Eds.), *The eleventh mental measurements yearbook.* Lincoln, NE: The Buros Institute of Mental Measurments.

American Educational Research Association, American Psychological Association, and National Council on Measurement in Education. (1999). *Standards for educational and psychological testing.* Washington, DC: Authors.

Armour-Thomas, E. (1992). Intellectual assessment of children from culturally diverse backgrounds. *School Psychology Review.* 21(4), 552-565.

Bernal, E.M. (1994). Gifted Mexican American children: An enthoscientific perspective. *California Journal of Educational Research,* 25, 261-273.

Braken, B.A., & McCallum, R.S. (1998). *Universal Nonverbal Intelligence Test, examiner's manual.* Itasca, IL: Riverside.

Brown, L., Sherbenou, R.J., & Johnsen, S.K., (1997). *Manual for the Test of Nonverbal Intelligence-Third Edition.* Austin, TX: PRO-ED.

Callahan, C. M.., Hunsaker, S. L., Adams, Cheryll M., Moore, S. D., & Bland, L. C. (1995). *Instruments used in the identification of gifted and talented students* (Research Monograph 95130). Storrs, CT: The National Research Center on the Gifted and Talented. University of Connecticut.

Council of State Directors of Program for the Gifted and National Association for Gifted Children. (2003). *State of the States Gifted and Talented Education Report 2001-2002.* Washington DC: National Association for Gifted Children.

Cramond, B. (2004). Can we, should we, need we agree on a definition of giftedness? *Roeper Review.* 27(1), 15-16.

CTB/McGraw-Hill. *TerraNova technical manual.* Monterey, CA: Author.

Detterman, D. K. (1993). Giftedness and intelligence: One and the same? In *The Origins and Development of High Ability.* (pp. 22-43). Wiley, Chinchester (Ciba Foundation Symposium 178).

Elliott, C. D. (1990). *Differential Ability Scales.* San Antonio, TX: Psychological Corporation.

Esquivel, G. B., & Lopez, E. C. (1988). Correlations among measures of cognitive ability, creativity, and academic achievement for gifted minority children. *Perceptual and Motor Skills,* 67, 395-398.

Esquivel, G. B., & Nahari, S. G. (2000). Culturally diverse gifted students: A historical perspective. In G. B. Equivel & J. C. Houtz (Eds.). *Creativity and Giftedness in Culturally Diverse Students.* (pp. 29-43) Cresskill, New Jersey: Hampton Press Inc.

Esthers, I. G., & Ittenbach, R. F. (1997). Today's IQ tests: Are they really better than their historical predecessors? *School Psychology Review*, 26(2), 211-224.

Ford, D. Y. (2005). Intelligence testing and culture diversity: Pitfalls and promises. *NRC/GT Newsletter.* The National Research Center on the Gifted and Talented. University of Connecticut. *Winter,* 3-8.

Ford, D. Y. (2003). Desegregating gifted education: Seeking equity for culturally diverse students. In James H. Borland (Ed.) *Rethinking Gifted Education.* (pp.143-158). New York, New York: Teachers College Press.

Frasier, M. M., Garcia, J. H., & Passow, H. A. (1995). *A review of assessment issues in gifted education and their implications for identifying gifted minority students.* Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.

Frasier, M. M., Martin. D., García, J. H., Finley, V. S., Frank, E., Krisel, S., & King, L. L. (1995). *A new window for looking at gifted children* (RM95222). Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.

Frasier, M. M., Passow, A. H. (1994). *Towards a New Paradigm for Identifying Talent Potential.* Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.

Gardner, H. (1993). *Multiple intelligences: The theory in practice.* New York: Basic Books.

Georgia State Board of Education (SBOE) 160-4-2-.38. Education program for gifted students. Retrieved July 20, 2005 from http://www.doe.k12.ga.us/curriculum/instruction/gifted.asp#how

Gilliam, J. E., Carpenter, B.O., Christensen, J.R. (1996). *Gifted and Talented Evaluation Scales.* Austin, TX: Pro-Ed.

Hadaway, N., & Marek-Schroer, M. F. (1992). Multidimensional assessment of the gifted minority student. *Roeper Review.* 15(2). 73-77.

Herrnstein, R. J. & Murray, C. (1994). *The bell curve*. New York: Free Press.

Hollingworth Center for Highly Gifted Children (1994) Fall Newsletter. As cited in Osbourn, Julia (2005). Gifted children. Retrieved July 7, 2005 from http://schoolnet.lij.edu/eshare/files/1_gifted.html

Jensen, A.R. (2000). Testing: The dilemma of group differences. *Psychology, Public Policy, and Law, 6, 121-127.*

Johnsen, S. K. (2004). *Identifying gifted students: A practical guide.* Waco, TX: Prufrock Press.

