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Assumptions Underlying the Identification of Gifted and Talented Students

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Abstract

This study examined a national sample of teachers of the gifted, classroom teachers, administrators, and consultants from rural, suburban, and urban areas about their assumptions underlying the identification process. The respondents indicated the degree to which they agreed or disagreed with 20 items that reflected Dr. Marshall Sanborn's guidelines for a comprehensive identification system. Five factors were derived from the 20 items. The respondents favored the use of individual expression criteria, on-going assessment, use of multi-criteria for identification, and consideration of contextual factors. Teachers of the gifted and respondents from urban areas were more likely to favor these strategies. The sample opposed restricting identification to the sole use of achievement or IQ scores.

Putting the Research to Use

Discrepancies exist between the beliefs expressed by educators in this study and the identification practices documented by other researchers in recent years. The challenge for practitioners is to bring beliefs and practices together. To achieve this, the following strategies are suggested: biographical and autobiographical data; products or portfolio reviews; performance assessment; product development; and self-, peer-, or parent nominations. A flexible approach that is oriented toward developing gifted behaviors, rather than an absolutist view of "the gifted" is recommended. The identification system should include an on-going review of student progress that encourages talent development.

Assumptions Underlying the Identification of Gifted and Talented Students

Its better to have imprecise answers to the right questions
than precise answers to the wrong questions.
Donald Campbell

Procedures for identifying the gifted and talented are probably the most discussed and written about topic in our field. For the better part of the previous century test scores dominated the identification process, and even with the advent of new theories of intelligence (e.g., Gardner, 1983; Sternberg, 1985) and broadened conceptions of giftedness (e.g., Gagné, 1999; Renzulli, 1978, 1988; Simonton, 1997), actual practices specified in state and district level guidelines continue to be dominated by cognitive ability test scores. Recognition of the need for a broader base of identification criteria have progressed from theoretical and research based advances to generally accepted recommendations included in standard textbooks in the field (Colangelo & Davis, 1999; Coleman & Cross, 2001; Davis & Rimm, 1998; Gallagher & Gallagher, 1994; Maker & Nielson. 1996; VanTassel-Baska, 1998). The quest for objectivity has undoubtedly perpetuated the comfort that "numbers" and the tidiness of cut-off scores have provided for persons designing identification systems; however, persons closest to direct services (classroom teachers and teachers of the gifted) often challenged the validity of purely objective approaches. Frequently commented upon are examples of high levels of performance and creativity among non-selected students and the inability to provide program sponsored opportunities, resources, and encouragement to students who clearly show potential for benefiting from such services.

What is interesting about differences between recent developments in theory and teachers' reactions to identification decisions is that no one has examined empirically the attitudes of persons most affected by identification systems and persons who frequently make policy decisions or advise decision makers. The beliefs of practitioners and policy makers are important because, in the final analysis, these are the persons who must carry out their responsibilities harmoniously and insure that there is integrity between guidelines and regulations on one hand and the implementation of program practices on the other. Therefore, the overall question for this research is, "What are the assumptions of educators underlying the identification of gifted and talented students?"

Background of the Study

Historically, the identification of gifted and talented students has been inextricably linked to intelligence tests. During the early part of the 20th century, Terman (1916, 1925) focused on developing and administering the Stanford-Binet Intelligence Scale, based on the earlier work in France by Binet. Terman offered his well-known premise that essentially stated that gifted and talented individuals are those who scored at the top 1% of the population on the Stanford-Binet Intelligence Scale. In the minds of many, the phrase gifted and talented equaled an intelligence test score of at least 135. Students responded to items, their answers were compared to others, and the results were calculated. The resulting IQ score seemed precise and the measurement approach carried with it a bit of mystery for those who may not be totally familiar with test construction and interpretation of resulting data. Some may have wondered what the number

meant for the students' future or their ability to successfully navigate the requirements of school, while others had a measure of comfort with the notion that the student scored higher than 99% of others who took the test. Intelligence became synonymous with what the test measured. A child was labeled as gifted and talented by a cut-off score on an intelligence test, which promoted an absolutist view of giftedness. All other children who did not achieve the cut-off score were viewed as "not gifted."

Intelligence and achievement tests continue to be developed and modified to inform teachers, administrators, psychologists, parents, and the general public about the characteristics of children and adults. Their influence on people's views of children's abilities remained strong throughout the 20th century.

Exploring the expressed and applied abilities of young people is a complex process at best. We know that certain assessment tools are administered to establish an objective profile of students' intellectual abilities. Terman's longitudinal study of "geniuses" also revealed the difficulties in predicting what a person accomplishes in life. Terman's research team (Oden, 1968) analyzed the accomplishments of the single generation of 1,528 geniuses over time and recognized the various career achievements of the group. The early intelligence test score was not necessarily the main determinant of adult accomplishments.

