FOUR YEARS LATER: PERFORMANCE OF PRIMARY STUDENTS IDENTIFIED FOR GIFTED PROGRAM SERVICES THROUGH AN ALTERNATIVE PROCEDURE

by

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(Under the Direction of MARY M. FRASIER)

ABSTRACT

Through a mixed-methods study, I compared the performance of two groups of students at the end of 5th grade who had been identified for gifted program services in the first grade. One group was identified by traditional state guidelines and the other group was identified by an augmented procedure which included their performance in a thinking skills curriculum designed for primary students. Results garnered from fifth grade GPA reports, achievement test data, student attitude surveys, and teacher interviews demonstrated that there were no significant differences between the two groups of students on their GPAs, total reading achievement scores, attitudes toward school, and the teacher interviews. Significant differences were found on the students' total math scores and total battery scores, both basic and complete.

Implications from these results include the efficacy of using performance during planned activities requiring cognitively complex, higher levels of thinking as a criterion for eligibility for gifted program placement. Further research is indicated to clarify the benefits of early identification of giftedness especially for minority and lower socioeconomic status students and the need to collect as much information as possible when determining eligibility for gifted program services.

In addition, there were several other implications for further research which were not posed by this study. They included the need for better curriculum planning in order to investigate the strengths and weaknesses of our gifted children. No longer could teachers assume that all gifted students had even skills development. All teachers need to reflect on their attitudes toward and expectations of giftedness in students. They also need help in recognizing the need for challenge and differentiation in the regular educational program for gifted students. Finally, there is a need to help teachers clarify any confusion they may have about the characteristics that describe a good student versus those that describe a gifted student.

INDEX WORDS: qualitative, gifted identification, alternative assessment, thinking skills, primary education, longitudinal

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DEDICATION

To the memory of my cousin, Dr. Monica Hennessey Rogers, who encouraged me to continue my studies for a doctorate. “Remember, Mary Terry, getting a doctorate is like eating an apple-one bite at a time.”

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PREFACE

Background

I have been a teacher for 38 years in a large urban school system in the southeastern United States. For the last 24 years, I have been a gifted education resource teacher at Meadowdale Elementary School. Over these 24 years I have became increasingly concerned about the discrepancy between the racial makeup of the participants in the gifted program and that of the general school population. The overwhelming majority of the identified gifted students were White and from middle or high socioeconomic backgrounds, and on average, at least 40% of the school's student population was from ethnically diverse backgrounds. Surely there had to be more students from these backgrounds who were capable of meeting the eligibility criteria. I began to suspect that total reliance on test scores may be one of the factors putting these students at a disadvantage.

Growing evidence from research which suggests that intelligence is not a one-dimensional construct belied the fact that our school was continuing to decide eligibility on the basis of standardized test scores only. In addition, because our gifted program began serving students when they were in the second grade, we were also operating contradictory to best practices which suggested that the earlier gifted potential was identified, the better. Early identification was deemed to be particularly critical for children who came from backgrounds that could or did not provide them with learning experiences in an enriched environment. Finally, there were problems to contend with related to the difficulties of identifying gifted potential in very young children; relying on tests had not proven to be as reliable a process as it needed to be with this age group.

In 1994, the state of Georgia adopted SBOE rule 160-4-2-.38 which stipulated that multiple criteria would be used to determine gifted program eligibility (see Appendix A). This rule, revised in 1997 and officially adopted in 1998, reflected current findings where it was concluded that intelligence was a multidimensional construct that could not be adequately evaluated using only a standardized measure of mental ability and of achievement.

While we would continue to identify and serve highly-gifted children who scored well on standardized tests, it was believed that the addition of creativity and motivation measures would allow us to legitimately expand our view of giftedness by including behaviors that also reflected high levels of creative problem-solving and evaluative thinking. Interestingly, teachers had already noticed such thinkers; they referred to them as the "quirky" thinkers.

My Approach

But would the use of multiple criteria improve our ability to identify these students who were being overlooked? I knew that tests could not be relied on as reliable measures of gifted potential in very young children. I also knew that early identification was universally recommended as a best practice. In addition, our school system's Gifted Coordinator was under increasing pressure to address the discrepancy in the number of participants who came from ethnically diverse backgrounds compared to their presence in the school system. That is, of the 53,000 students enrolled in the school system, 92% were Blacks and other minority students; only 8% were White. Yet, 35% of the 3, 197 students eligible system-wide for gifted program placement were White.

I knew that I would have to find other methods for observing and evaluating gifted potential in young children. The adoption of a multiple criteria approach to identify children as eligible for gifted program participation set the stage for trying a new approach.

I found a program-- *Primary Education Thinking Skills* (PETS) (1997) developed by Merritt, Nichols, Thomson, and Wolfe that was made-to-order for primary children. This thinking skills program presented the higher order thinking skills of deduction, analysis, creative problem-solving, visual-thinking, and evaluation in a fairy tale setting. It suggested to me a plausible way to use curriculum to observe for and evaluate the demonstration of gifted behaviors in young children. I developed an augmented identification model based on the PETS program that I called the Talent Development Program (TDP)

I arranged with the principal and the first grade teachers to work with the traditionally identified gifted students in their classroom primarily to lessen the disruptions created by having these students leave their classroom to come to the resource room. The classroom teacher and I decided to involve all the students in the classroom as this would be less disruptive and more efficient. As I got into presenting the curriculum, I soon realized that some relevant gifted behaviors were being demonstrated by students who had not been nominated for gifted program testing and by students who had been tested when they were kindergartners but had not met eligibility. Being a habitual note taker, I began to jot down notes about these students. I placed these notes, along with the work samples they completed in my class in individual folders.

Classroom teachers had typically nominated children for gifted program participation who were the good readers, those who were advanced in mathematics, highly motivated, eager to please and/or were well-behaved. When I mentioned to the classroom teachers some of the behaviors that the unidentified children were demonstrating, they were amazed. They could not believe that these heretofore unrecognized children had produced the work samples I shared with them. They were encouraged to look at these children in a new light and began using some of my materials themselves so that they could join me in also encouraging their children's display of gifted behaviors.

It has been seven years since I first began this program which was introduced in the five first grade classes. Eleven students who normally would not have qualified or even been nominated were identified as eligible for gifted program participation using the TDP. The 11 students who had been identified using the TDP participated in the gifted program through the fifth grade. This study describes the TDP procedure and reports on the results obtained when I examined the performance of the eleven students identified using the TDP model with the ten students who were identified using the traditional identification criteria.

CHAPTER I

INTRODUCTION

Educators and policy makers have long been concerned about the lack of diversity in gifted programs (Baldwin, 1977, 1994; Borland & Wright, 1994; Ford & Harris, 1990; Frasier, 1997; Frasier, Garcia, & Passow, 1994; Maker & Schiever, 1989; Passow, 1982; Richert, 1987; Smith, LeRose & Classen, 1991; and Van Tassel-Baska, Patton, & Prillaman, 1989). This lack of diversity is particularly evident in the limited number of students from minority, socio-economically deprived, and/or limited English proficiency backgrounds who participate in gifted programs.

More recently, there is evidence that this lack of diversity among gifted program participants is a continuing national concern. For example, Pfeiffer (2003) solicited views from a national panel of experts in the field of gifted education to get their perspective on recent and emerging concerns and trends in gifted education. Among the most frequent categories mentioned was the need to develop new identification procedures to decrease the under-representation of gifted minority students in programs. Specifically, the concern was with the disproportionate number of potentially gifted children of color, economic disadvantage, or both and children who are female, linguistically different, handicapped, or from rural communities who were not being adequately identified and served. Further, Ambrose (2002) has suggested that gifted educators must be persistent in their maintenance of efforts to look for the hidden socioeconomic influences on aspirations, motivation, and talent development so that they can be better prepared to engage in critical activism for deprived high-potential children

Related to problems associated with the under identification of children from minority, socio-economically deprived, and/or limited English proficiency backgrounds for gifted program services is the general lag in identifying gifted children at a young age. Several researchers have called attention to the need to identify potentially gifted children as young as is possible (Karnes, Shwedel, & Linnemeyer, 1982; Shaklee, 1992; Schweinhart, 1993). This is an even more critical problem for children from minority, socio-economically deprived, and limited English proficiency backgrounds for as Clark (1997) has observed, the performance of these children tends to decrease the longer they are in school.

The Problem

Numerous reasons have been advanced to explain the under-representation in gifted programs for children from certain backgrounds. Consistently, these reasons have included the still prevailing narrow view of intelligence as a one-dimensional construct, the use of standardized testing measures that are not appropriate for some children and the use of screening methods that depend on nominations and referrals by classroom teachers who may not be as informed as they should be about the relevant behaviors that indicate gifted potential. Another rationale for under-representation alludes to the masking effects of low socioeconomic status on talent recognition

Multiple Criteria

Since the mid 1980s, there have been revolutionary changes in the methods by which we identify gifted behaviors. Much of the theory behind these changes has come from researchers like Gardner (1983,1986), Renzulli (1978, 1988), and Sternberg (1981, 1982, 1988) who both champion the concept of giftedness as a multidimensional

construct that requires the use of multidimensional assessments. This has led to the increased use of multiple criteria as a way to recognize gifted potential in populations that do not fare well on tests and as a way to more closely align identification with curriculum.

Standardized Tests

It is fairly well agreed that using traditional methods to assess for gifted behaviors does not work for all students. For example, relying on test scores has not been sufficient to recognize gifted potential in many students, especially those students from culturally, linguistically, and economically diverse groups. Yet the IQ remains "the most universally advocated and used criterion for the identification of giftedness" (Shore, Cornell, Robinson, & Ward, 1991, p. 53). This continues to be so despite the fact that Shore, et al., go on to assert that the major impediment to the identification of culturally, linguistically, and economically diverse students is the overwhelming dependence on test criteria based on middle class reading skills in the language of the majority group.

Teachers

One of the solutions proposed to address the lack of diversity among gifted program participants was to better prepare teachers to make valid and reliable nominations and referrals for gifted program services. For example, classroom teachers in my current school typically nominated children who were the good readers, were advanced in mathematics, seemed to be highly motivated and eager to please and were well-behaved. Given the increasing diversity in our school population, teachers needed to be better prepared to recognize and be sensitive to the potential gifted abilities in students from culturally, linguistically, and economically diverse backgrounds

Socioeconomic Status

Data from the National Educational Longitudinal Study of eighth grade programs for gifted students (USDOE, 1991) indicated that students whose families' socioeconomic statuses placed them in the top quartile of the population were about five times more likely to be in programs for gifted students than were students from families in the bottom quartile. Ambrose (2002) stated that an awareness of the suppressive effects of socioeconomic deprivation on talent development puts the responsibility on all who influence public policy to ensure that all children, especially those who are deprived, have access to adequate primary goods such as educational opportunities and adequate health care. He further advised that educators of the gifted must recognize that deprivation does indeed stunt aspiration development which, in turn, undermines talent development. Consequently, they must work harder to find potential within children by using alternative methods of identification for these children's motivation to achieve is often undermined by oppressive outside forces.

Testing Young Children

The problem of recognizing gifted behaviors in culturally and socially different populations is particularly critical in young students. In general Roedell, Jackson, and Robinson (1980) stated that very young students rarely can be relied upon to demonstrate the best performance of which they are capable during the various phases of a test session. Borland (1994) contended that this is "even more true for young students whose intellectual and experiential stimulation has been minimal and inconsistent" (p. 165). He further asserted that looking for signs of advanced performance precludes the use of

matrices or any other process involving the averaging of data because this method might tend to give too much weight to students' weaknesses rather than emphasize their strengths. The use of multiple and varied indicators increase the probability of early recognition of potential for advanced performance in young students, regardless of background.

Promising Trends

Alternative Assessments

Alternative assessments has been defined by Clark (1997) as "any way of showing growth, finding out what a student can do, and informing instruction that differs from standardized or traditional testing" (p. 427). Thus, increased attention is being given to performance, authentic, portfolio, dynamic, situated or contextualized, and curriculum-embedded assessments (Garcia & Pearson, 1994) as legitimate ways to collect data from multiple sources when seeking to identify gifted potential.

Alternatives to standardized testing, especially with young children, have focused on exhibited behaviors that go beyond paper and pencil methods of responding (Hatch & Gardner, l986; Gardner & Hatch, l989; Malone & Moonan, l975; Silverman, Chitwood, & Waters, l986; Treffinger & Renzulli, l986). Observing behaviors that are gathered within the child's educational and/or familial setting has also been advocated as a viable assessment method to use with young children (Treffinger & Renzulli (1986). This method allows a child's classroom teacher and family to play a vital role in creating a holistic picture of a child's potential for gifted performance.

Dynamic Assessment

Dynamic assessment (Feurstein, 1979) has been recommended as an alternative

assessment method which encourages teachers to provide increasing amounts of scaffolding to determine which tasks students can complete independently and which they can complete with varying levels of assistance. According to Bolig & Day (l993), advocates of dynamic assessment activities differentiate between static measures of ability such as traditional IQ tests that assess how much a child has learned with dynamic measures which test ongoing learning or how easily new knowledge and skills are acquired. Dynamic assessment is thus recommended as a viable way to identify children's learning abilities, determine what and/or how to teach them, assess giftedness in minority and poor children, control for individual differences, and explore different domains of giftedness in children. Advocates argue that using both static and dynamic assessment measures provide much more information than either one alone.

Portfolio Assessment

Another alternative to standardized testing is a performance-based assessment known as portfolio assessment. This type of assessment has been offered as an alternative or supplement to traditional standardized assessment tools.

In order for a portfolio to be considered authentic, it must include demonstrations of authentic tasks. It is not just a folder of students' tests and work. Rather it is a purposeful collection of student work that demonstrates a student's effort toward attaining specific instructional goals. It should be noted that the purpose of portfolio assessment is to show process as well as product and to show growth over time. In addition, portfolio assessment has demonstrated a method to offset the negative aspects of standardized testing by personalizing evaluation and producing structures for individualized learning (Arter & Spandel, 1992; Grady, 1992;Jongsma, 1989; McClure,

1992;Moss, 1994; Wiggins, 1991; Wolf, 1991). Portfolios provide a multidimensional view over time of a child's performance in the classroom. And finally, they can take into consideration the societal issues that impact a student's life.

Assessing Creativity and Motivation

More and more, researchers are recognizing the importance of including the assessment of creativity and motivation as an important component in the gifted identification process. Assessments in these two areas also provide a useful tool to obtain behavioral information about children within their educational context (Georgia's Revised Rule 160-4-2-38; Moran, l988; Quattrocki, l974; Treffinger & Renzulli, l986; Torrance, 1981).

Creativity Testing

The assessment of creativity is noted as an important part of the identification process for young children because such tests measures imagination and inventiveness. Young gifted children can be highly imaginative and can generate many original ideas and solutions to problems (Clark, l997; Frasier, l995). Their creativity may be evidenced in their original or unusual uses of everyday materials (Frasier, l995). Risk-taking behavior, another aspect of creativity, is often demonstrated by potentially gifted young children in their openness to new ideas and experiences (Renzulli, l983). They tend to be more adventurous in action and in inquiry because of their high level of curiosity.

The advantage of a creativity test is that it does not focus on knowledge that might or might not have been learned. Instead, creativity tests focus on assessing children's unique use of their imagination. It provides an opportunity for children's talents and imagination to be demonstrated, aspects of ability that are not be adequately

identified when using traditional methods of assessment. *Thinking Creatively in Action and Movement* (Torrance, l981), is an example of one such measure that can be used to assess gifted potential in young children. This test provides a play-like atmosphere for assessing young children's fluency, flexibility, originality, and elaboration.

Motivation

Several researchers have noted that young gifted children show high levels of motivation in task commitment, particularly when the task is of interest to them (Renzulli, l983; Silverman, l988; Wolfle, l989). Their attention span as well as their energy level tends to be longer than other young children demonstrating perseverance, endurance, and determination. They may show high ability and intense interest in a single area as well as in a single activity.

Significance of the Study

As has been discussed, problems associated with identifying potentially gifted young children are challenging because of problems related to educators' and others understanding intelligence as a multidimensional construct, relying on the use of standardized testing, and teachers' abilities to recognize gifted behaviors. These challenges are even more critical when issues related to the under-representation of students from minority, socio-economically deprived, and/or limited English proficient backgrounds are included. Methods of identification that rely on one measure of performance or that do not make appropriate adjustments for the diverse population of students we serve in our schools today are no longer tenable and are wasteful of talent. Information must be gathered from multiple sources and teachers must be prepared to recognize and be sensitive to potential gifted traits in students from diverse backgrounds.

This study is significant in that it investigates the effectiveness of an augmented identification procedure to tap the gifts and talents of young children, especially those who come from culturally, socio-economically deprived, ethnically, and linguistically diverse backgrounds. Two groups of children, one identified using the traditional procedure and one using an augmented assessment procedure will be evaluated to ascertain any differences in performance. It is expected that the use of this augmented procedure will facilitate the recognition of the gifted potential of children who have otherwise gone unnoticed and that these children will perform the same as or better than the children using the traditional procedure. See page 21 for a full description of the TDP.

Purpose of Study

This study reports on the performance of two groups of children, one group identified using the traditional procedure and the other using an augmented identification procedure. The goal of this study was to draw inferences from the data that may help to improve the process of recognizing gifted potential in young students, especially those from culturally, linguistically, and economically diverse background. Data collected at the end of a five year period will be analyzed to address the following research questions:

1. How do the students in the two groups, those identified using traditional guidelines (Group 1) and those identified using an augmented identification procedure (Group 2), compare academically on traditional measures?
2. How do teachers' observations of the gifted traits, aptitudes, and behaviors (TABs) of the students in Groups 1 and 2 compare?
3. How do self-reported attitudes toward school-learning of the students in the two groups compare?

CHAPTER 2

THE DEVELOPMENT AND IMPLEMENTATION OF THE TALENT DEVELOPMENT PROCEDURE (TDP)

In this chapter, I will outline the steps followed in my development of the TDP. Included in this discussion is a description of the traditional identification procedure used by my school. This system consists of the referral, nominations, and assessment procedures and how the Eligibility Team makes its decisions. TDP modifications to this traditional system are noted.

Traditional Identification Procedure

The traditional identification procedure required by the state of Georgia at the time this study was initiated allowed two ways for students to meet eligibility requirements for gifted program services. The first method (Method 1) required that students score at the 99th percentile on a test of mental ability. The second method (Method 2) required that students perform at the prescribed level in three out of the following four criteria: (a) a mental ability test score at the 96th percentile or above (b) a standardized achievement test score at the 90th percentile or above, (c) a score on a standardized measure of creativity at the 90th percentile or above, and (d) a score on a standardized measure of motivation at the 90th percentile or above. Method 2 is referred to as the multiple criteria method.

While the two methods were available in 1997, only Method 1 was used in my school system at the kindergarten level. Method 2, which requires a standardized measure of achievement, was not available for our students until the end of their 1st grade year.

Therefore, the only kindergarten students who could receive gifted program services in my school system had to achieve the 99th percentile on Otis Lennon School Ability Test (OLSAT) which was the screening our school system used.

The Nomination Process

The nomination process used in my school system consists of teachers using the *Traits, Aptitudes, and Behaviors checklist* (TABs) (Frasier, 1992) to screen children who would be referred for further assessment. This checklist consists of 10 traits, aptitudes and behaviors associated with the giftedness construct. A complete description of this checklist is included in Chapter IV. TABs' observations are conducted twice a year, in the fall and in the spring, for a two week period. The classroom teacher observes the students in her classroom and notes the names of the children who show unusual ability in any of the ten TABs categories. Any child whose name appears in at least five of these categories is referred to the Eligibility Team.

Eligibility Team

At the time this study was initiated, my school's Eligibility Team consisted of three gifted education teachers; two classroom teachers; one special subjects teacher (i.e., art, music, foreign language, physical education), and one administrator. At the Kindergarten level, this Team meets and reviews the TABs data on nominated students for accuracy and completeness. The Team then nominates potentially eligible students for testing using Method 1. As noted above, only Method 1 was considered for eligibility determination because achievement test data were not available.

The Impetus for Developing the TDP

In 1997 I made a decision to modify my gifted program delivery model for my first graders from five weekly sessions in the Resource Room to two weekly sessions in the regular classroom and three in the Resource Room. I made this decision because of my concern for the instructional time being lost when my students moved from their regular classroom to the resource room and back. I was losing over an hour a week in instructional time.