Johnsen, S. K. (2003). Issues in the assessment of talent development. In James H. Borland (Ed.) *Rethinking Gifted Education.* (pp.201-214). New York, New York: Teachers College Press.

Kaufman, A. S., Lichtenberger, E. O., & Naglieri, J. A. (1999). Intelligence testing in the schools. In Cecil R. Reynolds & Terry B. Gutkin (Eds.) *The Handbook of School Psychology, third edition.* (pp.307-349). New York: John Wiley & Sons Inc.

Kaufman, A. S. (1994). Intelligent testing with the WISC-III. (pp.1-40). New York: John Wiley & Sons Inc.

Kaufman, A. S., & Kaufman, N. L. (1983). *K-ABC: Kaufman Assessment Battery for Children.* Circle Pines, MN: American Guidance Sercive.

Kornhaber, M. (1999). Enhancing equity in gifted education: A framework for examining assessments drawing on the theory of multiple intelligences. *High Ability Studies.* 10(2), 143-161.

Lennon, R. T., Otis, A. S. (1989). *OLSAT: Otis-Lennon School Ability Test: Sixth Edition. Technical Manual.* San Antonio. The Psychological Corporation Harcourt Brace Jovanovich, INC.

Lidz, C. S., & Macrine, S. L. (2001). An alternative approach to the identification of gifted culturally and linguistically diverse learners: The contribution of dynamic assessment. *School Psychology International.* 22(1), 74-96.

Lopez, E. C. (2000). Identifying gifted and creative linguistically and culturally diverse children. In G. B. Equivel & J. C. Houtz (Eds.). *Creativity and Giftedness in Culturally Diverse Students.* (125-145) Cresskill, New Jersey: Hampton Press Inc.

Matthews, M. S. (2002). Dynamic assessment of academic ability of bilingual immigrant Latino children. *Dissertation abstracts international section A: Humanities and social sciences. 63(2-A), 498.*

Naglieri, J. A. (1997). *Naglieri Nonverbal Ability Test: Multilevel Technical Manual,* San Antonio, TX: The Psychological Corporation.

National Association for Gifted Children (2004). NAGC parent information. Retrieved July 7, 2005 from http://www.nagc.org/ParentInfo/index.html

NCLB (2002). *No Child Left Behind Act.* Title IX, Part A, Section 9101(22) p.522. Public Law 107-10, January 8, 2002.

NYSED, New York State Education Department. Retrieved July 20, 2005, from http://www.emsc.nysed.gov/ciai/gt/define.htm

NYSED, New York State Education Department. *New York State District Report Card Comprehensive Information Report.* Retrieved September 4, 2005, from http://www.emsc.nysed.gov/repcrdfall2003/cir/500402060000.pdf

NYSUT, New York State United Teachers, 2001. *New York State United Teachers Guide to the New Standards for Parents: Grade 4 ELA Test.* Retrieved September 24, 2005, from http://www.nysut.org/standards/102-parents-ela.pdf.

Osbourn, J. (2005). Gifted children. Retrived July 7, 2005 from http://schoolnet.lij.edu/eshare/files/1_gifted.html

Patton, J. M., Prillaman, D., & Van Tassel Baska, J. (1990). The nature and extent of programs for the disadvantaged gifted in the United States and territories. *Gifted Child Quarterly* 24, 94-96.

Powell, T., & Siegle, D. (2000). Teacher bias in identifying gifted and talented students. *NRC/GT Newsletter.* The National Research Center on the Gifted and Talented. University of Connecticut. 13-15.

Psychological Coproration (2001). *Wechsler Individual Achievement Test-Second Edition.* San Antonio, TX: Author.

Reid, C., Udall, A., Romanoff, B., & Algozzine, B. (1999). Comparison of traditional and problem solving assessment criteria. *Gifted Child Quarterly,* 43(4), 252-264.

Renzulli, J. S. (2004). Myth: The gifted constitute 3-5% of the population. In J.S. Renzulli (Ed.) *Essential Reading in Gifted Education.* (63-70). Thousand Oaks California: Corwin Press, Inc.

Renzulli, J.S. (2002). Emerging conceptions of giftedness: Building a bridge to the new century. Exceptionality, 10(2), 67-75.

Renzulli, J.S., Smith, L.H., White, A.J., Callahan, C.M., & Hartman, R.K. (1976). *Scales for rating the behavioral characteristics of superior students.* Mansfield Center, CT: Creative Learning Press.

Reyes-Carrasquillo, A. (2000). The culturally and linguistically diverse school population in the United States. In G. B. Equivel & J. C. Houtz (Eds.). *Creativity and Giftedness in Culturally Diverse Students.* (3-28) Cresskill, New Jersey: Hampton Press Inc.