On the two days that I worked in the regular classroom, the teacher and I decided that I would work with all of the first grade students. We felt this would be less disruptive and more efficient. While we did not necessarily expect that the non-identified gifted students would be able to handle the lessons at the same level as the identified gifted students, we did feel that they could benefit from this enriched instruction. As has been frequently noted by Dr. Joseph Renzulli, "a rising tide lifts all ships".

On the two days that I taught in the regular classroom, I used a higher level thinking skills program called the *Primary Education Thinking Skills* (PETS) (1997). This program, developed by Merritt, Nichols, Thomson, and Wolfe (1997) presents the higher order thinking skills of deductive logic, analysis, inventive thinking, creative thinking, judging, and mental manipulation of shapes in a fairy tale setting. Table 1 illustrates the behavioral characteristics that are observed for each thinking skill. On the checklist, marks are noted for each student when a behavior is demonstrated. A (v) is used if the student's behavior is correct but normal, a (+) if the behavior is not only correct but very unusual, and a (-) if the behavior is not on target or is unrelated to the story. In addition, different colors are used for each lesson

The limitations of Method 1, which relied on a single test score to determine eligibility for gifted program services, started to materialize. I began to notice that several of the unidentified students, were performing in the PETS curriculum as well as or better than some of the identified gifted students. These unidentified students included some of those who had been tested when they were kindergarteners but did not achieve the 99th percentile on the Otis Lennon School Ability Test (OLSAT). My notes on their performance and my review of their work samples on the two days that I worked in the regular classroom documented their exceptional performance. I began to speculate that the information I was collecting might facilitate the identification of some of these children who had been missed as potential candidates to receive gifted program services.

The performance peaks of some of the students suggested to me that the PETS program could provide a plausible way to use it as a curriculum base for observing and evaluating the demonstration of gifted behaviors in young children. That is, it could be used as a curriculum-embedded assessment procedure to recognize gifted potential. These observations led to my development of the Talent Development Program (TDP, an augmented identification procedure).

The Talent Development Program (TDP)

As conceptualized, the TDP used a curriculum-embedded assessment process to document the performance of potentially eligible students who would then be referred for observations using the TABs. In order to bring the TDP into compliance with the normal procedure for making referrals for TABs observations, two units in the PETS program were used as the base for noting relevant behaviors These two units focused on deductive

thinking and inventive thinking skills. These skills were chosen because they encouraged students to demonstrate their ability to reason deductively, verbally and creatively at a high level of proficiency. They also were consistent with the skills that are typically noted when observing for gifted potential. A description of the two units follows.

Unit 1, Detective Thinking

This unit focuses on deductive/convergent thinking. Students are taught that there is one and only one right answer to a problem. To arrive at this answer they must learn how to put together many pieces of information in order to find this one right answer. They are cautioned that they may not see the answer right away but will need to reflect on the clues and be patient or not jump to conclusions. As noted in Table 1, the skills that are observed are: grasps concepts very quickly, sees interrelations of clues, draws relationships between lesson and outside information, defers judgment, intuitively sees answers, and displays a long attention span.

Unit 2, Inventive Thinking

This unit introduces students to divergent production. Here they are informed that there may be many correct responses to a problem or situation, that it is important to see things creatively, and that piggybacking on the ideas of others is desirable. As noted in Table 1, the skills that are observed are: lists many responses (fluency), offers off-beat and/or original ideas (originality), easily elaborates or expands on an idea (elaboration), changes course—starts new category or responses (flexibility), displays an unusual/mature sense of humor, and advanced vocabulary.

Components of the TDP

Component 1: The PETS units are presented to the students two days a week in the regular classroom. Using the PETS behavioral checklist the classroom teacher and I (the researcher) place marks on the checklist when a student demonstrates a behavior for which we are observing. I completed my notations as soon as was possible at the end of the lesson so that my instruction would not be interrupted by my making notations. A plus (+) was noted for each high level response. In deductive logic a high response included an unusual ability to listen carefully for an extended period of time and to remember clues and put them together. In inventive thinking a high response included offering off-beat and original ideas and starting new categories. A checkmark (v) was noted if a response was okay but not unusual and a minus (-) was noted if the response was not relevant to the topic being discussed.

At the end of each week the classroom teacher and I would meet to formatively discuss our observations. At the completion of the units, the classroom teacher and I would meet to make our final decisions regarding the students we felt should be observed using the TABs. If a child's behavioral responses during the two units were rated plus (+) at least 8 times by me and the classroom teacher, then our recommendation was that the student should be observed with the TABs. To further support our recommendations, we reviewed and evaluated the work samples to determine those that we agreed were above-average.

Component 2: Students are evaluated on the TABs. As noted earlier, TABs

evaluations are a normal part of the traditional procedure for identification. During this evaluation the students are observed for two weeks across all of the activities in which Component 2: Students are evaluated on the TABs. As noted earlier, TABs evaluations are a normal part of the traditional procedure for identification. During this evaluation the students are observed for two weeks across all of the activities in which they engage during the day. A student whose name appears in at least 5 of the categories on the TABs is nominated to the Eligibility Team.

Component 3: Each student's information is reviewed by the Eligibility Team. After the TABs are gathered and tabulated on the nomination log designed by my school system (see Appendix B), the Eligibility Team meets and reviews the teachers' nominations. If a child had not been tested previously in Kindergarten and there are sufficient TABS (5 or more) to support it, a referral for gifted program assessment is made. The child may qualify using either Methods 1 or 2. If a child has 5 or more TABs, was tested for gifted program services in Kindergarten, and did not meet eligibility criteria under Method 1, then the Eligibility Team also recommends the child for assessment using Method 2.

Component 4: If a child scores at the 99th percentile on the Otis Lennon School Ability Test, then s/he meets eligibility for gifted program services according to Method 1. If a child does not meet eligibility according to Method 1, then s/he is further evaluated using Method 2.

Under Method 2, Multiple Criteria, data must be collected in the four categories: mental ability, achievement, creativity, and motivation. The measures listed for each of the categories used by my school system in 1997 consisted of (a) mental ability—the Otis

Lennon School Ability Test (OLSAT) (b) achievement—the Iowa Test of Basic Skills (ITBS), (c) creativity—The Renzulli Hartman Scale of Creativity, and (d) motivation—The Renzulli-Hartman Scale of Motivation.

Under Method 2, a child who only meets criteria in two of the four multiple criteria categories, is reconsidered by the Eligibility Team. The Team considers the evaluations made on the PETS behavioral checklist and on the work samples. The final decision is made on the quality of the PETS evaluations. That is, while referrals for TABs' observations for children were made on the basis of 8 pluses (+) on the PETS behavioral checklists, the Eligibility Team's recommendation for placement is based on the child having received at least 12 pluses (+) on these checklists.

Summary of the TDP Procedure

The TDP, an augmented identification procedure, was designed as a form of authentic assessment where relevant behaviors denoting giftedness are observed as the curriculum is being implemented. The TDP procedure has four major components that are integrated into the traditional identification process:

- Part 1 – Results from the PETS behavior checklists and work samples are evaluated. Students with the prerequisite number of pluses and above average work samples are referred for TABs evaluation.
- Part 2– TABs screening takes place. Students are observed over a two week period. Those students whose names appear in at least 5 different categories are referred to the Eligibility Team.

- Part 3 –The Eligibility Team makes recommendations for testing. After data on each student are reviewed, students who were not tested in Kindergarten are referred for testing and may qualify under Methods 1 or 2. Students who were tested in Kindergarten and did not meet eligibility using Method 1 are referred for assessment using Method 2.
- Part 4- Testing for gifted program services takes place. Each student is assessed on all four of the criteria specified in Method 2. Students who meet criteria using Method 1 (99^{th} percentile on the test of mental ability) or Method 2 (meet requirements in three out of the four criteria) are scheduled for gifted program services pending parental approval.

On the next page is a table which explains the six thinking skills presented in the PETS program. I changed the order of the thinking skills to accommodate my students' learning styles and maturity level. In addition to the list of thinking skills, there is an analysis of the characteristics which can be observed in students who demonstrate a high level of ability in each of the areas.

Table 1: Higher Level Thinking Skills in the PETS

Thinking Skill	Characteristics Observed
Deductive Thinking: Deductive Logic/ Convergent	• grasps concepts very quickly • sees interrelations of clues • draws relationships between lesson and outside information • defers judgment • intuitively sees answers • displays long attention span
Inventor Thinking: Inventive Thinking/ Divergent	• Lists many responses (fluency) • Offers off-beat and/or original ideas (originality) • Easily elaborates or expands on an idea (elaboration) • Changes course—starts new category or responses (flexibility) • Displays an unusual/mature sense of humor • Advanced vocabulary
Scientist Thinking: Analysis/ Convergent	• Quickly and accurately identifies attributes • Creates classification systems that work • Demonstrates unique strategies for analyzing • Gathers and weighs all data before deciding on an answer—defers judgment • Draws relationships between lessons and outside information • Recognizes flawed reasoning
Yarnspinner Thinking: Creative thinking/Convergent	• Offers many ideas (fluency) • Uses colorful words to create visual images (flexibility) • Uses phrases rather than single words to express ideas (elaboration) • Offers original responses to create visual images (originality) • Displays an unusual/mature sense of humor • Uses advanced vocabulary
Magician Thinking: Visual/Spatial Perception	• Grasps concepts very quickly • Combines visual clues to solve a problem • Comments indicate an ability to manipulate shapes mentally • Defers judgment • Intuitively sees answers without intermediate steps
Judge Thinking: Judge/evaluative	• Grasps concepts very quickly • Draws valid conclusions based upon considerations developed in the lesson • Logically supports responses • Sees more than one viewpoint • Offers unique solutions and/or considerations • Displays long attention span

CHAPTER 3

REVIEW OF THE LITERATURE

The concern of this research study was with young school children who showed early signs of gifted potential and authentic assessment strategies which provided opportunities to better assess their gifted potential and support their maximum development. This review of the literature provided findings relating to the development of children with gifted potential, characteristics of gifted young children based on checklists and other measures, standardized testing issues with young children, creativity assessment, and behavior identification through authentic assessment. Another issue which was important to this study was concerned with research on the identification of gifted behaviors among young children of culturally, linguistically, and economically diverse backgrounds and the lack of adequate programming for young gifted children

Development of Giftedness

The literature relating to the development of young children with gifted potential emphasized the use of checklists detailing gifted characteristics in the areas of cognition, affective development, creativity, and motivation. However this literature was sparse because of the limited research in this area. According to Feldman (l982), "the virtual vacuum of research concerning the development of giftedness is tragic" (p.33). This was partly due to the prevailing early childhood educational attitude that young children need more socialization at this age than special services (Smutney, 1999).

Nonetheless it was important to note that, although researchers have applied knowledge about the development of average young children to explain the development

of gifted young children, young gifted children do not fit into any one homogeneous group. There were some common characteristics which differentiated young gifted children from their average peers, but each child is unique and does not necessarily fit into each category.

Cognitive Development

There were several theories regarding the differences in the ways gifted children think and learn. Some researchers used Piaget's theory as a framework and suggested that gifted children move through his stages at a more rapid rate than their average peers (Gowan & Bruch, l971; Webb, l974; Clark, l997). Others also looked to Piaget's developmental stages but stressed that, within a specific stage, gifted children outperform their average peers on certain tasks (Shigaki & Wolf, l980). In some instances, very young gifted children used the logical thought necessary for specific formal operations tasks. Although young gifted children performed at a higher level on more difficult tasks, there was more variability within this group across tasks than within a group of nongifted children. This again would seem to point out that, although young gifted children are different from average preschoolers, they are different from each other as well and do not fit into any one category as far as their talents and gifts are concerned.

Research also suggested that advanced cognitive development is a result of accelerated growth of brain functioning and a continuous and integrated use of these functions (Clark, 1997). According to Gowan and Bruch (1971), in spite of some variations in their learning rates for certain tasks, young gifted children may have already reached the concrete operational stage by the age of five. This means they are able to

understand concepts such as class, numbers, space, and time, as well as relationships between concepts.

Still other researchers, including Gowan and Bruch (l971), believed that gifted children move at an accelerated pace through Erikson's stages of personality development as well. By age five, they suggested that these children have arrived at the stage of "industry versus inferiority." This included manipulation, building basic skills, and peer group formation, rather than an emphasis on play, fantasy, and self-importance. Also, at this stage, children have achieved autonomy and are working on acquiring new skills and showing pride in their newly achieved goals.

Accelerated language development and advanced literacy in young gifted children was apparent as evidenced in early interest in words and symbols, the complexity of stories selected and enjoyed by these children, and by early reading (before school) (Harrison,2004). She used the testimony of young gifted children and their families as a means of explaining how these children think and perceive their giftedness.

Language played a central role in cognitive development because it allowed for social interaction which facilitates learning. Also, young gifted children realized differences in the way they learn from the way others learn. They used this knowledge to self-monitor and to problem-solve. Vygotsky (1978) used the term "private speech" to demonstrate the way a young child becomes emotionally involved in accomplishing a task. In order to become more involved and to facilitate accomplishment of an activity, young children often use private speech to plan strategies and self-monitor. Berk (l986) further stated that brighter children use the technique of private speech more often than average children. This may be due to their ability to put their actions or reasoning into

words. As they grow older, this "private speech" becomes “inner speech” as children monitor themselves mentally with silent verbal thought rather than audible speech.

Young gifted children also tended to demonstrate a superior ability to acquire, retain, and retrieve information (Clark, l997; Frasier, l995). They also were more effective at the problem solving process. Sternberg (l981) observed that they were more adept at recognizing a problem, generating solutions, using resources, and evaluating solutions in a systematic way. Further, Sternberg explained that the young gifted child could execute the processes involved in the performance component of problem solving, that is encoding, application, inference, and justification of solutions, at a rapid rate and more successfully than their peers whether the problems require analytical thinking or memory and attention.

Rogers (1986) reviewed differences in the cognitive style of gifted children in four areas: learning style, field independence/dependence, locus of control, and hemispheric specialization. In the summary of her findings, she noted the work of Dunn and Price (1980) which suggests that gifted learners prefer a more formal classroom design, less structured materials, auditory and kinesthetic presentations, less responsibility for the achievement of their peers, and the opportunity and time to complete tasks. She also observed that gifted children are also more field independent and more active in their learning and, thus, more self-motivated and responsible for their own learning. Quite often these children have less need for content structure and are willing and sometimes prefer to work and learn on their own. Since they learn more independently, Rogers summarized researchers’ description of gifted children as having an internal locus of control. That is, they take responsibility for their own failures as well

as their own successes. Finally, Rogers also raised questions about whether gifted learners use a sorting approach or an integrated approach when processing information. She maintained that sorting of visual information tends to occur in gifted learners at an early age(Olson, 1978) and suggested right hemispheric dominance; however a more integrated approach was more generally associated with creatively gifted children.

Affective Development

In the affective domain, the gifted child may behave more age normal, but their gifted potential may differentiate them from their peers in the development of social traits related to cognitive thought. That is, they tended to be less ego-centered than their average peers and more sensitive to their own needs as well as to those of others (Perez, l983; Silverman, l988). They also seemed to be more responsive to moods and body language than their peers. They could often tell when an adult was not being truthful with them or trying to hide a problem.

Several researchers have discussed areas in which a child may show advanced development in the affective domain. For example, Maslow (1971) developed a hierarchy of needs to explain emotional development where the eventual goal is self-actualization or the full recognition and development of one's talents and gifts. He advised that, in order to enable children to progress toward self-actualization, classrooms must be set up to emphasize diversity, exploration, contemplation, and interaction. Maslow also outlined a number of characteristics common to self-actualized individuals. According to Maslow, these persons generally experience each moment fully with total concentration, consider life as a set of choices, trust their inner voices, take responsibility for their own actions, take risks, perform each action with joy and enthusiasm, perceive the world

positively, and endeavor to know themselves and their weaknesses as well as their strengths. Although young children have probably not progressed a lot toward self-actualization, they may exhibit some of these characteristics as a result of socioemotional advancement.

Maslow's self-actualizing traits overlapped some of those describing the cognitive style of gifted children because the cognitive advancement of these children allowed them to understand themselves as separate from others and as having different needs. In other words, these young students tended to be more aware, perceptive, and realistically oriented, and also more accepting of themselves, others, and the natural world. This self-acceptance could come from their having a more internal locus of control or their awareness that they are responsible for and capable of success. They tended to be more intrinsically motivated and autonomous in their actions and their learning, demonstrating a more field independent cognitive style. They often preferred to be alone for periods of intense concentration. Finally, it has been noted that creativity and flexibility characterize these gifted children who are also capable of rich emotional reactions and a freshness of appreciation for new experiences.

A positive self-image has been noted as a characteristic of children who are advanced in the affective domain. However, gifted children who are more average in this area may experience difficulties with self-esteem because they are different from their friends. Gifted children also tended to be perfectionists which can, in turn, influence self-esteem since these children have high expectations for themselves. If they lack the motor skills or physical maturity to achieve a goal which they have set for themselves, they can become frustrated (Adderholdt & Goldberg, 1999).

An example of social maturity that is linked to cognition is the development of prosocial and altruistic behaviors. Some theorists proposed that these behaviors arise from social experience. They also suggested that the manner and frequency with which prosocial behaviors are exhibited depends on intellectual level. Children with gifted characteristics are more able to reason about prosocial issues.

A final characteristic of gifted children in the affective domain is leadership. Feldhusen and Kennedy (l988) said that the development of leadership skills involves the acquisition of a knowledge base in a particular domain and of leadership skills themselves. Gifted children seemed to be effective leaders due to their abilities in the areas of critical thinking, creativity, problem solving, and higher order thinking skills.

Creativity Development

Researchers, especially Rimm(1983), suggested several creative tendencies that may be present in young gifted children. Her development of PRIDE , a preschool and kindergarten interest descriptor, outlines several attitudes common to young creatively gifted children. These include many interests, curiosity, independence, perseverance, imagination, playfulness, humor, and originality. PRIDE was designed for parental observation of their children as a screening instrument for gifted programs. It is also a good means of heightening parental awareness of creative behaviors in young children with the hopeful outcome that the parent would then acknowledge and encourage creativity in their children.

It is important to observe for creativity, especially in young children, because their cognitive skills are still in the early stages of development. Their imaginary play and creative expressions could provide insight into their other abilities as well. It is possible

for a child, for example, to be of average intelligence but highly creative. However highly creative children also possess certain cognitive functions, such as reasoning and mental representation, which are also signs of giftedness. Some researchers, such as Feldman(1982), included creativity in their definition of giftedness. Further, Feldman asserted that creativity as an outgrowth of that giftedness.

Children demonstrate various types of creative behaviors at different ages. The type and level of their creativity depend on their experience, their physical development, and also their cognitive development (Amabile, 1989). Very young children may show their creativity through singing inventive songs, drawing, building while experimenting with different materials, and experimenting with sounds and instruments. As young children mature, their creativity may be seen through dancing, painting or combining colors in new ways, playing with sounds and meanings of words, and inventing and playing imaginary characters as they play.

Amabile (1989) further asserted that problem solving involves the creativity process in all four steps, beginning with problem finding. Once the problem has been defined, resources and data are gathered which will help solve the problem. The next stage of problem-solving is the generation of many ideas and possibilities, no matter how wild and seemingly impractical. Since judgment of ideas is withheld in this stage, creative talent is allowed free rein. Finally, the validation stage of problem-solving proceeds with testing the various possibilities and ideas. Young children can be encouraged and observed demonstrating their engagement in the creative process especially when they are in a flexible classroom that encourages independence, acceptance, and creativity.

Characteristics of Gifted Young Children Based on Checklists

Many checklists exist outlining the characteristics of gifted young children. Most of them noted traits in the cognitive and affective domains, as well as creativity and motivation. Cognitive abilities included strengths in the areas of memory, reasoning, inquiry, insight, and communication skills. In the affective area, such traits as sensitivity, self-awareness, humor, and leadership were often included. Also, noted were discussions dealing with creativity and imagination as well as motivational issues such as attention and task commitment.

Cognitive Characteristics

Young gifted children can think in the abstract as well as understand more complex and unusual cause/effect relationships (Clark, 1997; Frasier, 1995; Malone & Moonan, 1975). They are also able to generalize, which points to their early development of conceptual thought.

Memory development of young gifted children seemed to be more advanced. They had early and excellent memory capacity (Silverman, 1988) as far as quantity of information stored and the retention of that information (Clark, 1997; Frasier, 1996). They were more likely to acquire, retain, generalize, and connect memory strategies or problem solving skills because they have been effective before in using these strategies. They were also able to apply theses strategies to similar problems.

Some researchers, notably Clark (1988) and Plowman (1987), have noted advanced communication skills in young gifted children. That is, many read earlier and developed vocabulary at an earlier age that their peers. They often read words and

interpreted signs which were aimed at older children thus leading to their sharing more interests with and friendship with this group.

Affective Characteristics

Gifted children were not necessarily advanced in every aspect of their development. In fact, this has been observed quite often especially in the area of social and emotional maturity (Gowan & Bruch, 1971; Clark, 1997). Usually, this aspect of their development fell between their chronological age and their mental age but closer to their chronological age. A child's development, gifted or not, is full of peaks and valleys. This uneven development can lead to more intense problems for gifted children and may lead to frustration and perfectionism (Perez, 1983). Possibly due to gifted children's advanced cognitive awareness, they were much more aware of their inabilities to perform tasks. Their physical limitations may contribute to their avoidance of more challenging activities.

Another concern with the uneven cognitive and affective development of young gifted children is that they often are more sensitive, at an earlier age, to worldly and moral issues of peace and justice, poverty and hunger (Perez, 1983; Silverman, 1988). Their advanced understanding of these problems can be frightening because they often do not have the emotional maturity to deal with these fears. They may become very distressed, especially if their fears are dismissed by adults who want to shield them and keep them innocent. Roeper (1977) advised that young gifted children naturally lose their innocence about the world earlier because they are less egocentric than their age peers.

Heightened sensitivities and advanced cognitive abilities may encourage leadership ability in young gifted children. Their unusual degree of sensitivity to the

feeling and needs of others plus their abilities in critical thinking and problem-solving, often make them effective leaders especially if they also possess high degrees of creative risk taking.

According to Perez (1983) and Silverman (1988), gifted young children often have a highly developed sense of humor. That is, they sense incongruities in situations, enjoy word play, funny sounding word combinations, riddles, puns, and absurd and impossible situations. They take illogical behavior much more seriously because they actually understand that it is illogical. However, the young gifted child often does not have the emotional maturity to realize that many complex, adult jokes are not appropriate for every occasion which can cause them problems when interacting with adults.

Creativity

Creativity is difficult, if not impossible, to define. We all know it when we see it, but we also have trouble defining it. Clark (1992) said that it is best defined as a holistic concept, including the rational, emotional, talent, and intuitive aspects. Although, as has already been discussed, the link between giftedness and creativity is vague, young gifted children can be highly imaginative and generate many original ideas and solutions (Clark, l997; Frasier, l995). Their creativity may be evidenced in their original or unusual uses of everyday materials (Frasier, l995). Risk-taking behavior is an aspect of creativity often demonstrated by gifted children in their openness to new ideas and experiences (Renzulli, l983). They tend to be more adventurous in action and in inquiry because of their high level of curiosity.

One of the dangers in recognizing creativity in young children, according to Cramond (2001), is that many of the behaviors that identify creativity in these children

also can be used to identify learning and/or behavior problems. The child who is different may be misdiagnosed as having Attention Deficit Hyperactivity Disorder (ADHD). Both highly creative children as well as ADHD children tend to daydream, be impulsive, take risks, have poor social skills and generally difficult personalities. Both groups also demonstrate high energy levels and higher levels of sensation seeking behavior.

The early childhood teacher who is in tune with this conundrum in the overlapping of creative behavior and ADHD behavior will do the highly creative child (or any child for that matter) a great service simply by being careful not to place an ADHD label on the child too quickly. Also, the most important thing that the teacher can do for this child is simply to recognize and encourage creativity. By offering a safe haven for the highly creative child to express new ideas and to take risks without fear of rejection or ridicule is vital to this child's self-esteem and builds confidence. The creative child learns to accept his different feelings as valuable in an adult's eyes

Motivation

Most gifted children show evidence of motivation in task commitment, particularly when the task is of interest to them (Renzulli, l983; Silverman, l988). Their attention span as well as energy level tends to be longer than other young children, as they demonstrate perseverance, endurance, and determination. They may show high ability and intense interest in a single area as well as in a single activity. In general, teachers of young gifted children observed that these children were highly motivated to pursue their interests beyond what the teacher may have expected for the task and for the child's chronological age. In some instances, young gifted children were seen to go further than their peers in tasks set by the teacher. By extending themselves in this way,

they distinctly set themselves apart from their classmates. The notions of task commitment, tenacity, and perseverance are considered manifestations of this motivation and also of the perfectionism and competitiveness associated with gifted children shaping their environment (Libby, 1999).

Concerning intrinsic motivation of gifted students, Amabile (1989) and Gottfried & Gottfried (1996) viewed intrinsically-motivated students as students who accept challenges willingly, show persistence in difficult tasks, exhibit curiosity, remain task-committed, and reflect satisfaction with their efforts regardless of the views of others. Raffini (1996) defined intrinsic motivation as the desire to seek and conquer challenges. He also said that intrinsic motivation is driven by students' psychoacademic needs to control their own decisions (autonomy); to do things that help them feel successful (competence); to feel a part of something larger than themselves (belonging and relatedness); to feel good about who they are (self-esteem); and to find pleasure in what they do (involvement and stimulation).

Use of Standardized Testing with Young Children

The growing acceptance of intelligence as a multiple construct requiring multidimensional assessments is particularly relevant when evaluating the performance of young children, the population of concern in this research study. The National Association for the Education of Young Children (NAEYC) (l988) proposed that several criteria should be considered and emphasized when using standardized tests with young children. First, the purpose of the testing must be to improve services for children and to ensure that they benefit from their educational experience. Second, a single test score must never be used as the basis for major educational decisions; rather these decisions

must be based on multiple sources of information. Third, administrators and teachers should use test scores only for the purpose for which they are intended and they should be able to interpret test results accurately. Finally, those who actually conduct the testing should be sensitive to the needs of young children and qualified to administer such tests. Reinforcing these considerations, Kaufman & Harrison (l986) also emphasized that IQ scores should never be the sole criterion for placement in any program and that cut-off scores should be used to include, rather than exclude. Further, they felt that a standard error of measure should be reported in terms of range rather than a single score.

Among the recognized standardized tests of intelligence, the Stanford-Binet and the Wechsler do have somewhat positive histories of reliability and validity for use with young children (James & Tanner, l993; NAEYC, l988; Roedell, Jackson & Robinson, l980). The Stanford-Binet has been, by far, the most widely used and the most valid test to use because of it long history and its high correlation with giftedness in adulthood as shown by Terman (1921) in his longitudinal study of genius.

However, there are some weaknesses inherent in this test which may make it suspect for very young children. For example, although time limits are suggested, the examiner may have to rely on judgment in the enforcement of these limits. In addition, an effort to keep the testing time down to 60-90 minutes was made by offering abbreviated batteries which could affect test reliability. Finally, norming samples for some age groups are inadequate especially younger children.

The Wechsler Intelligence Scale for Children, 3rd edition, (WISC-III) is another well-known psychological test of mental ability. It has a verbal and a performance component and does sample a broad-range of cognitive skills. However, it is a very long

test for many young gifted children, and the ceilings of several of the subtests appear to be inadequate for this group (Kaufman, 1992; Robinson & Chamrad, 1986). In addition, some of the test questions may be culturally biased which causes concerns when trying to measure ability in diverse populations of children.

Whatever the methods or tests used for assessment, it must be remembered that they only provide a portion of the information needed to understand and provide for the needs of young children. While both the Binet and the Weschler offer important information, neither can present the entire picture of a child's potential and ability. It is vital for the child's sake to obtain the most accurate and comprehensive profile possible. This recognition to not rely on a single measure to assess ability has led to growing recommendations to seriously consider alternative assessment measures.

Alternative Assessment Strategies

Those who argued for alternative ways to assess student performance did so for many reasons. A significant and always mentioned reason was “to reduce or eliminate the pernicious influence tests exert on the lives and well-being of students, particularly low-income students” (Presseisen, Smey-Richman, & Beyer, 1992). To counter the perceived negative impact of traditional assessment approaches, primarily standardized tests, current recommendations include such approaches as authentic classroom assessment and performance assessment (Wiggins, 1992).

Clark (l997) said that alternative assessment is "any way of showing growth, finding out what a student can do, and informing instruction that differs from the standardized or traditional test." (p. 427). Alternatives to standardized testing, especially with young children, have been proposed in the literature. These studies have focused on

exhibited behaviors that go beyond paper and pencil testing. (Hatch & Gardner, 1986; Gardner & Hatch, 1989; Malone & Moonan, 1975; Silverman, Chitwood, & Waters, 1986; Treffinger & Renzulli, 1986). Others discuss the importance of an enriching environment as a necessity for discovering emerging talents (Feldman, 1980; Gallagher, 1979; Kitano, 1982; Hatch & Gardner, 1986; Gardner & Hatch, 1989).

In order to make the identification procedure more accurate and comprehensive with young children, researchers consistently advised a more varied identification approach. Several studies have emphasized the importance of recognizing creativity and motivation as part of the gifted identification process and also of obtaining behavioral information within the child's educational context (Moran, 1988; Quattrocki, 1974; Treffinger & Renzulli, 1986). As a result, state guidelines like that of Georgia (Revised Rule 160-4-2-.38, 1997), specifically state that children should be assessed in four different areas, including mental ability, achievement, as well as creativity and motivation.

Assessment practices that do not fit into the category of formal assessment have many labels (Garcia & Pearson, 1994). Some of the labels included performance assessment, portfolio assessment authentic assessment, alternative, assessment, curriculum-embedded assessment, and the like. Educators have struggled to distinguish these methods from the formal assessment tradition of standardized assessments. Their main concern has been that these types of approaches to assessment will be viewed as too informal and therefore less desirable.

Portfolio assessment

Of particular interest to this study is a performance-based assessment known as

portfolio assessment. This type of assessment has been offered as an alternative or supplement to traditional standardized assessment tools.

In order for a portfolio to be considered authentic, it must include demonstrations of authentic tasks. It is not just a folder of students' tests and work. Rather it is a purposeful collection of student work that demonstrates a student's effort toward attaining specific instructional goals. It should be noted that the purpose of portfolio assessment is to show process as well as product and to show growth over time. In addition, portfolio assessment has demonstrated a method to offset the negative aspects of standardized testing by personalizing evaluation and producing structures for individualized learning (Arter & Spandel, 1992; Grady, 1992;Jongsma, 1989; McClure, 1992;Moss, 1994; Wiggins, 1991; Wolf, 1991). Portfolios provide a multidimensional view over time of a child's performance in the classroom. And finally, they can take into consideration the societal issues that impact a student's life.

Authentic Assessment

Another popular assessment of the abovementioned alternatives is authentic classroom assessment. The distinctive features of assessments of this type are that they are situated in the classroom, designed by the teacher, and used to evaluate student performance within the curriculum context (Calfee & Hiebert, 1991). Authentic classroom assessment overlaps with curriculum-embedded assessment (and others also) which emphasize the importance of a close match between assessment and instruction.

There are several advantages to authentic assessment. First of all, this type of assessment does not inhibit the teacher's use of a variety of methods to assess and diagnose the learning of students whose styles of learning and thinking may not fit the

standardized testing mode (Darling-Hammond & Goodwin, 1993). Another advantage is that authentic assessment allows the teacher to use cultural adaptations as a means of assessing student performance. By recognizing the students' cultural resources, a teacher might present curriculum that openly reflects cultural values and thus honor the students' culture as worthwhile.

A third advantage of authentic assessment is its inherent flexibility. There are no set rules for how a child should be assessed, no already written down prescription. For example, in order to find out what a limited English proficiency child knows, it is important to use the child's native language as well as English for language skills assessment (Garcia, 1992). If, in fact, we want to know what a student knows or how well the student has learned a concept, then it makes sense to take advantage of this flexibility.

This flexibility also allows the teacher to document the issues that they regard as important for their students. Assessing linguistically diverse students in both their native language and in English will allow the teacher to know how these students interpret vocabulary and material based on their cultural and English-language experiences. In addition, dialect-speaking Black students should have their writing evaluated separately on their dialect features from their ability to develop an essay in an acceptable style.

Disadvantages to the use of authentic assessment include requiring teachers to be aware of or knowledgeable about not only the academic domains being assessed but about students' cultures and languages (Garcia & Pearson, 1991). Teachers who are not aware of what to expect from linguistically diverse students may misdiagnose a difficulty in English pronunciation as symptomatic of serious learning problems in English. In addition, a Black student's use of dialect may be viewed as a lack of comprehension.

Another disadvantage is the possible lack of fit between mainstream cultural expectations in terms of discourse conventions. If the cultural background of the child does not fit with the teacher's culture, there may be misunderstandings about what the student actually knows, thereby creating a critical assessment problem. Many culturally-diverse students, for example, may be reluctant to participate in classroom story discussions because of their disconnect in understanding what is expected from them. A simple question about what is happening in a story may cause surprise and consternation to the child who is not used to school-like questions (Heath, 1982).

Finally, cultural conventions for working in cooperative groups and working alone may cause some problems of interpretation for teachers. If a certain cultural group emphasizes task-completion as a group effort, then the expectation that a task must be accomplished alone might result in misinterpretation by the teacher. That is, children's desire to work together on tasks may be interpreted by teachers to mean that they want to cheat or want to get out of doing the assignment (Delgado-Gaitan, 1987).

Creativity Assessment

Creativity testing is recommended to be a part of the identification process for young children, primarily because creativity tests measure imagination and inventiveness, which do not depend on prior experience or exposure. The advantage of using creativity tests with young children, in particular, is that they do not measure things that a child may or may not have had the opportunity to learn. Traditional measures of aptitude have been criticized because getting many of the items correct appears to depend on children's experience or exposure to certain concepts or objects. Creativity tests provide an opportunity to discover the talents and imagination of children that are difficult to

identify using traditional methods of intelligence assessment. Creativity measures such as *Thinking Creatively in Action and Movement* (Torrance, l981) provide a play-like atmosphere for assessment. This measure gauges fluency, originality, and imagination which are three important parts of the creative process according to Torrance. The test has a high reliability coefficient of .84 which may be due to the nature of the activities as well as the fact that it does not measure intelligence in the young child per se (Whelan, 1998)

Identification of Gifted Behaviors

Since the mid 1980s, there has been a revolution in changing the methods by which we identify gifted behaviors in all children, not just the young child. Much of the theory behind this revolution has come from researchers like Renzulli (1978, 1988), Gardner(1986,1989), and Sternberg (1981,1982,1988) who have championed the concept of giftedness as a multidimensional construct that requires the use of multidimensional assessments.

Treffinger & Renzulli (l986) have offered several basic guidelines for focusing on behaviors as a means of identifying potentially gifted children. For example, they maintain that a variety of techniques should be used over an extended period of time, and that at least some methods should be individualized and provide data for case study. They also concur with Kaufman and Harrison (l986) in recommending that identification be used to guide programming and that labeling should be avoided.

Project Spectrum is a program which merges curriculum and assessment to form a behavioral method for identifying strengths and talents in children (Hatch & Gardner, l986; Gardner & Hatch, l989). In this program, children are provided with interactive

opportunities within the multiple intelligences (Gardner, l983). They are assessed for strengths and weaknesses as they engage in activities designed to address the seven intelligences proposed by Gardner (l983). Studies reporting on findings from this approach include and reinforce the idea that assessment of potential in young children should include a wider variety of information and should ideally be done within a stimulating classroom environment which engages children in interactive activities that allow for the expression of their strengths and talents in numerous areas.

According to Bolig and Day (l993), advocates of dynamic assessment activities differentiate between static measures of ability such as traditional IQ tests that are designed to assess how much a child has learned thus far and dynamic assessment measures which are tests of ongoing learning that measure how easily a child acquires new knowledge and skills. They argued that, together, these two types of measures provide much more information than either one alone. Dynamic assessment can be used to identify children's learning abilities, determine what and/or how to teach, assess giftedness in minority and poor children, control for individual differences, and explore different domains of giftedness in children.

Identifying the Culturally Diverse Student

With the recognition of intelligence as a multidimensional construct, it has been observed that using traditional methods to identify gifted behaviors does not work for all students. That is, relying on test scores has not been sufficient to recognize gifted potential in many students, but especially those students from culturally, linguistically, and economically diverse groups. In fact, Shore, Cornell, Robinson, & Ward, (1991) asserted that the major impediment to the identification of culturally, linguistically, and

economically diverse students is the overwhelming dependence on test criteria based on middle class reading skills in the majority language. Yet the IQ remains "the most universally advocated and used criterion for the identification of giftedness" (Shore, et al, 1991, p. 53). Data from the National Educational Longitudinal Study of eighth grade programs for gifted students (USDOE, 1991) indicate that students whose families' socioeconomic status places them in the top quartile of the population are about five times more likely to be in programs for gifted students than are students from families in the bottom quartile. In further support of this observation, there is the well-documented the low presence number of students from culturally-diverse backgrounds who participate in gifted program services (Baldwin, 1977, 1994; Borland & Wright, 1994; Ford & Harris, 1990; Frasier, 1997;Frasier, Garcia, & Passow, 1994; Maker & Schiever, 1989; Passow, 1982; Richert, 1987, Smith, LeRose & Classen, 1991; and VanTassel-Baska, Patton, & Prillaman, 1989). Add to this the difficulties previously outlined in identifying giftedness in young children, and there is the potential for even greater problems.

Solutions offered to remedy this disparity include the development of new tests and other means such as the use of nonverbal measures. None of these recommendations alone has been found to be sufficient (Frasier, 1989). Recent research into the nature of intelligence and how differing abilities are recognized is leading to more promising solutions. Increased attention is being given to other types of assessment as previously noted in the section on alternative assessment.

A major benefit of using alternative assessment is that it does not inhibit teachers from using a variety of methods to assess and diagnose the abilities of students whose styles of learning and thinking may not fit the standardized testing paradigm (Darling-

Hammond & Goodwin, 1993). Further the flexibility inherent in alternative assessment procedures provides advantages for linguistically diverse students. As Garcia (1992) noted, alternative assessment can be used to document what bilingual students know and can do in both languages. This, he feels, is difficult if not impossible to capture on formal, especially English-only, assessment measures

The problem of recognizing gifted behaviors in culturally and socially different populations is particularly critical in young students. Roedell, Jackson, and Robinson (1980) have stated that very young students can rarely be relied upon to demonstrate the best performance of which they are capable during all phases of a test session. Borland and Wright (1994) contended that this is "even more true for young students whose intellectual and experiential stimulation has been minimal and inconsistent" (p. 165). They further asserted that looking for signs of advanced performance precludes the use of matrices or any other process involving the averaging of data because this method tends to give too much weight to student weaknesses and relatively little weight to their strengths. Multiple and varied indicators increase the probability of early recognition of potential for advanced performance in young students, regardless of background.

Concerns about the lack of diversity in gifted programs have resulted in numerous calls for better ways to prepare and support classroom teachers when they are in the process of making nominations and referrals of students from diverse backgrounds for gifted program services. These teachers need to feel confident in their evaluation of students' strengths and weaknesses. Given the increasing diversity in our school populations, they know they must be better prepared and sensitive to the abilities of students from culturally, linguistically, and economically diverse backgrounds.

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Programming for Young Gifted Students

Historically, young gifted students have not received the same attention as their older counterparts (Smutney, 1999). Much of this is due to early childhood educational practice and belief. The emphasis on the importance of socialization at this age leads specialists in the field to resist the idea that these children need special services. Other excuses frequently cited are funding limitations, difficulty in identification, lack of appropriate programs, and inadequate teacher training. Giftedness is not easy to identify in young children, and many teachers are unable or unwilling to differentiate instruction to meet the needs of the young gifted child in their classroom. Whatever the reasons, this disregard for the needs of young gifted children may have grave long-range implications such as underachievement, maladjustment, and a loss of potential in a talented area of our population.