Richert, E. (1987). Rampant problems and promising practices in the identification of disadvantaged gifted students. *Gifted Child Quarterly* 31(4), 149-154.

Rimm, S., & Davis, G.A. (1976). GIFT. An instrument for the identification of creativity. Journal of Creative Behavior 10(3), 178-182.

Rohrer, J. C. (1995). Primary teacher conceptions of giftedness: Image, evidence, and nonevidence. *Journal of the education of the gifted.* 18(3), 269-283.

Roid G. M. & Miller, L. J. (1997). *Leiter International Performance Scale- Revised.* Wood Dale, IL: Stoelting Co.

Roid G. H. (2003). *Stanford-Binet Intelligence Scales, Fifth Edition.* Itasca, IL: Riverside Publishing.

Rushton, J. P., & Rushton, E. W. (2003). Brain size, IQ and racial-group differences: Evidence from musculoskeletal traits. *Intelligence* 31(2), 139-155.

Salvia, J., & Ysseldyke, J.E. (1995). *Assessment* (6th ed). (381-383). Boston, MA: Houghton Mifflin Company.

Sarouphim, K. M. (1999). DISCOVER: A promising alternative assessment for the identification of gifted minorities. *Gifted Child Quarterly.* 43(4), 244-251.

Sarouphim, K. M. (2001). DISCOVER: Concurrent validity, gender differences, and identification of minority students. *Gifted Child Quarterly*. 45(2), 130-137.

Sarouphim, K. M. (2002). DISCOVER in high school: Identifying gifted Hispanic and Native American students. *The Journal of Secondary Gifted Education.* 14(1), 30-38.

Sarouphim, K. M. (2004). DISCOVER in middle school: Identifying gifted minority students. *The Journal of Secondary Gifted Education.* 15(2), 61-69.

Sattler, J. M. (1992). *Assessment of Children Intelligence and Special Abilities- Third Edition.* San Diego: Author.

Sattler, J. M., & Hoge, R. D. (2006). *Assessment of Children: Behavioral, Social, and Clinical Foundations – Fifth Edition.* San Diego: Author.

Smith, J., LeRose, B., & Clasen, R. E. (1991). Underrepresentation of minority in gifted programs: Yes it matters. *Gifted Child Quarterly*. 35(2), 81-83.

Stephens, K., & Karnes, F. A. (2000). State definitions for the gifted and talented revisited. *Exceptional Children.* 66(2), 219-238.

Sternberg, R. J., Grigorenko E. L., & Kidd, K. K. (2005). Intelligence, race, and genetics. *American Psychologist.* 60(1), 46-59.

Sternberg, R. J. (2004). Culture and intelligence. *American Psychologist.* 59(5), 325-338.

Sternberg, R. J. (2000). Multicultural issues in the testing of abilities and achievements. In G. B. Equivel & J. C. Houtz (Eds.). *Creativity and giftedness in culturally diverse students.* (105-125) Cresskill, New Jersey: Hampton Press Inc.

Sternberg, R. J. (1993). Procedures for identifying intellectual potential in the gifted: A perspective on alternative "metaphors of the mind". In K. Heller, F. J. Monks, and A. H. Passow (Eds.), *International handbook of research and development of giftedness and talent* (pp. 187-287). Oxford: Pergamon.

Swerdlik, M.E. (1992). Review of the Otis-Lennon School Ability Test (6th ed.). In J.J. Kramer & J.C. Conoley (Eds.), *The eleventh mental measurements yearbook.* Lincoln, NE: The Buros Institute of Mental Measurments.

Torrance, E. P. (1974). *Torrance tests of creative thinking: Norms and technical manual.* Princeton, NJ: Personnel Press.

U. S. Department of Education, National Center for Educational Statistics. (2003). *Status and trends in the education of Blacks.* Washington D.C. Author.

Walsh, W.B., & Betz, N.E. (1995). *Test and Assessment* (3rd ed.). (182-183). Englewood Cliffs, NJ: Prentice Hall.

Wechsler, D. (2003). *Wechsler Intelligence Scale-Fourth Edition.* San Antonio: The Psychological Corporation.

Wechsler, D. (1991). *Wechsler Intelligence Scale-Third Edition Manual.* San Antonio: The Psychological Corporation.

Weiss, L. G., Prifitera, A., & Roid, G.H. (1993). The WISC-III and the fairness of predicting achievement across ethnic and gender groups. In B. A. Bracken & R. S. McCallum (Eds.), *Journal of Psychoeducational Assessment monograph series, advances in psychoeducational assessment: Wechsler Intelligence Scale for Children-Third Edition* (35-42). Germantown, TN: Psychoeducational Corporation.

Woodcock, R. W., McGrew, K. S., & Mather, N. (2001). *Woodcock-Johnson III.* Itasca, IL: Riverside Publishing.