A strong case for early identification of gifted behaviors and intervention can be made when one sees the young gifted child with a hunger for new challenges become frustrated and bored with the lack of sufficient stimulation in his primary classroom. The extraordinary capacity for reflection, creative thinking, energy, and enthusiasm can be lost in these children, as they learn to ignore their own talents and interests because they are not worthwhile. Admittedly, we have been handicapped by a rather narrow view of giftedness, that emphasized the preeminence of a concept of a high score on an IQ test. Recent research has expanded our view of giftedness beyond the realm of intellectual ability alone such that even the word “gifted” has become obsolete and needs to be changed. According to Gallagher (1991), many children with advanced abilities

especially in areas such as flexibility in creative problem solving often do not receive adequate educational services and, as a result, do not perform well in traditional educational settings. Young gifted children are especially at risk here.

Early identification is often a problem which stops many teachers from going further in helping meet the needs of their gifted children. Young children in particular tend to develop unevenly physically, socially and cognitively so that standard measures of identification may not work well with them. The identification of giftedness in the young child suggests the use of procedures which include testing as well as performance-based assessment. Included in many current identification procedures are parent questionnaires and methods to observe young children as they participate in teacher-directed tasks and self-selected activities. Indications of giftedness which have already been noted are advanced vocabulary, exceptional memory, demonstration of unusual problem-solving skills, desire for perfection, emotional intensity, and an idealistic sense of justice. There are young gifted children whose indicators of gifted potential are not easily recognized. These children may come from culturally, linguistically, and economically diverse environments or may have learning lags or problems (Leibowitz & Starnes, 1993). Reliable information from parents is beginning to be recognized as valid data and thus recommended to be used for identification purposes (Henderson, Jackson & Mukamal, 1993; Mathews & Burns, 1992; Pletan, Robinson, Beringer, & Abbott, 1995). Talent can be identified in many ways as long as schools are willing to use different strategies for identifying it. It is difficult and time-consuming but worth the effort when such alternatives as underachievement and loss of potential are considered.

Summary

This review of the literature pointed to the desirability of a variety of identification strategies in determining gifted program eligibility for all children, but especially for young children. Because of a lack of research on how giftedness develops, there were no clear-cut guidelines on how to determine giftedness in a young child. As a child progressed in his/her educational career, there was more opportunity to assess for different aspects of giftedness. The problem was that not all young children with gifted potential, particularly those from a less-enriched environment or from a low socioeconomic status, could be easily identified using traditional methods of assessment. These children often were mislabeled and neglected at an age when it was vital to expose them to an enriched curriculum in order for them to develop their talents.

CHAPTER 4

METHODOLOGY

Research Design

This was a mixed-methods study designed to examine the effectiveness of an augmented identification procedure to recognize gifted children missed when state guidelines were used. Comparisons were made of the performance of two groups of students, one identified traditionally and the other identified using an augmented procedure. Some quantitative data were collected, that is the students' end of 5th grade grade point averages(GPA) and scores from the *Stanford Achievement Test-Ninth Edition.* However, the bulk of the data was collected from teacher evaluation of the students using the *Traits, Aptitudes, and Behaviors* Checklist (Frasier, 1992), an open-ended interview with the students' 5th grade teachers, and the students' completion of the *Arlin-Hills Attitude Surveys* for elementary school. This attitude survey required students to describe their attitudes toward their teachers, the learning process in general, and toward language arts and math.

Merriam (1998) has offered that the objective of qualitative research is to elicit understanding and meaning from participants. As such, this study involved an interpretative approach aimed at understanding the perspectives of the participants. This qualitative research design allowed the researcher to explore meanings constructed by participants. In addition, the use of an inductive research approach includes a rich description of data (Merriam, 1998). In as much as this study emphasized "learning from people' (Spradley, 1979, p. 3) rather than studying about people, it is an ethnographic study which seeks to know what is happening. Thus, the methodology chosen for this

study allowed me to understand how the teachers of the students in the study groups constructed meaning. It also permitted me to explore the attitudes of the students toward the school-learning process and how they constructed meaning.

Using the mixed methods approach allowed me to use quantitative data to compare the two study groups' scores and grades and qualitative data to come to a more complete understanding of the attitudes of the study participants. According to Viadero (2005), some educational researchers believe that using this approach is helpful in order to answer questions about why a particular intervention works, whether it works better in different settings, and whether it may have any unexpected side effects.

Data Analysis

A goal of this study was to find out if there were significant differences between the performances of two groups of students on several measures. An independent samples paired t-test was used to test for any GPA differences between Groups 1 and 2, group differences in response to the Arlin-Hills Survey, differences in teacher evaluations of student performance on the TABs, and to compare performances between the two on the Stanford-9—total reading, total math, basic battery and complete battery.

The constant comparative method (Glaser and Strauss, 1967) was used to derive meaning from the interviews. This method consists of comparing one segment of data with another to determine similarities and differences that exist. These comparisons are constantly made within and between levels of conceptualization until a theory can be formulated (Merriam, 1998). For example, each student was rated by at least two

teachers and then the interviews and ratings were compared by each of the ten categories and by the two groups.

The steps in the constant comparative method include: 1) collecting data; 2) looking for key issues, recurrent events, or activities in the data that will become the categories of focus; 3) collecting data which provides the number of incidents of the categories of focus by looking for the diversity of the dimensions under the categories; 4) writing about the categories being explored, attempting to describe and account for all of the incidents in the data while continuing to search for new incidents; 5) working with the data and emerging model to discover basic social processes and relationships; and 6) engaging in sampling, coding, and writing focusing on the core categories.

The constant comparative method of analysis consists of three levels. In the first level, open coding, events and interactions from the data are described and compared with others for similarities and differences. After each interview was transcribed, the comments were divided by study groups. This allowed the coding of comments about students according to the study group to which they belonged. In addition, a chart of teacher comments about the students by study group was developed to keep the comments organized and focused. This facilitated the review of student similarities and differences within and between the study groups.

The second level of coding, axial coding, relates to the establishment of subcategories. Comparisons among categories were continuously made until each incident had been categorized. Major themes were established from secondary codes, sub-themes for each major theme were found using tertiary codes. These were applied to the data to determine their appropriateness; themes or sub-themes that had emerged were

kept or put aside. Merriam (1998) advises that tentative categories, properties, and hypotheses continually emerge and must be tested against the data. The researcher must always ask if there are sufficient data to support a certain category and, depending on the response, either retain the category or discard it.

In the third level, selective coding, each theme and sub-theme was combined around a core category. The core categories of data included the teachers' perceptions of the study group students according to the 10 components of gifted behaviors found on the TABs.

Participants and Setting

Student Participants

The participants in this study included 21 students, 12 males and 9 females, 4 of whom were Black and 17 White. They were either 10 or 11 years of age. Two students were eligible for free or reduced lunch. All were born in the area of the city in which the study took place. Ten were identified using the state-approved identification procedure and 11 were identified using an augmented version of the state-approved process. The students' participation consisted of them filling out the attitude survey and releasing their test and grade information.

Below are two charts which describe the students. Each chart includes a pseudonym for the students and includes gender, age, ethnicity, and socioeconomic status. Socioeconomic status was determined by eligibility for free and/or reduced lunch for #1, modest neighborhood and/or apartment dwellers for #2, and upper middle class neighborhoods for #3. Study Group I was the traditionally identified group, while Study Group II was the alternatively identified group. All the students in Group I were white

and 7 of these students were in a high socioeconomic status while only 3 would be in the middle economic status. All students in Group I were identified for gifted program services using Method 1, that is they scored at the 99th percentile on a measure of mental ability at the end of their Kindergarten year. All students in this group began gifted program services at the beginning of First Grade.

In Group II, there were 4 black students and 7 white students. Two of the black students were in the lower socioeconomic status because of their free lunch status. The other 2 black students were in the second socioeconomic status group. Four of the white students in this group were also in the second socioeconomic status while the other 3 white students were in the highest socioeconomic group.

Nicole, Joe, Anna, Danny, and Tim had been nominated and referred at the end of their Kindergarten year. Because of the limitation of assessment data as outlined in Chapter II, none of them had met eligibility. However, as I implemented the TDP during the first semester of First Grade with these children, I soon realized that they had strengths which standardized assessment had failed to identify. Both Nicole and Danny were very creative, while Tim and Joe had strengths in deductive reasoning. Anna was extremely articulate in her reasoning. As a result of my observations and the teachers' input, we were able to use the behavioral checklist information for the achievement component under multiple criteria (Method 2). Each of these children had at least 12 positive checks on their checklists. Since we were able to use this information, all 5 children began gifted program services beginning the second semester of First Grade.

The other 6 children in Group II were nominated based on my collaboration with the First grade teachers using work samples and the behavioral checklists for the PETS

program. They all received at least 8 positive checks and then were observed as part of the TABs process. All were referred for testing by the Eligibility Team during the early Fall of First Grade. Their mental ability scores required that we use Method 2, multiple criteria, for eligibility for gifted program placement. Further analysis of work samples and my behavioral checklist data (at least 12 positive checks) resulted in again using the information for the achievement component under multiple criteria. All 6 children met eligibility with the previously-mentioned 5 children and began gifted program services during the second semester of First Grade. Thus, by the beginning of the second semester of First Grade, the First Grade gifted program had grown from 10 to 21 students. These same students remained at the school through Fifth Grade and formed the cohort for this study.

Table 2: Study Group I Student Descriptions- TI Group

Name	Gender	Age	Ethnicity	SES *
Wayne	M	11	W	2
Charles	M	11	W	3
Eric	M	11	W	3
Susan	F	11	W	3
Sybil	F	11	W	3
Don	M	11	W	3
Jim	M	10	W	3
Seth	M	11	W	2
Elizabeth	F	11	W	2
Dexter	M	10	W	3

* 1 = lower SES, 2 = middle SES, 3 = upper SES

Table 3: Study Group II Student Descriptions –AI Group

Name	Gender	Age	Ethnicity	SES*
Nicole	F	10	B	2
Anna	F	11	B	2
Joe	M	11	B	1
Danny	M	11	W	2
Kenneth	M	10	W	3
Mary	F	11	W	2
Karen	F	11	W	3
Tim	M	11	W	3
Bobby	M	11	W	3
Helen	F	11	W	2
Sharon	F	10	B	1

* 1 = lower SES, 2 = middle SES, 3 = upper SES

Teacher Participants

The five fifth grade teachers, 2 males and 3 females, were the current teachers for the students involved in this study. They were an experienced group with their years of service ranging from 5 to 25 years. All had been at the study-site school for at least the last 2 years. The teachers' participation included (a) completing a rating scale on each of the study-students who were in their classes and (b) responding to interview questions posed by the researcher. Below is a descriptive chart of the teachers in the study.

Table 4: Teacher Profiles

Name	Gender	Ys Teaching*	Teaching Areas	GT Certified
John Brown	M	1	Math / Science	No
Grace Borden	F	15	Soc. Studies/Lang. Arts	Yes
Kate Moore	F	12	Soc. Studies/Lang. Arts	No
Don Morris	M	8	Math/ Tech	Yes
Carrie Robins	F	5	Math/Science	No

* Years at school

Although Mr. Brown has only one year of teaching experience at the school, he is a 20 year teaching veteran in both upper elementary and middle school in the metropolitan area. Both Mr. Morris and Mrs. Borden have significant teaching experience (5 years or more) in other states. Mr. Morris has also been an administrator.

Mrs. Moore and Mrs. Robins have had no other teaching experience. All 5 teachers are white.

At the fifth grade level, the curriculum is departmentalized. Mr. Morris teaches all the fifth grade technology classes so he only teaches his own homeroom for Math.

The Setting

This study took place in a large urban school system in the southeastern United States. This school system serves a very diverse population of students coming from a variety of cultural, ethnic, linguistic and economic groups. The majority of the 53, 000 students in the system is Black (approximately 92%), a group that is also diverse. These students come from a wide range of socioeconomic backgrounds. An ethnic and gender breakdown of the latest statistical information for the school system (2002 school year) reveals that there are 3,197 students who meet eligibility for gifted program services, 1st grade through 12th grade. Of this number, 1,103 were White, 35% of the total number. There were 1,993 Black students, 62% of the students eligible for gifted program services. A third group, "Other" consisted of 101 students whose primary ethnic identification was a mixture of Hispanic, Asian, Indian and those who did not specify their ethnicity. This "Other" group constituted 3% or the identified gifted population.

While the percentage of Black students identified as eligible for gifted program participation (62%) indicates that almost 2/3 of the total gifted population who qualify for services are Black, when compared to the total number of Black students in the system (48,760), this number represents only 4% of that number. However, while there is a total of 4,139 White students enrolled in the system, 27% of that number (1,103) have been

identified as eligible for gifted program resources. This discrepancy points to the critical need to improve our methods to identify more Black students. My study proposed to evaluate the efficacy of an augmented assessment procedure to more effectively identify young gifted students, particularly those from minority groups. It was hoped this process would be instrumental in improving the recognition of gifted potential in these groups.

The school in which data were collected is located in an upper middle class neighborhood. While most of the students who attend this school live in above average neighborhoods, some of them live in more modest neighborhoods as well as in homeless shelters. The school serves approximately 715 students in grades K through 5, with approximately 60% of those students being White and 40% being Black and Others. Although the school, built in 1922, is located in an old site in the area, the building has been well-maintained through renovations, additions, and physical upkeep.
The 60 member teaching staff, a mixture of Black and White teachers, is seventy-four percent White and twenty-six percent Black. Sixteen percent of the staff is male Three of the teachers are from the Caribbean and one is from Spain. There are no teachers on the staff from any other ethnic/cultural backgrounds.

Measures

Several measures were used to collect the data needed to answer the questions posed in this study. Data concerning student behaviors and attitudes toward learning were collected from the students using *The Arlin-Hills Surveys* (Arlin & Hills, 1976). Using a modified version of the *Traits, Aptitudes, and Behaviors Observation Form (TABs)* (Frasier, 1992), teachers were interviewed regarding their observations about the

classroom attitudes of the students participating in the study. Data concerning students' academic performance were collected from the *Stanford-9,* a standardized achievement test., and from students' permanent record files

Arlin-Hills Attitude Surveys

The Arlin-Hills Attitude Surveys (Arlin & Hills, 1976) were designed to investigate students' attitudes toward their teachers, Language Arts, Math, and the Learning Process in general. Survey questions are presented in these four areas at three levels: primary (K-3), intermediate (4-5), and secondary (7-12). The authors report that the surveys appeal to students because they are short (15 questions each) and because they combine a verbal and cartoon format. The students feel comfortable with this format and do not feel intimidated by a format which might be perceived as too "teacherese" and non "kid-friendly."

Scoring

Questions on the Arlin-Hills Survey are scored on a 0-3 basis. Students may earn up to 45 points on each of the surveys. Each question on the surveys has four options, two that are positive and two that are negative. There is no neutral or mid-point response. All questions must be answered. Any questionnaire with more than two answers omitted is not scored. If a students only omits one or two questions, a score of two is given for the omitted questions. The average score for most questions is approximately two, biased in a positive direction.

Positive statements on the surveys are scored from 3 for *agreement* to 0 for *disagreement.* A score of 30 or above on each of the surveys is considered desirable.

Scores from the Arlin-Hills are interpreted for groups rather than for individuals. The authors felt that individual student score interpretation was inappropriate and would raise questions of validity. A major concern along these lines was that if students thought their individual scores would be examined they might tend to answer what they think the teacher wants to hear rather than their true feelings.

Reliability and Validity

Reliability for the four surveys was estimated using internal consistency measures. The sums of the 8-odd items were correlated with the corresponding 7-even items on each survey. These were corrected for length using the Spearman-Brown formula. In addition, scores on the four surveys were added together and correlated to get the Total Test Reliability coefficient.

From the 14,000 students included in the pilot study, a sample of 6,000 students (grades 1-12) was randomly selected to obtain the correlations. Reliability estimates of the four attitude surveys, corrected for length using the Spearman-Brown Formula yielded the following: Teachers, .86; Learning Processes,.90; Language Arts, .83; Mathematics, .88; and total test reliability, .95.

The authors reported the following on their efforts to examine the surveys in terms of face, content, and construct validity. Examination of the cartoons and verbal stems in the surveys indicated a fair degree of congruity between the titles and the items. However, in regard to content validity, the authors concluded that there was no way such a brief instrument could ever adequately assess the domain of items necessary to fully tap each attitude. An attempt at minimal construct validity was made in a multi-trait, multi-method validity study of 402 students (grade 2-6). Results from the multi-trait, multi-

method matrix constructed from the test scores showed support for both convergent and discriminate validity.

Traits, Aptitudes, and Behaviors Observation and Referral Form (TABS)

The TABs, finalized by Frasier in 1992, identify ten basic traits, behaviors, and attributes that are associated with the giftedness construct. These TABs are motivation, interest, communication skills, problem solving, memory, inquiry, insight, reasoning, imagination/creativity, and humor. These characteristics were identified as a result of a study Frasier undertook to develop a multi-group view of giftedness that transcended the problems of recognizing giftedness in children from diverse ethnic, cultural, economic, and language backgrounds. Problems of recognizing giftedness in diverse groups have been particularly troublesome for minority students, especially those who were economically disadvantaged and had limited proficiency in English.

The underlying rationale for the development of the TABs is based on understanding that giftedness is a psychological construct (Hagen, 1980; Hoge, 1988, 1989) wherein a construct is defined as a set of hypothesized traits, abilities or behaviors presumed to have educational or psychological meaning (Sax, 1980). Several researchers (Bernal, 1974; Ary, Jacobs, & Razavieh, 1979; Hagen, 1980; Hoge, 1988, 1989, Frasier, 1990) concur that accurate inferences about giftedness lie in assessment decisions that are based on those indicators that can give the best measure of the giftedness construct. The ten TABs, identified as representation of these indicators, were derived from two major sources: (1) a content analysis of checklists that were specifically designed to recognize gifted potential in children from various minority groups, e.g., Blacks, Hispanics, and Native Americans and in children who were from economically disadvantaged

backgrounds, regardless of culture and ethnicity and (2) an extensive search of the gifted literature from 1950 to the present wherein the typical traits, aptitudes, and behaviors were identified (Frasier, Hunsaker, Frank, Finley, & Lee, 1994; Frasier, 1997). More often, the gifted descriptions in the latter source were of White children, primarily from middle class and above backgrounds. After analyses of data were completed, the *Dictionary of Psychological Terms* (Chaplin, 1985) was consulted for concise definitions of the resulting ten core attributes of giftedness, referred to as the TABs.

To date, evidence from two sources has been used to test the validity and effectiveness of the TABs: dissertation studies and evaluation results from workshops conducted by Frasier in school systems across the country where TABs are being used in their gifted program referral and/or nomination procedures.

Feedback from Workshops

Feedback collected by Frasier on workshop evaluations conducted over the last ten have included comments such as the following from State Directors for Gifted Programs, Gifted Coordinators for School System and individual teachers X: “The TABs have provided teachers with a clearer understanding of what to observe when they are asked to refer students for gifted programs.” “Referral of students, especially from minority, economically disadvantaged and limited English proficient backgrounds, have increased exponentially.” In one instance, a State Director reported that the referral of students from previously underrepresented backgrounds increased by 160% when the TABs were used. A summary of comments by other informants have been that “the TABs have helped teachers and other referrers focus more on ‘what students are doing’ or ‘how they are actually performing and at what level’ and less on the traditional notions

of who should be referred, e.g., the good student, the well-behaved students, the students who always did their work, and the students who came from expected backgrounds, e.g., educated parents, middle class backgrounds." Feedback from respondents, especially those who are members of the cultural or ethnic groups in which children are least recognized as having gifted potential suggested that the TABs did appear to be relevant within and across cultural groups (NRC-GT, 1992) even if their manifestations were different. Finally, many administrators reported that teachers felt freer to make their recommendation since they were not confined to the typical wording of checklist items that often did not conform to what actually happens in the classroom.

Results from Dissertation Studies

Gibson (1994), Martin (1995), and Stone (2000) each sought to determine if the underlying premise of the TABs was valid. That is, are these perceived indicators of the gifted construct recognizable in different cultural contexts even though they may be manifested differently? All three researchers concluded that the TABs were recognizable in the cultural context in which their study was conducted. For example, Martin (1995) who used interviews to examine the applicability of the TABs in the Hawaiian culture related that there were many similarities in the terminology, e.g., inquisitiveness and inquiry. While the TABs definition is pretty straight forward—method or process of seeking knowledge, understanding, or information--the Hawaiian way of saying the same thing was "you find out one thing and you want to know the next thing" or "being persistent in wanting to know." The differences reported were subtle. For example, the manner of student inquiry in the Hawaiian context, would demonstrate their respect for the proper time for questioning, the preference for learning by doing, and the value of

understanding relations by looking for the broader vision which may help them understand what they can see without being given the answer.

Gibson's (1994) study was conducted to determine the applicability of the TABs in the identification of gifted urban Aboriginal students. She concluded that all of the core attributes related to the Aboriginal parents' and teachers' perceptions of giftedness. Gibson's concluded that the TABs were culturally transferable and could be an instrumental tool to ensure the identification of disadvantaged and culturally diverse gifted students in Australia as well as to provide important information needed to design appropriate educational programs for them.

Table 5, below, represents the definitions for the 10 core attributes of giftedness (traits, aptitudes, and behaviors).

Motivation	Evidences an intense desire to achieve. The student strives to satisfy a need or attain set goals
Interests	Intense (unusual interests), activities, avocation. Objects, etc. have special worth or significance.
Communication Skills	Highly expressive and effective use of words, numbers, and symbols
Problem Solving Ability	Effective, inventive strategies for solving problems. A correct sequence of alternatives for goal attainment.
Memory	Large storehouse of information. Innate ability to retain and retrieve information.
Inquiry	Questions, experiments, and explores. Seeks in-dept knowledge and understanding of information.
Insight	Quickly grasps new concepts and makes connections, senses deeper meaning. Sudden discovery of the correct.
Reasoning	Logical approach to figuring out solutions. Forward-looking, goal-oriented thought. Highly conscious, directed, and active.
Creativity	Inventiveness, problem solving through non-traditional patterns of thinking. Produces many ideas.
Humor	Conveys, picks up on humor. Appreciation of the absurd and incongruent. Ability to synthesize key ideas or problems in complex situations in humorous ways. Exceptional timing, gestures.

The Interview

I interviewed each teacher for a minimum of 45 minutes during the week after school ended for the summer while recollections of the students were still fresh in their minds. They were asked to rate the study group students using a modified version of the TABs. All teachers were familiar wit the TABs since this instrument is used in the school system as part of the general screening process to nominate students for possible gifted program testing referral. I modified the TABs evaluation system by using a 1 to 5, instead of a 1-10, likert scale for each construct. Space was provided for comments. Teachers rated their own homeroom students from the study groups as well as any other students from the 2 groups whom they taught. Thus each child was rated at least twice.

The interview was conducted privately and the teachers were assured that their comments would be kept confidential. Teachers were given their TABs evaluations back and were asked to comment on each student and to expand on the comments they had made about each construct. For example, if a teacher rated a student "5" in motivation, the researcher asked the teacher to give specific examples of this quality. The interview was open-ended and casual because the teachers trusted the researcher as a colleague and friend.

The Stanford Achievement Tests-Ninth Edition

The Stanford Achievement Test, Ninth Edition, published in 1997 by Harcourt Brace, was developed to measure students' school achievement in reading, language arts, mathematics, science, and social studies. The test measures student achievement, kindergarten through grade 12, and includes two parallel forms at each level which were designed to be equivalent in both content and difficulty. The Stanford-9 was administered

statewide in Georgia to 3rd and 5th graders. Results from this administration were used to provide the achievement test data on participants in this study.

Reliability

The extent to which a test gives consistent results is known as reliability. For the Stanford-9 tests, several indices are reported : (a) the Kuder-Richardson Formula 20 (K-R20) coefficients and standard errors of measurement for the multiple choice battery and alpha coefficients for the open-ended assessments and multiple-choice/open-ended composite scores; (b) Kuder-Richardson Formula 21 coefficients and standard errors of measurement for all multiple choice clusters, subtests, and totals; (c) alternate-forms coefficients and standard errors of measurement for the multiple -choice battery; and (d) interrater coefficients using the Pearson correlation and the Spearman-Brown Prophecy formula for the descriptive, expository, narrative, and persuasive writing assessments only.

The K-R20 coefficients were in the acceptable range of the mid .80s to .90s for most of the tests and subtests of the full multiple-choice battery. Only the Listening, Language, Science, and Social Science coefficients were in the .70s to low .80s for several grade levels. Alpha coefficients for the open-ended assessments in Reading, Mathematics, Science, and Social Science were considerably lower than their multiple-choice counterparts. Most were in the .60s to low .80s with a few even lower. Coefficients of these magnitudes are not unusual for the types of tasks and scoring rubrics included in these tests. However, when both the multiple-choice and open-ended

assessments were combined, the alpha coefficients for composite scores were in the mid .80s to .90s. Unfortunately, the majority of the coefficients for the Language Composites were a few notches lower in the .70s to mid .80s.

Consistent with the K-R20 coefficients for the multiple-choice batteries the K-R21 coefficients for the subtests mostly range from the .70s to the .90s. Alternate-forms coefficients estimated from the equating of the Form S and Form T sample for the multiple-choice assessment were in the .80s for most of the Total Reading, Total Mathematics, and Language tests, and in the .70s or lower for the remaining tests and Reading and Language subtests. Coefficients for the open-ended assessment were .60s and .70s for most assessments, except writing which ranged from the .30s to the .60s.

The final set of reliability coefficients reported were interrater coefficients for the open-ended writing assessments only. The simple correlations ranged from the .50s to the mid .80s and the Spearman-Brown estimates generally ranged from the .70s to the mid .90s. Both reviewers of the Stanford -9 (Berk, 1997 and Haladyna, 1997) concurred that serious consideration should be given by schools and school districts seeking a comprehensive and psychometrically sound achievement test series.

Validity

Validity is the degree to which a certain inference from a test is appropriate or meaningful. Evidence on the three traditional categories of validity are described in the technical manual: (a) content, (b) criterion-related, and (c) construct. The most important pertains to content-related validity. The items on the Standord-9 were reviewed during the development phase for content, style, and appropriateness for measuring the instructional objectives by a panel of content experts, editors, measurement specialists,

and teachers. However, because validity is contingent on the specific test use and application, the test user in the school or school district must review the test content and compare the Stanford-9 Compendium of Instructional Objectives with the objectives of the school and district curriculum. Once these reviews are completed at the local level, the extent to which the curriculum is taught in the school(s) should be evaluated to determine whether students have the opportunity to learn the content and answer all the questions. The publisher has noted that for most tests (multiple-choice subtests) the completion rates are in the 90s. Only in Mathematics and Science did the rates drop lower and those were only for grades 9 and above.

Related to content validity is bias and/or stereotyping in the item content in terms of gender, ethnicity, culture, socioeconomic status, and geographic region. The entire battery was scrutinized by an advisory panel of prominent minority-group educators to identify objectionable items, which were eliminated or revised. Also, comprehensive quantitative analyses were conducted for gender and Caucasian, African-American, and Hispanic student sample comparisons. Items flagged by this method were reviewed and excluded from the final test forms. All of these are required to assure that the items are valid for all examinees.

Evidence of criterion-related validity was reported in the forms of item statistics, means and standard deviations of scaled scores, correlations between the eighth and ninth editions, and correlations between the multiple-choice and open-ended assessments. The later correlations are the most interesting because it was found that these assessments have less than 60% in common in terms of content and large amounts of content unique

to each measure. The publishers advise that one assessment should not be substituted for the other because both provide significantly different information.

Construct validity evidence is reported as correlations between the multiple-choice subtests and subtests of the Otis-Lennon School Ability Test, which demonstrate the relationship between school achievement and ability. Since the Otis-Lennon is an ability test rather than an achievement test, more information about the constructs measured would have been obtained if there were correlations between another achievement test such as the ITBS.

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GPA

Grade point averages were also collected to answer the first research question. These averages were obtained by getting the end-of-year grades for each of the study group students in seven academic areas: Reading, Grammar and Composition (one grade), Listening and speaking (one grade), Mathematics, Science, Social Studies, and Health. In our school, all students are given whole-letter grades, such as A, B, or C with no pluses or minuses. The grade distributions are: A = 90-100, B= 80-89, C = 70-79, D = barely passing, no numerical equivalent, F = 69 and below.

As I contemplated this choice to use GPAs, I reviewed the research on grades. Several researchers, for example, have concluded that variations in grading among teachers are frequently caused by their tendency to develop their own grading system and philosophy. Their grading procedures most often reflect these individual philosophies (Brookhart, 1993; Frisbie and Waltman, 1992; Manke and Loyd, 1990).

For purposes of this study, however, two assumptions were made to support the

use of the GPA. The main assumption was that the GPA was the one measure that was consistently applied to all students by a stable group of teachers who had been together for a while and had established fairly similar grading philosophies. Also, because the school's philosophy regarding grades was well known and accepted by all of the teachers, it was fairly safe to assume that it was not only embraced by but also incorporated within teachers' personal philosophies. I felt confident that the grades would be assigned fairly, and that differences would reflect students' strengths and weaknesses and not differences in grading philosophies.

CHAPTER 5

FINDINGS AND DISCUSSION

This study came about as a result of my concern that there were students in my school's first grade classes who were clearly demonstrating higher level thinking skills at an exceptional level. Their performance clearly suggested to me their need for and ability to participate in more advanced instructional activities. Even though some of these students had been nominated for participation in the gifted program, they did not meet the criteria for participation established by our state. In order to address this concern, I developed an augmented identification procedure, the Talent Development program (TDP), to investigate it as a procedure that could help in the identification of children who were being overlooked for services in the gifted program.

The purpose of this study was to compare the academic performance and attitudes of children identified by the TDP (Group 2) with their peers (Group 1) who had been identified according to traditional guidelines. Students in Group 2 were approved for participation in our gifted program by my school's eligibility team. Both Group 1 and Group 2 students were continuous participants in my school's gifted program from 1997-2001. Data collected to evaluate the performance of both groups were: results from standardized tests, grade point average (GPA), teacher-completed Traits, Aptitudes, and Behaviors (TABS) checklists, teacher interviews, an students' responses to a survey designed to evaluate their attitudes toward their teachers, learning, language arts, and mathematics. In this chapter results of the data analysis are presented and discussed in relation to the research questions that were posed for this study.

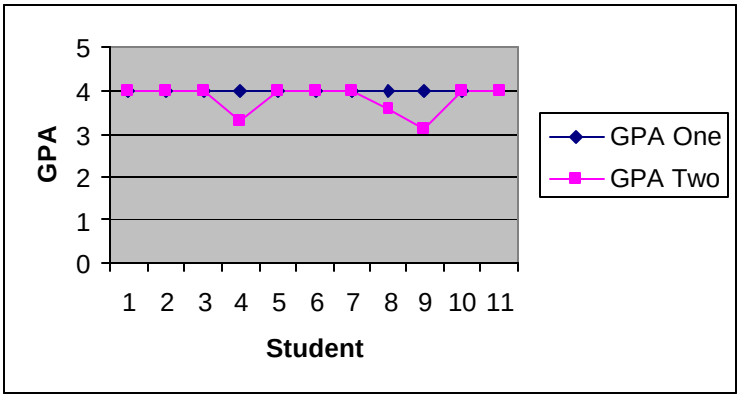
Question 1: How do students identified using traditional guidelines (Group 1) and those identified using augmented identification procedures (Group 2) compare academically on traditional measures

Group comparisons were done of end-of-fifth grade school year. GPAs and results from the spring 2001 administration of the Stanford-9 achievement test were used to respond to question one.

Grade Point Average (GPA)

For purposes of calculating GPAs for use in this study, numerical grades were translated into numbers: A = 4, a B = 3, a C = 2, a D = 1, and an F = 0. A visual display of GPAs for each student in Groups 1 and 2 are shown in Figure 1. As noted earlier, the GPAs used in this study were those that were calculated and collected at the end of the 5th grade school year.

Figure 1: GPA By Group



The mean GPA for Group 1 students was 4.00 and 3.82 for Group 2. All ten or 100% of the students in Group 1 and eight or 73% of the students in Group 2 achieved 4.0 GPAs. The three students in Group 2 who achieved GPAs below 4.0 were Tim, Joe, and Sharon. GPAs for these three (27%) students were 3.1(Sharon), 3.3 (Joe), and 3.6

(Tim). A minimum score of 3.5 GPA is the requirement for gifted program placement so Tim's score did meet this requirement. Thus, for the purposes of this study, all the students in the two study groups with the exception of Sharon and Joe would be considered full achievers (meeting minimum eligibility). As can be seen in Table 6, no statistically significant difference was found between the GPAs for the two groups. In spite of this statistical finding, it should be noted that the mean GPA for Group 2 was lower than for Group 1. Based on the grades awarded however, it appeared that teachers saw little or no differences in the classroom performance between the two groups of students.

Table 6: Comparison of GPAs between Groups 1 and 2

Group	Number	Standard Deviation	Mean GPA Score	t
1	10	.00000	4.0000	1.732
2	11	.33111	3.8182	

p = .099

Stanford Achievement Tests, Ninth Edition (SAT-9)

In 2000 the SAT-9 was adopted by the state of Georgia as the test it would use to evaluate student achievement at the 3rd and 5th grade levels in the spring of the year. The results from the SAT-9 reported in this study were collected in the spring of 2001. Only the scores for the complete battery, the basic battery, total reading, and total math were analyzed using Independent sample t tests to determine if there were any significance differences in the achievement performances between the two groups of students.

Complete Battery Scores

The complete battery score represents overall performance in science, social studies, study skills, total reading, total math and language arts. The mean score for Group 1 was 92.6 and 79.9 for Group 2. Nine of the ten students in Group 1 scored 90% or above on the complete battery which is the minimum score for achievement for gifted program placement(full achievers). Dexter in Group 1 was the only student who did not score at this level. His score was 85% on this measure. It should also be noted that Karen's score of 92% was the only score to meet the minimum achievement level from Group 2. As can be seen in Table 7, a statistically significant difference ($p = .001$) was found between the two groups.

Table 7: Comparison of SAT Complete Battery Scores Between Groups 1 and 2

Group	Number	Standard Deviation	Mean Percentile Scores	t
1	10	5.42013	92.6000	3.894
2	11	8.90454	79.9091	

$p = .001$

Basic Battery Scores

Total reading, total math, and language arts make up the basic battery. The mean score for Group 1 was 89.8 and 78.2 for Group 2. Only 7 students in both groups scored 90 % or above (full achievers). The only student in Group 2 who scored at this level was Karen with a 91%. In addition, Wayne (88%), Don (82%), Dexter (81%), and Sybil (76%) of Group 1 did not score at the minimum level for this achievement area. The difference between these two means as shown in Table 8 was also significant ($p= .006$)

Table 8: Comparison of SAT Basic Battery Scores between Groups 1 and 2

Group	Number	Standard Deviation	Mean Percentile Scores	t
1	10	7.69993	89.8000	3.066
2	11	9.46381	78.1818	

p = .006

Total Reading Scores

The only area on the SAT-9 for which no significant difference was found was for total reading as shown in Table 9.The mean percentile score for Group 1 was 92.4 and for Group 2 was 84.5 (p = .074). Although there was no significant difference between the two groups, the mean score for the students in Group 2 was almost 8 points lower than for the students in Group 1.Twelve of the twenty-one students in the study scored 90% or above (the minimum score for placement) and would be considered full achievers in total reading. Four of these students were from Group 2: Tim (96%), Mary (95%), Anna (95%), and Helen (93%). Group 1 students who fell below the minimum score in reading were Dexter (81%) and Sybil (71%). In addition, it should be noted that, during the time that the students participating in this study were at Meadowdale (1996-2002), a concerted effort was made by the school faculty to concentrate on an uninterrupted time period of ninety minutes for reading and language arts. This extra effort spent on language arts and reading could be the reason for the higher scores and for no significant difference in performance being found for the two groups. Also because reading permeates every aspect of curriculum, students automatically engage in reading activities across all their subject areas

Table 9:Comparison of SAT Total Reading Scores between Groups 1 and 2

Group	Number	Standard Deviation	Mean Percentile Scores	t
1	10	9.29994	92.4000	1.892
2	11	9.88295	84.4545	

p=.074

Total Math Scores

In total math, the mean percentile score for Group 1 was 93.3 and for Group 2, the mean score was 82.3. Fourteen of the twenty-one students in the two groups scored 90% or above in math which was again the minimum score for gifted program eligibility and considered full achievement. The students in Group 2 who scored at this level were Karen (96%), Bobby (95%), Nicole (94%), Danny (92%), and Helen (90%). Also, one student in Group 1, Sybil, scored only 79% in this area. The difference between the two scores was significant ($p = .026$) as seen in Table 10.

Table10 :Comparison of SAT Total Math Scores between Groups 1 and 2

Group	Number	Standard Deviation	Mean Percentile Scores	t
1	10	5.88878	93.3000	2.397
2	11	13.39471	82.2727	

p=.02

Summary of Question One Results

In this section, data collected from the SAT-9 and GPAs to answer question one were presented. As was shown in Figure 1, evaluations of classroom performance for Group 2 students revealed that they performed almost the same and, in some instances the same, as Group 1 students. Except for Total Reading score, however, SAT-9 results revealed significant differences in achievement between the two groups. That is, student achievement, as represented by SAT-9 scores, were not consistent with GPA evaluations of achievement as given by the teachers. This points to one of the problems that led to this study. As I noted in my preface, there is growing and compelling evidence from current research suggesting that intelligence is not a one-dimensional construct. This has led to an agreed upon pronouncement in the field of gifted education that eligibility for services should never be based only on standardized test scores. Further support of this pronouncement is the recognition that relying only on tests scores presents a major problem when attempting to identify gifted potential in very young children, especially those from minority and low socioeconomic backgrounds.

When students in this study were initially considered for participation in our school's gifted program, only scores from the Iowa Tests of Basic Skills (ITBS) (the achievement tests used in 1997) and the Otis Lennon Test of School Ability (OLSAT) (the only mental ability test used) determined eligibility for gifted program services. Students in Group 2 did not meet this eligibility requirement even though there was compelling evidence to suggest that they needed to be participating in the more advanced instruction being provided in our school's gifted program.

During the first grade, I began to document additional evidence of academic performance using the TDP. By the beginning of the second semester of the first grade, the Eligibility Team and I were able to confirm Group 2 students as eligible for gifted program participation. This step became very important for it underscored the validity of collecting as much information as is possible from as many sources as is possible. Had multiple criteria been used earlier, these students would very likely have been approved for receiving services in the gifted program at the end of their Kindergarten year.

Question 2. How do teachers' observations of the gifted traits, aptitudes, and behaviors (TABs) of the students in Groups 1 and 2 compare?

Data from the TAB ratings and individual teacher interviews were used to answer this question. Each student was evaluated on the TABs by at least two teachers. These evaluations were blind; teachers did not know which students were identified using the traditional method and which were identified using the TDP.

TAB Interviews

The TABs were used to develop open-ended questions to be used in the interview. The fifth grade teachers rated their students on the TABs using a 1-5 point likert scale. Then the teachers were asked questions based on their TABs ratings to gather information that would explain and enhance their ratings. That is, during the interviews, teachers were asked to elaborate further on their TAB observations by adding additional information or examples of student performances that had come to their attention since their original evaluations. In the discussion that follows, overall results and results for each TAB are presented.

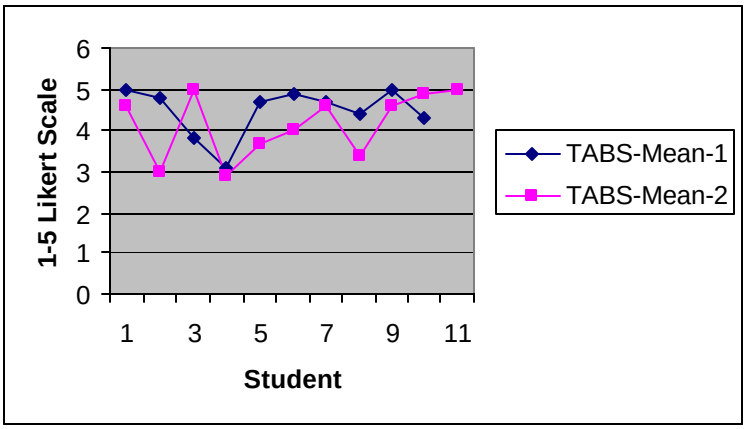
TAB Interview Results

TAB Mean Scores for Groups 1 and 2

The ten children in study Group 1 were all White and included seven boys and three girls. Their overall mean score from their TABs' evaluations was 4.47 out of a possible 5. The 11 children in Group 2 consisted of seven White students and four Black students. Six of these students were girls and five were boys. The mean overall TAB

score for Group 2 was a 4.07 out of a possible 5. A summary of TAB scores for each student in each group is shown in figure 2.