Woods, S. B., & Achey, V. A. (1990). Successful identification of gifted racial/ethnic group students without changing classification requirements. *Roeper Review.* 13(1), 21-26.

Wong, S. Y., & Wong, P. R. (1989). Teaching strategies and practices for the education of gifted Cantonese students. In C.J. Maker & S.W. Schiever (Eds.), *Critical issues in gifted education: Defensible programs for cultural and ethnic minorities* (pp. 179-181). Austin, TX: Pro-Ed.

Appendix I

Grade 2 ETC Rubric

Name_____ Date_____

	4	3	2	1
*Test of Cognitive Ability (Percentile)	90-95%	80-89%	70-79%	69% or below
* Teacher Recommendation *(Raw Score)*	90-100	80-89	70-79	69 or below
*ETC Teacher Recommendation *(Raw Score)*	90-100	80-89	70-79	69 or below
ELP	3 or more levels above grade level	1 or 2 levels above grade level	On grade level	Below grade level
Parent Nomination *(Raw Score)*	65-72	58-64	50-57	49 or below

*Double Weight: Test of Cognitive Ability
Teacher Recommendation
ETC Teacher Recommendation

Entry into ETC program: Total Score 28/32

Automatic entry into ETC program: 96-99th percentile on the Test of Cognitive Ability

Appendix II

Encouraging Thinking Teacher Checklist

Child's Name_____ Date___/___/___

Teacher_____

Key:	4-Almost Always	3- Frequently	2- Seldom	1- Never

Asks probing questions related to the topic at hand.	4	3	2	1
Readily offers logical solutions to problems.	4	3	2	1
Recognizes relationships and makes generalizations.	4	3	2	1
Recalls information that has been heard or read.	4	3	2	1
Applies information that has been heard or seen.	4	3	2	1
Notes details and is quick to see similarities and differences.	4	3	2	1
Displays great curiosity about objects, situations or events.	4	3	2	1
When interested in a subject or task may become absorbed for long periods and be impatient with change or distraction.	4	3	2	1
Answers go beyond the literal level and reflect higher thinking skills.	4	3	2	1
Shows an interest in printed material.	4	3	2	1
Uses and extensive vocabulary easily and accurately.	4	3	2	1
Creative Thinking				
Is venturesome, wants to take risks and try new things.	4	3	2	1
Has keen sense of humor, recognizes humor in situations that others don't.	4	3	2	1
Offers unexpected, "out of the box", or "silly" answers.	4	3	2	1
Extends and builds on new ideas and/or work of others.	4	3	2	1
Uses art to express feelings and experiences in unusual ways.	4	3	2	1
Asks provocative questions and challenges authority.	4	3	2	1
Generates large number of ideas relating to a given topic.	4	3	2	1
Social Development				
Is able to work independently.	4	3	2	1
Works cooperatively with students of varying ability levels.	4	3	2	1
Has a high energy level.	4	3	2	1
Is looked to by peers for decision-making.	4	3	2	1
Communicates clearly and effectively through spoken words, facial expressions and/or body language.	4	3	2	1
Takes charge during interaction with peers and can be stubborn about own ideas.	4	3	2	1
Sensitive to the feelings of others and tries to be helpful.	4	3	2	1

Based on your classroom observations and interaction with this child, please list the behaviors or characteristics of the child that prompted you to recommend him/her for enrichment. Try to provide specific examples, if possible. (Use the back of this page)

Appendix III

ETC

Parent Nomination Form

Parent Name_____ Child's School_____

Child's Name_____Child's Grade_____

Instructions: Please check a numbered column for each item which describes your child.

1= Rarely 2= Occasionally 3=Frequently 4=Almost Always

My Child:	1	2	3	4
1. Will spend much time and energy on a topic of his/her interest.				
2. Is a "self starter" who works well alone, needing few directions and little supervision.				
3. Sets high personal goals and expects to see results from his/her work.				
4. Gets so involved with a project that he/she gives up other pleasures to work on it.				
5. Thinks quickly.				
6. Continues to work on a subject even when faced with temporary defeats and slow results				
7. Suggests imaginative ways of doing things.				
8. Avoids typical ways of doing things; tries new ways to approach a problem or topic.				
9. Uses common materials in ways not typically expected.				
10. Likes to "play with ideas", often making up situations which probably will not occur.				
11. Is a "doer" who begins a project and sees it through to completion.				
12. Often finds humor in situations that are not obviously funny to most children his/her age.				
13. Wants to know how things work.				
14. Asks reasons why—questions almost everything.				
15. Has a great deal of curiosity.				
16. Has along attention span.				
17. Has hobbies and /or collections.				
18. Reads extensively.				

Please feel free to make any additional comments, including talents, interests, and special activities which pertain to your child.

Parent's Signature_____

Date_____