Figure 2: TABS Mean Scores by Group



As can be noted two students in each group received a 5.00 score on the TABs (students 1 and 9 in Group 1 and students 3 and 11 in Group 2). Also, there were students in both groups who had almost identical means (students 2 (4.8), 5 (4.7), 6 (4.9), and 7 (4.7)in Group 1, and students 1 (4.6) , 7 (4.6), 9 (4.6), and 10 (4.9) in Group 2). The remaining students in Group 1 all had higher mean scores than the remaining students in Group 2. For purposes of this analysis, I have grouped the students receiving 4s and 5s as full achievers and the students receiving 3s, 2s, and 1s as average (3) or below average. Six of the eleven students in Group 2 would thus be classified as full achievers: Karen (5.0), Mary (5.0), Helen (4.9), Danny (4.6), Sharon (4.6), and Kenneth (4.0). In addition, two of the Group 1 students would not be classified as full achievers: Eric (3.8) and Dexter (3.1). In spite of Group 2's lower mean score, there was no statistical difference found between the two groups of students (p= .323) for the TABs means. In the discussion that follows, a summary of comments regarding students in Groups 1 and 2 on

each of the TABs is presented. Definitions for the TABs, as reported by Frasier (1994), are presented followed by a discussion of the findings.

Individual Scores for each TAB by Group

Motivation. Motivation, as a core attribute of the giftedness construct, refers to evidence of a student's desire to learn. Motivation is defined as those forces that initiate, direct, and sustain individual or group behavior in order to satisfy a need or attain a goal.

In Group 1 five students received a rating of 5 on the motivation component, four students received a rating of 4, and one student received a rating of 1 (Eric). In Group 2, four students received a rating of 5 on motivation (Mary, Helen, Karen, and Sharon), two a rating of 4 (Kenneth and Anna), one a rating of 3.5; two a rating of 3, one a rating of 2.5, and one a rating of 1. Although Eric from Group 1 would not be classified as a full achiever, six of the students in Group 2 (Mary, Helen, Karen, Sharon, Kenneth, and Anna) would be in this category.

Students in Groups 1 and 2 who received ratings of 4 or 5 include teacher comments such as the following:

- Always looking for more to do
- Wants to receive assignments ahead of time.
- Always turns in assignments on time and sometimes even ahead of time.
- Asks for more to do.
- Turns in projects that show careful planning and mature organizational skills.
- Is internally motivated.

- Wants to get good grades.
- Is very motivated by subject matter that interests them.

Even though comments affirmed teachers' observations of their high level of motivation, comments were also made about factors that impacted these students' abilities to excel. Observations such as the following reflected teachers' awareness that these students were not perfect.

- Shows strong perfectionistic tendencies.
- Quiet and shy about contributing ideas.

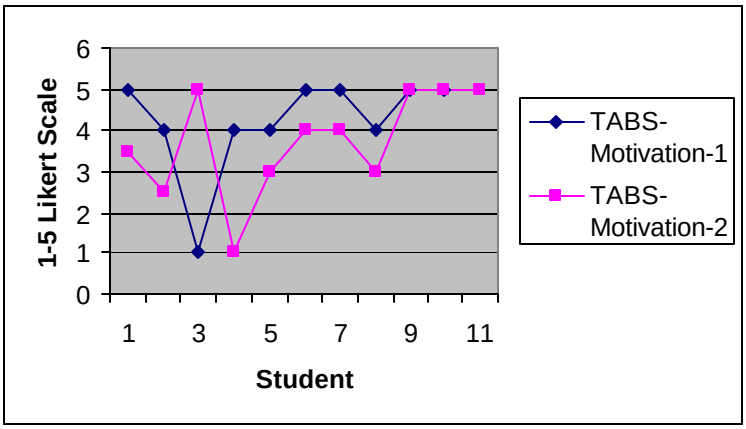
Teachers made comments such as the following about students in Group 2 who received ratings of 1, 2, or 3 and the student in Group 1 who received a rating of 1 in motivation:

- Immature.
- Disorganized
- Seem to be intimidated by other students.
- Placed a great deal of emphasis on doing class work to please the teacher.
- Often not eager to participate in class activities.
- Rarely turns in assignments on time, whether short-term or long-term.
- Have to be in constant contact with parents to get any work out of them.
- Does well on tests but not as well in performance.
- Acts as if they don't care.

Most of the comments about motivation however, did not appear to reflect observations of motivation as it is related to the giftedness construct. Rather they appeared to reflect teachers' tendencies to confuse observations of good student conduct

with gifted behaviors. It became apparent that more staff development for teachers would be helpful in order to assist the teachers in understanding and making these distinctions.

Figure 3: TABs Motivation Scores By Group



The mean score for Group 1 students was 4.2 and for Group 2 students was 3.7. Group 2 students again scored lower in spite of the lack of statistically significant differences in these scores (p= .323)

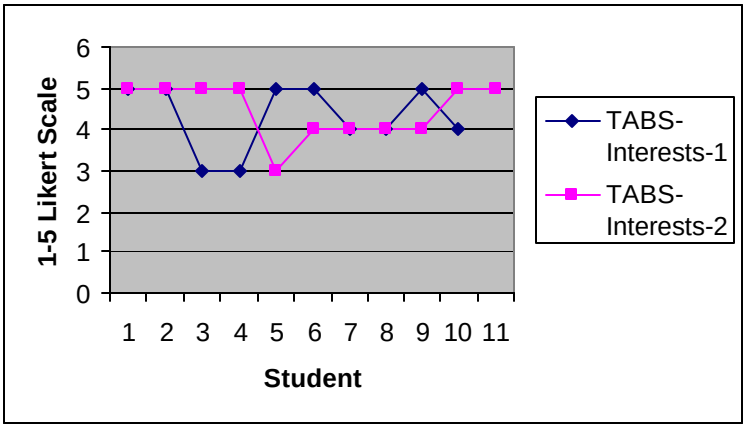
Interests. Interests refer to intense, sometimes unusual attention and responsiveness to an area of focus. Interest is defined as those activities, avocations, objects, etc. that have special worth or significance and are given special attention.

Group 1 interest scores included five students who received a rating of 5, three students who received a rating of 4, and two students who received rating of 3(Eric and Dexter). Group 2 students included six who received a rating of 5 in interest (Danny, Nicole, Mary, Helen , Karen, and Joe), four who received a rating of 4(Kenneth, Anna, Tim, and Sharon), and one student who received a rating of 3. Eric and Dexter in Group 1 would not be considered full-achievers in the Interest TAB, but nine of the Group 2 students would be full achievers.

The students who received ratings of 5 in both groups were characterized as having lots of interests inside and outside of school. Teachers described them as being interested in all areas of school, having lots of outside interests, and liking all subjects equally.

The students who received a rating of 4 were described by their teachers as having a high interest in school subjects but an interest that could wane over time and showing interest in subjects they liked. Students receiving a rating of 3 in interest were generally described as having a laid-back attitude and as being day-dreamers and as showing limited interest in their subjects.

Figure 4: TABs Interest Scores By Group



For the interest component on the TABs, the mean score for Group 2 was slightly higher (4.45) than for Group 1 (4.3). Although this difference was also not statistically significant, it was noteworthy since for all other areas, Group 2 students scored slightly, if not significantly, lower than Group 1 students.

Communication Skills. Communication skills refer to the highly expressive and effective use of words, numbers, symbols, etc. It is defined as the transmission and

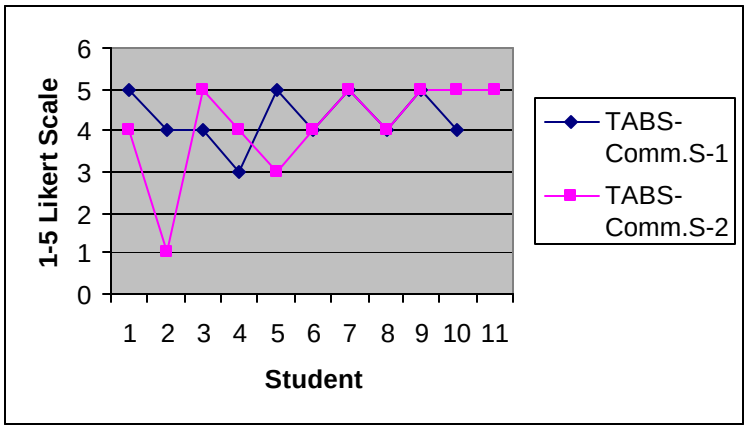
reception of signals or meanings through a system of symbols-codes, gestures, language, numbers, etc.

For communication skills, four students in Group 1 received a rating of 5, five students received a rating of 4, and one student received a rating of 3 (Dexter). In Group 2, five students received a rating of 5 (Mary, Helen, Karen, Anna, and Sharon), four students received a rating of 4 (Danny, Joe, Kenneth, and Tim), one student received a rating of 3, and one student received a rating of 1. Thus there were nine full achievers out of the eleven students in Group 2 for this TAB.

Comments such as "excellence in oral and written communication skills" and "accuracy in mechanics" were made about students in both groups who received a rating of 5. Students receiving a rating of 4 were either characterized as being high in oral or in written skills but not both. "Sloppy, poor fine motor skills, poor organizational skills "were used to characterize the communication skills of students who received a rating of 3. Finally, the student in Group 2 who received a rating of 1 was characterized as having "terrible written mechanics" and as "not paying attention to spelling, grammar, and punctuation." However, this student was also described as being "excellent in creative writing when you could get past her poor mechanics."

While comments such as these pointed to teachers' abilities to focus on specific attributes to support their ratings, they also connote teachers' emphasis on the skills and mechanics of writing. Very little mention was made regarding students' abilities to be effective in conveying a message. The only exception was the student who was rated 1. This student was described as being an excellent creative writer despite limitations in mechanics.

Figure 5: TABs Communication Skills Scores By Group



Again, Group 2 students scored generally lower (4.1) than Group 1 (4.3) on the interest component of the TABs. There was one interesting "outlier" in Group 2, the student who scored a 1 because of poor mechanics.

Problem-solving ability. Problem-solving ability is the effective, often inventive, strategies for recognizing and solving problems. It is defined as the process of determining a correct sequence of alternatives leading to a desired goal or to successful completion or performance of a task.

For Group 1 seven students received a rating of 5, two students received a rating of 4, and one student received a rating of 3 (Dexter). For Group 2 four students received a rating of 5 (Danny, Mary, Karen, and Anna), another four received a rating of 4 (Helen, Kenneth, Sharon, and Bobby), and three students received a rating of 3. For problem-solving ability, eight of the eleven group 2 students would be considered full achievers.

Comments from teachers for Group1 students who were rated 5 included:

- Excellent problem-solver.
- Thinks outside the box.
- Inventive.
- Able to dismantle problems into logical steps, sequences.
- Finds different ways to develop answers.
- Over the top in doing assignments.

The two students in Group 1 who received a rating of 4 were also described as having difficulty with motivation which caused them not to appear to be top-notch problem-solvers. The one student who received a rating of 3 was the student who received a rating of 3s in all of the other TABs with the exception of motivation, where a rating of 4 was assigned. Both of his teachers described this student as being very quiet and a loner by choice. They said that he always answered when called upon but did not offer a lot on his own so they found it difficult to rate him high in any of the categories.

Group 2 students who received a rating of 5 had the following comments made from their teachers:

- Enjoys independent problem-solving.
- Often see alternatives in problem-solving.
- Would stick with things in math until they arrived at the correct solution.
- Better answers and more in depth answers when they got it.

The students in this group who received a rating of 4 had comments such as

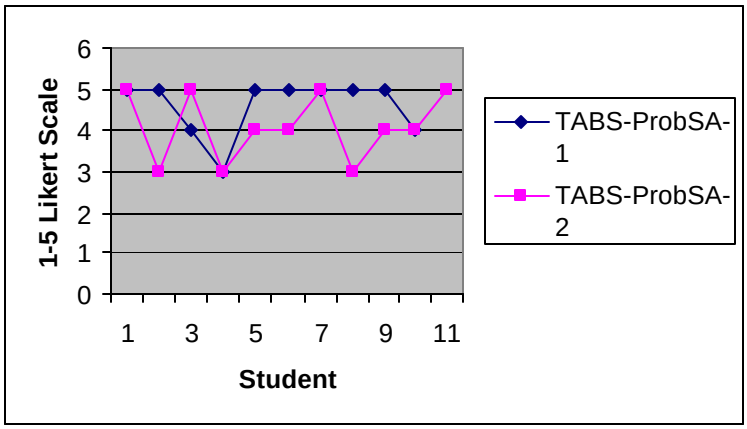
- Very good critical thinkers.

- Puts things together quickly, particularly in book discussions.
- Weaker in math problem-solving but excels in reading and social studies.
- Laid back and content to let others take the lead but always gets it right.

One girl who was rated a 4 in problem-solving was actually rated a 5 and a 2 in this TAB by her two teachers. The 5 was from her language arts/ social studies teacher who commented that she was a strong problem-solver in literature studies and historical discussions. Her science/math teacher saw her differently, however. She said that math could be difficult for her. "She didn't understand it. She needs steps and rules to follow rather than using an inquiry approach."

The three students who were rated 3s had trouble with motivation also which affected their rating, according to their teachers. One comment about one student was "has the ability to do much more than he produces." One student "often needed assistance with problems, lacked self-confidence." The teacher reported that this child's parents had commented in conferences that their daughter was not much of a math student and was not ever going to do well because "it wasn't her thing." The teacher commented that it seemed as though their attitude reinforced a "self-fulfilling prophecy." Another boy was seen as "being able to reason clearly, asks a lot of questions, but it takes a lot to engage him, can be distracted easily by social issues, difficult to tie down."

Figure 6 TABs Problem-Solving Ability By Group



The mean score for Group 1 was 4.6 while the mean score for Group 2 was 4.1. The difference was not statistically significant, however Group 2 again scored lower overall than Group 1 in the problem-solving TAB.

Memory. Memory consists of a large storehouse of information on school or non-school topics. It may be defined as the exceptional ability to retain and retrieve information.

In Group 1 five of the students received a rating of 5 in memory, four of them received a rating of 4, and one student received a rating of 3(Dexter). Six students in Group 2 also received a rating of 5 (Danny, Mary, Helen, Karen, Anna, and Sharon), four other students received a rating of 4 (Nicole, Kenneth, Tim, and Bobby), and one student received a rating of 3. In Memory ten of the eleven Group 2 students would be considered full achievers.

Teacher comments for the Group1 students who received 5 included:

- Great memory for all kinds of facts and concepts.

- Amazing memory.
- Absorbs so much at school even when they seem to be involved in something else.
- Often recalls previous experiences.
- Has a vast background of experience and insight from reading and traveling.
- Has the amazing ability to retain knowledge.

The students who received a rating of 4 were seen by their teachers as having a vast storehouse of information on school related topics but not particularly on non-school topics. Specifically one girl was seen as a"sponge" in school but did not offer information from out of school. One boy, on the other hand, was much more interested in and retained information on current events and global news. Another boy was described as being too laid back and unconcerned to worry about remembering things. Finally the one student who was rated a 3 was the one who was so shy and quiet that it was difficult for the teacher to offer a substantial rating about information on what he knew.

Group 2 comments for students who received a rating of 5 were:

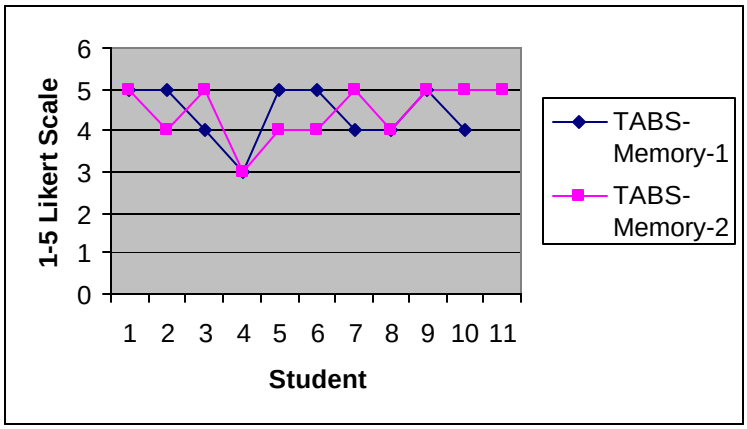
- Can recall many experiences.
- Knows so much about cultural events.
- Great recall in math.
- Has many personal experiences that they relate when involved in class discussions.
- Great memory for lots of facts.
- Minds like steel traps.

The students who received a rating of 4 were viewed as:

- Not showing off their knowledge.
- Doing well on quizzes and tests.
- Doing well on objective assessments but doesn't offer much else.
- Very social and forgets because of distraction with these issues.
- Mostly memory for social and current trends.

One boy was rated a 3 in memory. His teachers commented that he "knows a lot about real life due to living in a shelter environment."

Figure 7: TABs Memory Scores By Group



For this TAB, memory, Group1 mean score was 4.4 while Group 2 mean score was 4.36. These scores were almost identical and not statistically significant.

Inquiry. Inquiry refers to the ability to question, experiment, and explore effectively. A definition of inquiry is the method or process of seeking information, knowledge, or understanding.

Four students in Group 1 received a rating of 5 while four received a rating of 4 and two received a rating of 3(Eric and Dexter). In Group 2 four students also received a

rating of 5 (Mary, Helen, Karen, and Anna), four received a rating of 4 (Danny, Kenneth, Sharon, and Bobby), two received a rating of 3, and one received a rating of 1. Eight Group 2 students were full achievers in Inquiry.

Comments about the 5s in Group 1 included:

- Extremely curious and loves to experiment even on his family members.
- Has a curious intellect
- Question, experiment, explore on their own; do like to question why.
- Loves to experiment with "what ifs?" especially in science.
- Over the top.

The students who received a rating of 4 in this group were seen to be quiet and difficult to tell where they were. One was considered top notch in open-ended thinking and seeing things in a different perspective, while another was described as strong but not striking and as letting others take the lead. The two students who received a rating of 3 were characterized as not digging very deep, especially in their science assignments and being so quiet and unassuming that it was hard to tell what they were thinking.

For Group 2 students who received a rating of 5, comments included:

- Often too much for their own good.
- Strong in exploration and research.
- Top notch in exploring.
- Always asking why.

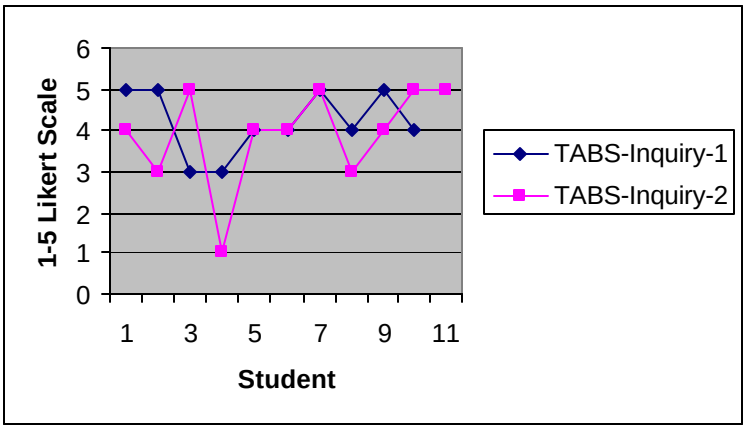
The 4 students who received a rating of 4 were described as:

- Holding back.

- Being introverted; not liking to draw attention to themselves.
- Questioning only in social studies and reading.
- Lacking follow-through.

The two students who received a rating of 3 were seen as being too social and asking too many questions before trying to figure things out on their own. Finally the student who received a rating of 1 only wanted to do the minimum to get by.

Figure 8: TABs Inquiry Scores By Group



There was another outlying score of 1 in Group 2 which contributed to the overall mean score of 3.9 for this group as opposed to 4.2 for Group 1. There was no statistically significant difference, but the group 2 lower score was affected by this one outlier.

Insight. Insight requires a person to quickly grasp new concepts and make connections. It is manifested by a sudden discovery of the correct solutions following incorrect attempts based primarily on trial and error

Eight students in Group 1 received a rating of 5 on insight. Of the last two students, one received a rating of 4 and the other received a rating of 3 (Dexter). In Group 2 there were seven students who received a rating of 5 in insight(Danny, Mary, Helen ,

Karen, Anna, Sharon, and Bobby), one student who received a rating of 4 (Kenneth), two students who received a rating of 3, and one student who received a rating of 1. As in Inquiry, eight Group 2 students were full achievers.

Comments for the students who received a 5 in Group 1 included:

- Quiet thinkers.
- Takes the connections made for granted.
- Often sees more than one solution to a problem.
- Cannot find a problem that they do not take off with.
- Amazing deep thoughts.

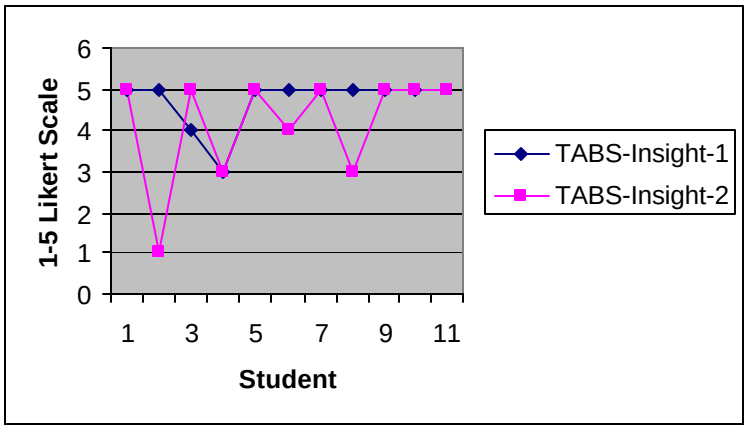
Comments about the students who received a rating of 3 or 4 were, in general, that they exhibited lax attitudes about their work, thereby making it difficult to know what was going on inside their brains. However, one teacher observed that one of the students who was rated a 4 on insight was "an excellent cause/effect thinker."

For the students who received a 5 in Group 2, comments included:

- Often sees the global picture.
- Stays with a task until it is fully understood.
- Has great insight when focused>
- Very insightful in math/science.

The students who received a rating of 3 and 4 were also seen as being very insightful in specific subject areas, notably reading and social studies. The student in Group two who received a rating of 1 on insight was described as "experiencing so much anxiety over problems that she shut down."

Figure 9: TABs Insight Scores By Group



Group 1 mean score for insight was 4.7 while Group 2 mean score was 4.18. Again there was not a statistically significant difference, however the Group 2 student who scored a 1 in insight did contribute to the lower Group 2 score.

Reasoning. Reasoning is demonstrated by logical approaches to figuring out solutions. A definition includes highly conscientious, directed, controlled, active, intentional, forward-looking, goal-oriented thought processes.

Nine students in Group1 received a rating of 5 in reasoning. The only other student in the group received a rating of 3(Dexter) In Group 2 six students received a rating of 5 (Danny, Mary, Helen, Karen, Anna, and Bobby), two students received a rating of 4 (Kenneth and Sharon), two students received a rating of 3, and one student received a rating of 1. In Reasoning eight students in Group 2 were full achievers.

Comments about the students who received a rating of 5 included:

- Very logical thought-almost to a fault-they play with it.
- Problem-solving seems so easy for them.

- Very strong logical reasoning.
- Able to prioritize what is needed to solve problems.
- Applies logic readily.
- Especially in math-always understands, plans, solves.
- Can tell me how they got to a law as opposed to knowing it or stumbling on it.

The only comments about reasoning for the student who received a rating of 3 were that he was a good problem-solver, but that he was quiet but that he would see the big picture in social studies, global issues.

There were six students in Group 2 who received a rating of 5 in reasoning. Comments from the teachers for these students included:

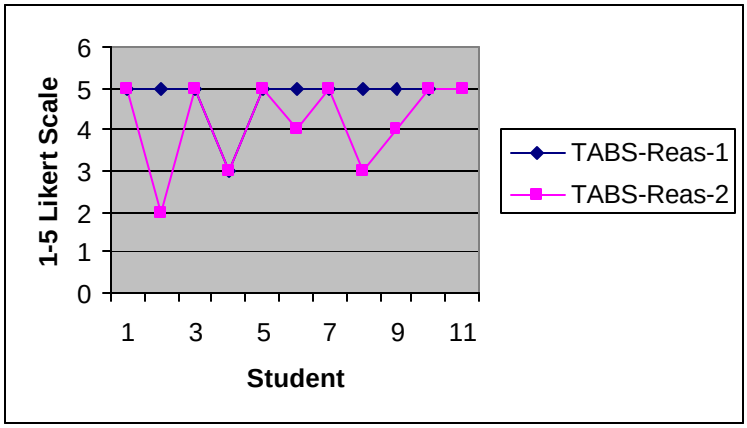
- Very systematic, often create "blueprint" for learning.
- Systematic approach- excellent math problem-solver.
- Very good logical reasoning.
- Very systematic on problem-solving, employs leadership ability.
- Wants everything to be filed, organized, and in its right place.

The two students who received a rating of 4 were noted to think logically about subjects sometimes trying to over apply. They often wanted to find other ways to an answer and had good questioning skills.

There were two students also who received a rating of 3. Their teachers commented that they had good reasoning and questioning skills when engaged and interested. Effort and motivation were problems for both of them.

The last student in this group received a rating of 1 in reasoning because of her lack of confidence in her ability to problem-solve. Her teachers described her as a gifted creative writer, who struggles in math and science. She also seemed to be fulfilling her parents' prophecy (according to her teachers) that she was not a math student.

Figure 10: TABs Reasoning Scores By Group



Group 1 students received a mean score of 4.8 while Group 2 students' score was 4.1. These scores were not statistically significant, however, they were similar to the problem-solving scores of 4.6 (Group 1) and 4.1 (Group2).

Imagination/creativity. A person who is outstanding in this trait produces many ideas and is highly original. Imagination/Creativity refers to the process of forming mental images of objects, qualities, situations, or relationships, which are not immediately apparent to the senses; solving problems by pursuing nontraditional patterns of behavior.

In imagination/creativity eight students in Group1 received a rating of 5, while one student received a rating of 4 and one a 3 (Dexter). Five students in Group 2 received a rating of 5 (Danny, Nicole, Mary, Helen, and Karen), two students received a 4

(Sharon and Anna), and four students received a rating of 3. In Creativity, seven group2 students were full achievers.

Comments for students who received a rating of 5 in Group 1 were such as:

- Strong imagination but needs help producing results.
- Often has ideas that their classmates haven't thought of.
- Can come up with many ways to create what they set their minds to.
- Likes to come up with their own ideas.
- High creativity in technology especially.
- Over the top in creativity.
- Shows up best in writing.

The student in this group who received a rating of 4 was characterized as being a little reticent in imagination/creativity. His teachers felt that he was creative but reluctant to show it in front of his 5th grade peers, kind of a macho thing, as one said. The student who received a 3 was seen as "excellent in drawing although fine motor skills were poor which was kind of odd." He was messy and was working with the Occupational Therapist on his fine motor skills.

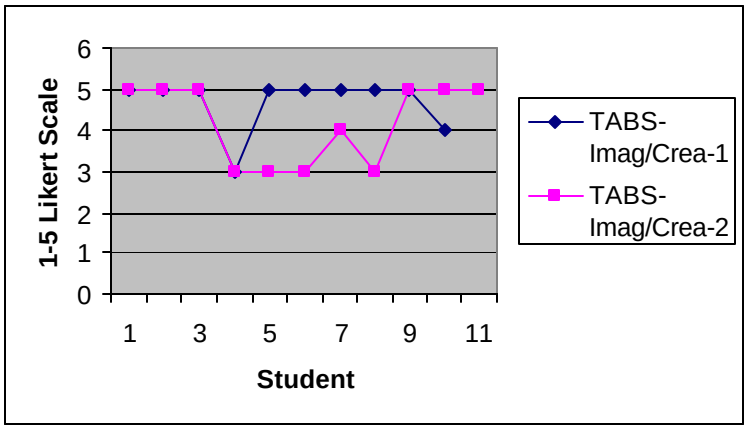
In Group2 the five students who received a rating of 5 were seen as:

- Highly imaginative and strong in creativity.
- Projects were outstanding and artsy.
- Technology presentations showed lots of creativity.
- Likes a different slant on projects.
- Enjoyed being different.
- Very right-brained.

- Wonderfully creative.
- Great writing and visual projects.

The students who received a 4 were seen as business like and serious. The three students who received a rating of 3 were characterized as being creative but lacking in the motivation and the desire to be involved in thinking creatively.

Figure 11: TABs Imagination-Creativity Scores By Group



Students in Group 1 scored a mean of 4.7 while Group 2 students scored a 4.18 mean score. The lower score for Group 2 was not statistically significant but follows the pattern of lower scores for Group 2 throughout this procedure.

Humor. Humor includes conveying and picking up on humor well; an appreciation of the absurd or incongruent. It is the ability to synthesize key ideas or problems in complex situations in a humorous way, including an exceptional sense of timing in words and gestures.

In Group 1 five students received a rating of 5, while four received a rating of 4, and one student received a rating of 3 (Dexter). In Group 2, six students received a rating

of 5 (Danny, Mary, Kenneth, Sharon, Helen, and Karen), three students received a rating of 4 (Nicole, Anna, and Tim), and two students received a 3. For the Humor TAB, nine Group 2 students were full achievers.

The five Group 1 students receiving a rating of 5 were characterized as being very social, quirky, and sophisticated. They also saw humor at a higher level and enjoyed adult humor.

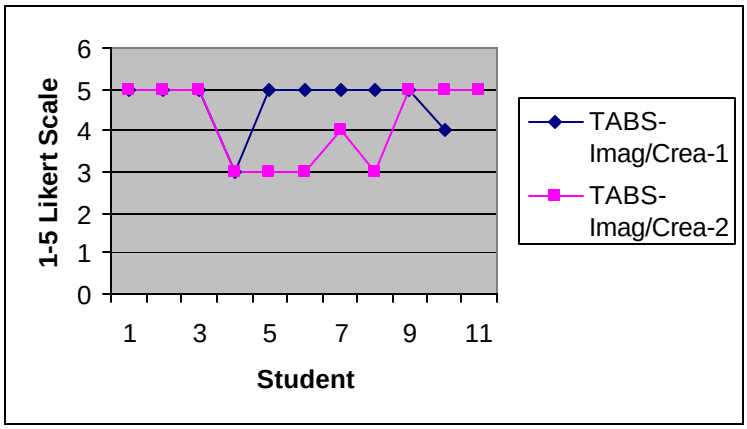
The students in this group who received a rating of 4 were seen as business-like and quiet. Their teachers also saw them as being adult-like in humor and being silly at times.

The one student who received a rating of a 3 was seen as being shy, retiring, and keeping to himself. He was likeable and enjoyed other students but was reticent about demonstrating his own humor.

In Group 2, the 5 students who received a rating of 5 were described as funny, appreciative of humor in others, understanding of adult humor, having a very dry sense of humor, being adult-like, and enjoying jokes made about themselves. In other words, the students were not afraid to laugh at themselves.

The students who were rated 4 in this group were seen as enjoying a joke but not initiating it. The students who were rated 3 were seen as being quiet and shy and also too immature to appreciate humor or initiate it.

Figure 12: TABs Humor Scores By Group



Students in Group 1 received an overall Students in Group 1 received an overall mean score of 4.4 in Humor while Group 2 students score was 4.36. The scores were almost identical and not statistically significant.

Summary of the Teacher Interviews

In reviewing the teachers' comments about the students, it should be noted that their characterizations of the students were very similar to the number ratings they assigned to the students in the TABs process. They had already rated the students prior to the interviews. Comments were generally positive when they rated the student a 4 or a 5, but negative if the rating was rated lower than a 4. On the Communication Skills trait, the teachers were almost always more concerned with how students expressed themselves in written communication rather than what they wrote or said. Problem-solving ability was also seen as a function of the students' subject-area strengths rather than a general ability in this area. For example, math/science teachers tended to judge students differently than language arts/ social science teachers. In addition, math/science teachers were not as quick to recognize creativity in students as the language arts/social science teachers were.

The only TAB on which Group 2 had a men score higher than Group 1 was in the area of interests. The teachers rated the students who had in and out of school interests higher than the students who had only one kind of interest or the other. It would appear that the "bookish" students who was not involved in lots of extracurricular activities would not have been rated at the highest level.

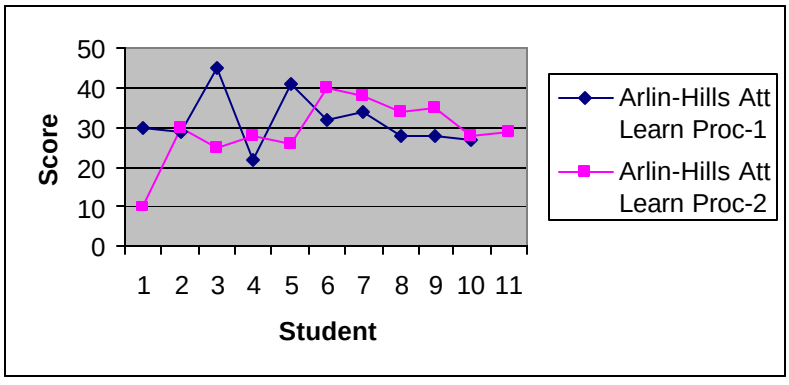
Question 3: How do self-reported attitudes toward school learning of the students in the two groups compare?

Students completed the Arlen-Hills Survey in four areas that rated their attitudes toward their teacher, language arts, math, and the learning process**.** The scores for each student by study group are reported below. The total possible score for each survey was 45, that is, 15 questions for each with a top score of 3. According to the manual, a total score of 30 or above is considered a desirable by the authors (p.10).

Attitude Toward Learning Processes

The attitude toward learning processes survey requested students to answer questions about how they viewed their school experiences in terms of its learning environment. The questions centered around two dominant themes: how the teachers conducted classes and how the students were able to respond and reflect their own learning styles. Examples regarding teacher conduct included statements such as "teachers talk too much" and "must get permission from the teacher." Examples regarding student learning styles included statements such as "able to work at own speed" and "must work on same thing at same time."

Figure 13: Arlin Hills Attitude Toward Learning Process By Group



For the attitude toward learning process, the mean score for Group 1 was

31.6000 and for Group 2 was 29.3636. There was no significant difference found between the two groups (p = .504).

Table 11 : Comparison of Arlin Hills Attitude Toward Learning Process Survey Scores between Groups 1 and 2

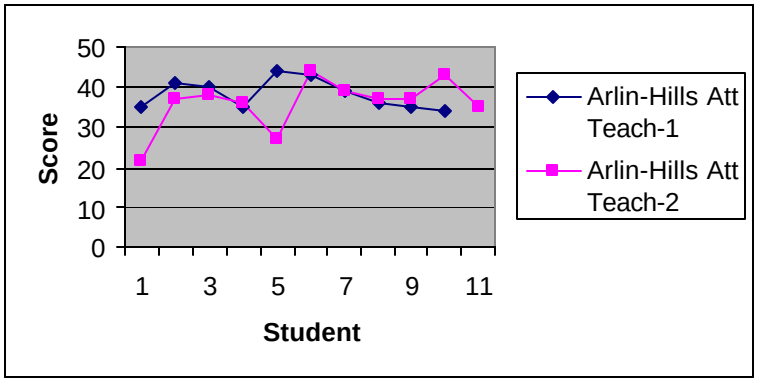
Group	Number	Standard Deviation	Mean Score	t
1	10	6.85079	31.6000	.681
2	11	8.06564	29.3636	

p = .504

Attitude Toward Teachers

The attitude toward teacher survey requested students to answer questions about how they view their teachers in terms of their learning environment. The questions centered around two dominant themes: how the teachers teach and how the teachers interacted with the students. Examples regarding teacher style included statements such as “new ways of teaching” and “bored with teaching.” Examples regarding teacher/student interaction included “help students learn” and “boss students.”

Figure 14: Arlin Hills Attitude Toward Teachers By Group



For the attitude toward teachers, the mean score for Group 1 was 38.2000 and for Group 2 was 35.9091. There was also no significant difference between the two groups on this survey ($p = .333$).

Table 12: Comparison of Arlin Hills Attitude Toward Teacher Survey Scores between Groups 1 and 2

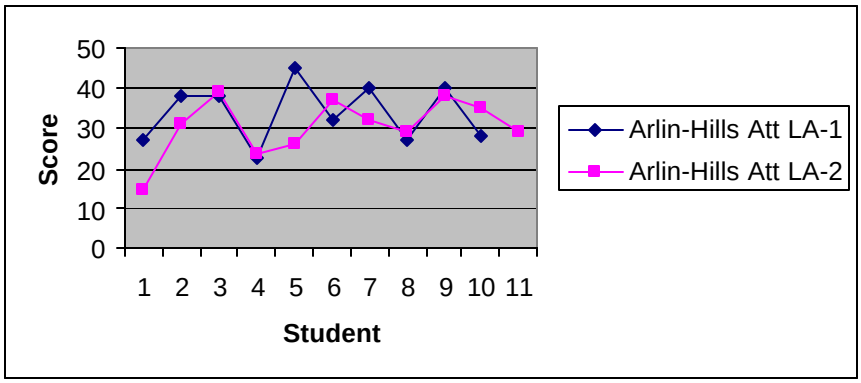
Group	Number	Standard Deviation	Mean Score	t
1	10	3.67575	38.2000	.994
2	11	6.37894	35.9091	

$p = .333$

Attitude Toward Language Arts

The attitude toward language arts survey asked students to answer questions about how they view their language arts classes in terms of their learning environment. The questions referred to specific areas of language such as spelling, reading, and writing, however the major area was in reading (10 questions). Examples regarding reading included statements such as “like to read even when not required” and “reading is boring.” Spelling and writing included statements such as “fun to practice writing” and “too many chances for errors in spelling.”

Figure 15: Arlin Hills Attitude Toward Language Arts By Group



For the attitude toward language arts, the mean score was 33.8000 for Group1 and 30.4545 for Group 2. No significant difference was found between the two groups on this survey (p = .301).

Table 13: Comparison of Arlin Hills Attitude Toward Language Arts Survey Scores between Groups 1 and 2

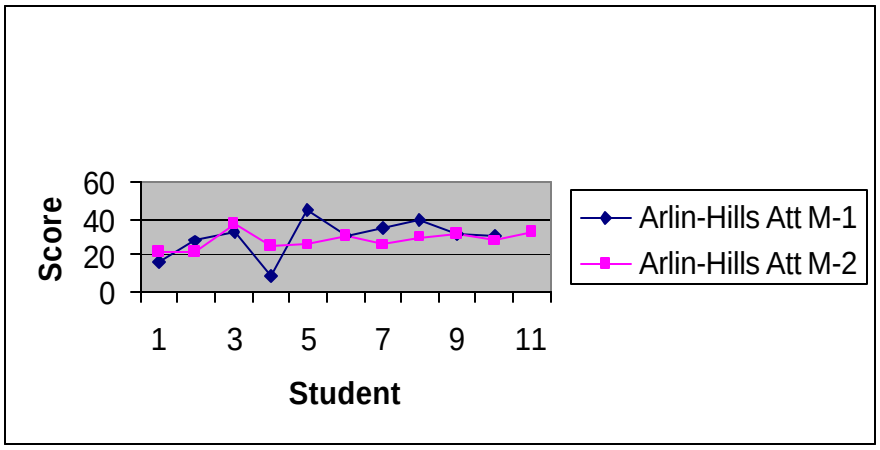
Group	Number	Standard Deviation	Mean Score	t
1	10	7.33030	33.8000	1.064
2	11	7.07621	30.4545	

p = .301

Attitude Toward Math

The attitude toward math survey requested students to answer questions about how they viewed math in terms of their learning environment. The questions emphasized arithmetic attitudes in computation and problem-solving although they were all pretty general in nature. Examples included such statements as “arithmetic is boring”, “arithmetic is good”, “makes you think”, and “fun to do arithmetic problems.”

Figure 16: Arlin Hills Attitude Toward Math By Group



Finally, for the attitude toward math, the mean score for Group 1 was 30.000 and for Group 2 was 28. 1818. No significant difference was found between the two groups on this survey as well (p =.615).

Table 14: Comparison of Arlin Hills Attitude Toward Math Survey Scores between Groups 1 and 2

Group	Number	Standard Deviation	Mean Score	t
1	10	10.57250	30.0000	.512
2	11	4.99636	28.1818	

p = .615

Summary of Arlin-Hills Student Attitude Surveys

The results of the self-reporting surveys demonstrated that the students from Group 1 and Group 2 were similar in their attitudes toward the learning process in general, their teachers, language arts, and math. As previously noted in Chapter IV, each of the 4 surveys included 15 questions. The highest possible score on each of the surveys was 45. A score of 30 was considered by the authors as a positive score. The independent samples t tests conducted on each of the surveys indicated that no significant differences were found between the two groups on any of the surveys. It is also interesting to note that, although no significant differences were found on any of the survey findings, Group 2 students did have mean scores lower than Group 1 students on all 4 of the survey questionnaires. Thus, these self-reporting measures showed the same overall tendencies as the other measures.

CHAPTER 6

SUMMARY AND FINDINGS

The purpose of this study was to investigate the efficacy of a program, the TDP, to assist in the identification of young gifted children who had been overlooked when a procedure was used that relied on standardized tests. A particular emphasis was on the effectiveness of the TDP in identifying gifted children from minority backgrounds, a group highly underrepresented in gifted programs. The effectiveness of the TDP was based on comparing the performance (over a five-year period) of these newly identified students (Group 2) with the 10 students who had been identified using the traditional procedure (Group1).

Academic Performance of Groups 1 and 2

Statistically significant differences at the .05 level were found between students in Groups 1 and 2 in three of the four areas on the Stanford-9 achievement tests: Total Math, Basic Battery, and Complete Battery. No statistically significant difference, however, was found for Total Reading. As explained earlier, this may have occurred because of the emphasis placed on reading skills development in our general curriculum and the additional emphasis placed on other reading skills, i.e. communication, problem-solving, and advanced vocabulary skills which make up a critical part of the gifted curriculum. Students in both Groups 1 and 2 had had equal access to this enhanced reading curriculum for almost five years.

Teacher Ratings and Student Attitudes

The teachers rated the students in both Groups1 and 2 similarly on each of the ten areas of the TABs. That is, there was little difference between the groups as gleaned from the teacher interviews on each of the TABs. One area, which was noteworthy, is that when the teachers discussed communication skills, they emphasized mechanics in writing almost to the exclusion of writing process and style. In addition, the teachers still described good student characteristics rather than the traits, aptitudes, or behaviors associated with the giftedness construct as exhibited by a student.

Although there was little statistically significant difference between the two study groups, it should be noted that Group 2 students did score lower on nine of the ten TABs. The only TAB that Group 2 students scored higher on was Interests. There was not a statistically significant difference on this TAB, but it was the only area of higher rating for Group 2 students.

Eight of the eleven students in Group 2 were full- achievers, that is they were rated 4 or 5 on most of the TABs. They also had an end-of-year GPA of 4.0. The four African-American students were competitive in this group. The one African-American boy in the group had some achievement problems during the school year but was able to improve his grades steadily. In addition, he had a very high Interest rating on that TAB. He was very-heavily involved in outside activities which may have caused some problems with balancing his after school hours between study and extracurricular time.

One of the African-American girls had difficulty with long-term assignments. She always turned in daily lessons and homework but could not plan her time to include long-term projects. Her math/science grades were top-notch, and these teachers spoke

highly of her; however her language arts/ social studies grades were lower due to not meeting deadlines and missing assignments. Accordingly, her grades in these subjects were not as good as expected.

The other two African-American girls in Group 2 impressed their teachers as being serious about their schoolwork and having good potential. Both were anxious to get good grades, and their families gave them good support. One was very tense about her math and science and wanted to get the correct "steps" as the teacher put it. She was an outstanding writer with particular talent as a public speaker and a student leader.

The other African-American girl was noted as an excellent creative writer. Her mechanics were poor, however, which caused her teachers to lower her ratings. She actually was rated a 1 on the Communication Skills TAB. Her teachers simply could not get past the poor mechanics. At the same time, her teachers felt that her parents did not expect her to get good grades in math and science because they were subjects which were difficult for her. It is interesting to note that her Stanford Achievement score in Total Math was 94% whereas the Total Reading score was 88%.

The TDP was shown to be helpful in correctly identifying eight of the eleven students in Group 2. Using their performance during Talent Development as a criterion suggests the merit of planning activities which will allow students to demonstrate gifts in higher levels of thinking and cognitively complex activities. There is no way to know whether or not the eight high-achievers from Group 2 would have been identified via traditional means later on in their elementary experience, however, the TDP as a source of accurate information for early identification of these students is obvious.

The Arlin Hills Survey results yielded similar results for both Groups 1 and 2. That is, there were no significant differences at the .05 level between the two groups on any of the 4 surveys.

Implications for Further Research

Several implications for further research were noted as a result of this study. The implications referred to (a) additional studies to clarify the benefits of early identification, especially for minority and lower socioeconomic status students, and (b) the need to collect as much information as possible when determining eligibility for gifted program services. In addition, there is definite potential for a longitudinal study since most of the study group students have stayed together for middle school and are going on to the same high school. The fact that the study groups were small in number – ten and eleven students in the groups- suggests a lack of gender effects and teacher effects. A larger study which might include gender and teacher effects could prove beneficial.

Though not proposed as questions in this study, findings also underscored the need for increasing staff development in gifted education for all teachers dealing specifically with gifted attributes. A major topic to be included in the staff development would be to help teachers distinguish between characteristics of gifted students and characteristics of good students.

Benefits of Early Identification and Identifying Gifted Minority and Poor Students

The performance success of the students, particularly in Group 2, suggested that early identification for giftedness could have a positive impact on students. The results of the Arlin Hills Surveys demonstrated that these students might have developed positive

attitudes toward math, language arts, teachers, and the learning process in general because of their continuous participation in the gifted program. However, further research is needed to determine more definitively if there is a link between student attitudes and participation in the gifted program. To gain additional insights into the effects of program participation and human growth and development, studies comparing responses by gifted students with those of regular education students need to be conducted.

This finding was noteworthy, particularly since the students were asked to fill out the surveys at the end of the 5th grade. This is a time when students are beginning to feel the impact of preadolescent hormonal changes which often result in a suppression of gifted behaviors. Of course, there is no way to know all the factors which contributed to the positive attitudes of students in this study toward school. However, early participation in gifted program services certainly can be considered an important factor.

In spite of our knowledge that giftedness occurs in all socioeconomic and ethnic groups, the identification of gifted children from minority backgrounds continues to be difficult. All four of the minority students in Group 2 had participated in gifted program services since the 1st grade with the other students. Their performance and attitudes toward school may indeed suggest that the gifted program had a positive impact on their educational progress. The gifted program curriculum places heavy emphasis on advanced reading skills, especially in vocabulary development. More study needs to be done in order to find ways to help these students, and all the students in Group 2, achieve higher scores on standardized testing especially as they continue in their educational program when high standardized test scores become more important for

college acceptance and scholarship opportunities.

The Need to Collect Many Types of Information to Determine Gifted program Eligibility

The Multiple Criteria rule (SBOE # 160-4-2-38) to determine gifted program eligibility has been of great assistance in the recognition of giftedness as a multi-dimensional construct. In the past, educators have relied too heavily on standardized test scores which have been suspect in their ability to identify giftedness accurately. With the current trends in the field of multiple intelligences, it is becoming easier to tap specialized strengths in children in order to develop those skills, which will benefit an increasingly complex global society.

There were four additional implications for further study which were not posed for this study. They include (a) the need for better curriculum planning, (b) preparing teachers to reflect on their attitudes toward and expectations of giftedness in students, (c) preparation to help teachers recognize the need for challenge and differentiation in the regular educational program for gifted students, and (d) the need to help teachers clarify any confusion they may have about what characteristics describe a good student versus those that describe gifted students.

Curriculum Planning

When the multiple criteria rule became law in Georgia, it became evident that there was the opportunity to broaden our identification procedures. This broadening created a more intense need to investigate the strengths and weaknesses of our gifted children. No longer could teachers assume that all gifted students would have even skills

development. That is, gifted students are not homogeneous in their development and need good curriculum planning and practice to improve their skills, correct their weaknesses, and develop their strengths.

The comments made by the teachers in this study therefore became very important for several reasons. One reason was that these comments helped to determine eligibility for gifted program participation, especially for minority students. The comments also provided teachers with more data for curriculum planning. Thus this second reason was that teacher comments provided additional information that could be used in the development of curriculum that addresses specific students' strengths and weaknesses. For example, students in both groups who received 5s in communication skills were also described as being excellent problem-solvers who were good at thinking outside the box. They were considered as being adept at dismantling problems into logical steps and sequences. Comments such as these suggest that these gifted students would benefit from curriculum experiences that allowed them additional opportunities to pursue more advanced topics with the freedom to seek several solutions rather than one right answer.

There was nothing magical about the program that I used for the TDP. Although the PETS program was very-well suited for identifying higher-level thinking skills in young children, there certainly would be no reason that other programs or activities could achieve the same kinds of results. The main concern would be to offer a thinking skills program with cognitively-complex, creative, instructional activities in a structured observational setting. I found it highly valuable to work collaboratively with the regular classroom teacher, earning their cooperation and respect as a full member of their

instructional team. I believe that this is of paramount importance and insures a smooth working environment.

Teacher Expectations and Attitudes

In spite of the tendency to continue to observe teacher-pleasing behaviors, the TABs scales and interviews did help the teachers look at the students through different lenses as they focused on their own attitudes toward what constitutes giftedness and how they viewed children in their classes who they considered gifted. Children tend to meet the expectations of their teachers. That is, if the teachers viewed a child as gifted, then they expected gifted performance from the child. The child responded in kind.

The Need for Challenge and Differentiation in the Regular Classroom

During the course of the interviews, several of the teachers concluded some students with lower ratings were not being challenged in the regular classroom. Observations included such comments as:

- Lazy attitude
- Difficult to motivate
- Probation from the gifted program would exacerbate the problems

The teachers were reluctant to recommend probation because they said that they felt somewhat responsible for their poor performance. They mentioned that some of the lower- performing students lacked interest in certain areas and thus did not put forth much effort. They were not being challenged and had not bought into the importance of developing all their skills.

Some of the students were also quick to give up. Most of their early educational program had been easy, and they had rarely, if ever, experienced difficulty learning new material. In fact, most of the students had mastered many of the basic objectives before the curriculum was presented. It was not until late 4th grade and 5th grade that many of the students were exposed to anything really new which might not have come readily. Faced with more difficult material, some of the students tended to give up or seemed unwilling to try harder. One of the students was put on probation for a quarter but his teachers found that this only exacerbated the problem. He failed even more in his efforts to overcome deficiencies and seemed content to just slide along. When he was readmitted to the gifted program, his grades improved because, according to his teachers, he seemed to enjoy the more advanced expectations and the companionship of other more-achieving students.

Confusion of the Good Student with the Gifted Student

Despite my noticing that the teachers were gaining in their ability to look beyond test scores to the behaviors that the students were exhibiting, they still had a tendency to respond in ways that let you know that they were confusing some observations about good students with being gifted students. It was difficult for several of the teachers to pin down strengths of some of the students. They particularly tended to ignore the TABs completely and discussed traits such as kindness, helpfulness, and happy attitude, nice child as strengths, and disorganization, laziness, irritation with others, lack of self-esteem as weaknesses. It became obvious that there is a great need for good staff development in this area.

Future Plans

This study has been a long-time developing. The TDP program is ongoing at Meadowdale and has been adapted continually to address the changes in the population and the curriculum needs of the school.

One major change has been an influx of limited English proficiency (LEP) students who come from Central America and Asia. Each of these groups brings to the school their own unique values and needs. By working with the regular education and ESOL teachers, the gifted education teachers have worked to make more salient the identification of these students.

Another major change in the school has been the adoption of the Core Knowledge reform program. Core Knowledge is a curriculum program founded by Dr. E.D. Hirsch from the University of Virginia and emphasizes the need for children to have a broader more liberal education. Adding this to our curriculum has offered opportunities for the gifted education department to become a more effective part of curriculum change. We have adopted a collaborative delivery model which has encouraged all teachers, gifted education as well as regular education, to work together more effectively.

Finally, and I believe very important, is the general sense among the faculty in general that the gifted education team is an important part of the educational program in the school. Since we work with all the teachers, we are better able to point out ways in which the regular classroom program can be of more benefit to the gifted students. We make suggestions for adapting and differentiating activities, offer more challenging material, and help brainstorm creative ways to work with gifted children both

in and out of the regular classroom.

Staff development in gifted education is becoming a more important part of the program at Meadowdale than ever before. All of the regular education teachers have been encouraged to get the gifted endorsement add-on to their certificates which is offered by the school system's Professional Development Department. Several of the teachers have mentioned that, although they wish to remain a regular education teacher, they have found the gifted course work to be very helpful in their understanding the challenges involved in teaching gifted children.

The TDP procedure has been well received by parents and students at Meadowdale. Parents believe that the TDP has helped the regular classroom teacher challenge more students and has demonstrated to them strengths of students who may not ever meet eligibility for gifted program placement. Students find the program stimulating because it offers them the opportunity to develop their strengths in thinking skills and provides them the opportunity to develop these skills.

The TDP procedure has been well received and accepted over the course of the years. While it requires a lot of work and is very time-consuming, it has provided a means of collaboration with all aspects of the educational program for students and has become an important and innovative program. It has been well received by the school community and of benefit to all children, particularly those children whose educational program needs enhancement and challenge. There will always be changes and adjustments necessary as conditions and student populations change, however, the basic premise of any worthwhile educational venture is always the same; staying focused on the needs and potential of all children. Indeed, the gifted child must be included in this

focus. To ignore the special needs of our gifted children is to ignore our mandate in education.

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APPENDICES

Appendix A

Multiple Criteria Regulations
SBOE 160-4-2-.38

Georgia Eligibility Criteria for Gifted Programs
Rule 160-4-2-.38
(Multiple Criteria)

Information shall be gathered in each of the four categories.
At least one of the criteria **must be met by a score on a nationally normed test.**
Any data used to establish eligibility in one area shall not be used to establish eligibility in another area.
Any test score used to establish eligibility shall be ***current within two years.***
Data gathered and analyzed by a source outside the school system shall be considered as part of the nomination and evaluation process.

Mental Ability	Achievement	Creativity	Motivation
≥ 96th percentile, by age, on a composite/full scale score or appropriate component score of a ***standardized mental ability test***	≥ 90th percentile, by age or grade, on: Total Battery **OR** Total Reading **OR** Total Math of a ***standardized achievement test*** **OR** A numerical score ≥ 90 on a scale of 1-100 on a **superior *student-generated product or performance*** evaluated by a panel of three or more qualified evaluators.	≥ 90th percentile on the Total Battery score of a ***standardized test of creative thinking*** (must measure: fluency, originality, and elaboration) **OR** Score ≥ 90th percentile on a ***standardized creativity characteristics rating scale*** **OR** A score ≥ 90 on a scale of 1-100 on a structured observation/evaluation of ***creative products*** and/or ***performances*** evaluated by a panel of three or more qualified evaluators	***GPA*** of at least ≥ 3.5 on a 4.0 scale in grades 3-12 **OR** A score ≥ 90th percentile on a **standardized motivational characteristics rating scale** **OR** A score ≥ 90 on a scale of 1-100 on a ***structured observation/evaluation of student-generated product or performance*** evaluated by a panel of three or more qualified evaluators

INITIAL ELIGIBILITY

A student must score at the 99th %ile (grades K-2) or the 96th %ile (grades 3-12) on the composite or full scale score of standardized mental ability test and meet one of the achievement criteria described above
OR
Qualify through a multiple-criteria assessment process by meeting criteria in any three of the four areas listed above.

Rule 160-4-2-.38 amendments
Adopted by GBOE 2.12.98

Blackline Master #19

Appendix B

Nomination Log

The Atlanta Public Schools Program for the Gifted and Talented

MULTIPLE CRITERIA NOMINATION LOG

SCHOOL: _____ **DATE:** _____ **ELIGIBILITY TEAM CHAIRPERSON:** _____

Student's Name	Ethnic Group	Grade Level	Source of Nomination				TABs		Data Collection Information 1st Eligibility Meeting Date: _____				Other supporting data	Student Referred?		Eligibility decision (Made after all data is in) Date:	
			Parent	Teacher	Auto-matic	other	Yes	No	IQ %	Achiev %	Creat Score	GPA Motiv.	Products/ Performance	Yes	No	Elig.	Not Elig
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2.																	
3.																	
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Collection of Ethnic Data is optional. Please use these codes: B(African-American) W(White) H(Hispanic) A(Asian) I(Native American) M(Multi-Racial) O (Other)

APS Gifted Program Form 2002-105 Revised August 2002

Appendix C

Traits, Aptitudes, and Behaviors Checklist

TRAITS, APTITUDES, AND BEHAVIORS (TABs)

Teacher's Name:_____ **School:** _____ **Grade or Subject:** _____ **Date(s) Observed:** _____

Directions: Observe students daily. Record the names of students in any of the 10 boxes when the student demonstrates superior or exceptional abilities as noted in the characteristics categories. Refer to the descriptions of each characteristic. Nomination source.

MOTIVATION	INTERESTS	COMMUNICATION SKILLS	PROBLEM SOLVING ABILITY	MEMORY
Evidences an intense desire to achieve. The student strives to satisfy a need or attain set goals.	Intense (unusual interests), activities, avocation. Objects, etc. have special worth or significance.	Highly expressive and effective use of words, numbers, and symbols.	Effective, inventive strategies for recognizing and solving problems. A correct sequence of alternatives for goal attainment.	Large storehouse of information. Innate ability to retain and retrieve information.
OBSERVABLE STUDENT TRAITS (What student may do . . .)				
• Persist in pursuing/ completing self selected tasks • Be a self starter • Be an enthusiastic learner • Aspire to be somebody, do something (note: these may be culturally influenced	• Demonstrate unusual or advanced interests in a topic or activity • Be beyond age group • Pursue an activity unceasingly • Demonstrate perseverance in pursuit of an interest	• Demonstrate unusual ability to communicate verbally, physically, artistically, symbolically) • Use particularly clever examples, illustrations, or elaborations	• Devise or adapt a systematic strategy for solving problems or change the strategy if it is not working • Create new design, invent • Understands what questions to ask to solve the problem	• Need only 1-2 repetitions for mastery • Have a wealth of information about a variety of topics • Pay attention to details • Manipulates information remembers experiences from the past (i.e. "when I was two . . .")
LIST STUDENT NAMES WHEN TRAITS ARE OBSERVED				

Adapted from Dr. Mary Frasier's *Panning for Gold Instrument*, UGA

APS Multiple Criteria Gifted Identification Process Training Manual, Revised Aug, 2002

APS TABs Instrument - Page 2

Teacher's Name:_____ **School:** _____ **Grade or Subject:** _____ **Date(s) Observed:** _____

Directions: Observe students daily. Record the names of students in any of the 10 boxes when the student demonstrates superior or exceptional abilities as noted in the characteristics categories. Refer to the descriptions of each characteristic. Nomination source.

INQUIRY	INSIGHT	REASONING	CREATIVITY	HUMOR
Questions, experiments, and explores. Seeks in-depth knowledge and understanding of information	Quickly grasps new concepts and makes connections, senses deeper meaning. Sudden discovery of the correct	Logical approaches to figuring out solutions. Forward-looking, goal oriented though. Highly conscious, directed & active.	Inventiveness. Problem solving through non traditional patterns of thinking. Produces many ideas.	Conveys, picks up on humor. Ability to synthesize key ideas or problems in complex situations in humorous ways. Exceptional timing, gestures
OBSERVABLE STUDENT TRAITS (What student may do . . .)				
• Ask unusual questions for their age • Plays around with ideas • Demonstrates extensive exploratory behaviors	• Demonstrate exceptional ability to draw inferences • Appears to be a good guesser • Be keen observer • Possesses capacity for seeing unusual and diverse relationships • Integrated ideas and disciplines	• Makes generalizations in using everyday materials • Uses metaphors and analogies • Things thinks through logically • Thinks critically • Be an excellent planner	• Show ingenuity in using everyday materials • Exhibit wild, seemingly silly ideas • Produces ideas fluently/ flexibly • Be highly curious	• Exhibits keen sense of humor, may be gentle or hostile • See relationships and creates jokes or puns • Has depth and understanding of humor/emotions
LIST STUDENT NAMES WHEN TRAITS ARE OBSERVED				