Tannenbaum (1991) reflected on the contributions of Terman and associates and stated: "In the last analysis, high IQ is a boon or a bust in the configuration of factors that make up giftedness, depending on how much confidence is invested in it" (p. 31). The complexities of understanding of one's current and future abilities and accomplishments are somewhat daunting. Tannenbaun offered a five-factor conception of giftedness if a person is to "achieve excellence in any publicly valued area of activity" (p. 29). He stated ". . . five factors have to interweave most elegantly: (1) superior general intellect, (2) distinctive special aptitudes, (3) supportive array of nonintellective traits, (4) a challenging and facilitative environment, and (5) the smile of good fortune at crucial periods of life" (p. 29). The final factor adds levity to the heady topic of intellectual ability, but it is also poignant because of the insistence that one measure cannot begin to fully define or explain giftedness. General intellectual ability and specific aptitudes are revealed by tests, but there is more to understand about giftedness. Breaking away from a reliance on tests to determine abilities is not easy. Some people may think that using an achievement test rather than an intelligence test makes a difference. However, several researchers, including Sternberg (1985) and Sattler (2001) believe that intelligence tests and achievement tests are so similar that a quest to broaden conceptions of giftedness by including achievement is halted.

In 1950, Guilford proposed a theoretical model of intelligence that included an emphasis on creative thinking and problem solving. The multiplicity of over 150, and eventually over 220, abilities caught people's attention, as did views of other psychologists and researchers who proposed multiple abilities. Later, Renzulli (1978, 1988) re-examined the definition of giftedness by reviewing the research findings of several notable researchers and psychologists and looked for the substantiation of factors beyond ability that played critical roles in actualizing potential. Essentially, he wanted to know the characteristics of creative productive adults that defined gifted behaviors. His review led to the following definition:

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

In later years, Gardner (1983) proposed the theory of multiple intelligences. Seven intelligences (i.e., linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, and intrapersonal) were identified initially and one has been added more recently—naturalist. One or more of these intelligences could be the focus of an identification procedure. While Gardner posited a domain approach to intelligences, Sternberg (1985) developed his triarchic theory of intelligence. Sternberg cogently argued against the reliance on IQ as the sole determinant of giftedness. His triarchic theory looked at analytical, synthetic/creative, and practical intelligences as singular and multiple forms of abilities. Both Gardner and Sternberg's theoretical approaches are carefully defined and researched. These theorists have also experimented with various formal and informal measurement techniques, but neither theoretical model limits the assessments of children's gifts and talents to paper and pencil, timed tests, yielding a single or multiple scores.

As more current theoretical perspectives on abilities and talents embrace intellective and non-intellective characteristics, identification procedures have to reflect such changes. One way to check the status of definitions of gifted and talented students and related assessment approaches is to review summary data from The Council of State Directors of Gifted and Talented Programs. The state directors produce the results of a biennial survey on the status of identification and programming at the state level and in the territories. Questions focus on the existence of legislative mandates that guide the direction of screening and identification procedures and/or the requirement of programming. Definitions of gifted and talented are provided by states. For example

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

> Gifted and talented children are those who by virtue of outstanding abilities are capable of high performance. These are children who potentialities can be realized through differentiated educational programs and/or services beyond those normally provided by the regular school program. Children capable of high performance include those with demonstrated achievement or potential in any of the following areas, singly or in combination: general intellectual ability, specific academic aptitude, creative or productive thinking, leadership ability, visual and performing arts. (Minnesota)

Many state definitions have similar language, although the specificity varies, to one developed by a team of people in response to a governmental request of the then commissioner of education, Sidney Marland. The 1972 Marland definition stated:

> Gifted and talented are those identified by professionally qualified persons who by virtue of outstanding abilities are capable of high performance. These are children who require differentiated educational programs and services beyond those normally provided by the regular school program in order to realize their contributions to self and society.
>
> Children capable of high performance include those with demonstrated achievement and/or potential in any of the following areas:
>
> 1. General intellectual ability
> 2. Specific academic aptitude
> 3. Creative or productive thinking
> 4. Leadership ability
> 5. Visual and performing arts
> 6. Psychomotor ability (p. 10)

Over the years, the "Marland definition" changed (i.e., psychomotor ability was eliminated), but many elements were retained, maintaining a broader perspective on demonstrated and potential abilities.

As our understanding of human abilities expanded, we began to embrace multiple methods of examining gifts and talents of young people. A review of the literature revealed that one of the earliest sets of guidelines for a comprehensive identification system was presented in an unpublished paper presented by Marshall Sanborn at the University of Connecticut and reported in a book on identification by Renzulli, Reis, and Smith (1981). Based on his work with a broad range of diverse students at the University of Wisconsin, Sanborn argued that a broad-based comprehensive identification system should include the following guidelines:

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

Methods

Procedure

Sanborn's guidelines were studied, along with a review of the literature, to create an item pool that would become the basis for a national survey, *The Assumptions Underlying the Identification of Gifted and Talented Students*. Sanborn's guidelines were selected because they reflect an amalgamation of the collective wisdom of the major theorists, researchers, and

textbook writers in the field at the time when broader conceptions of giftedness began to emerge. Items were generated, field-tested, revised, and field-tested again with content area experts (professors and doctoral students majoring in gifted and talented education) and participants at gifted and talented conferences. Twenty revised items were ultimately retained and the survey was disseminated to potential respondents.

Sample

A total of 6,000 surveys were mailed or distributed. We mailed surveys to university professors, educational leaders in gifted education, gifted and talented specialists, administrators, and classroom teachers. We also distributed surveys to educators around the country at two national conferences on the gifted and talented and several workshops conducted by The National Research Center on the Gifted and Talented staff. Although a systematic geographic distribution was not sought, each region of the country was represented (see Figure 1). The respondents returned approximately half of the surveys (*n*=2,918). Since a 50% response rate is considered adequate for survey research, follow-up mailings were not conducted.

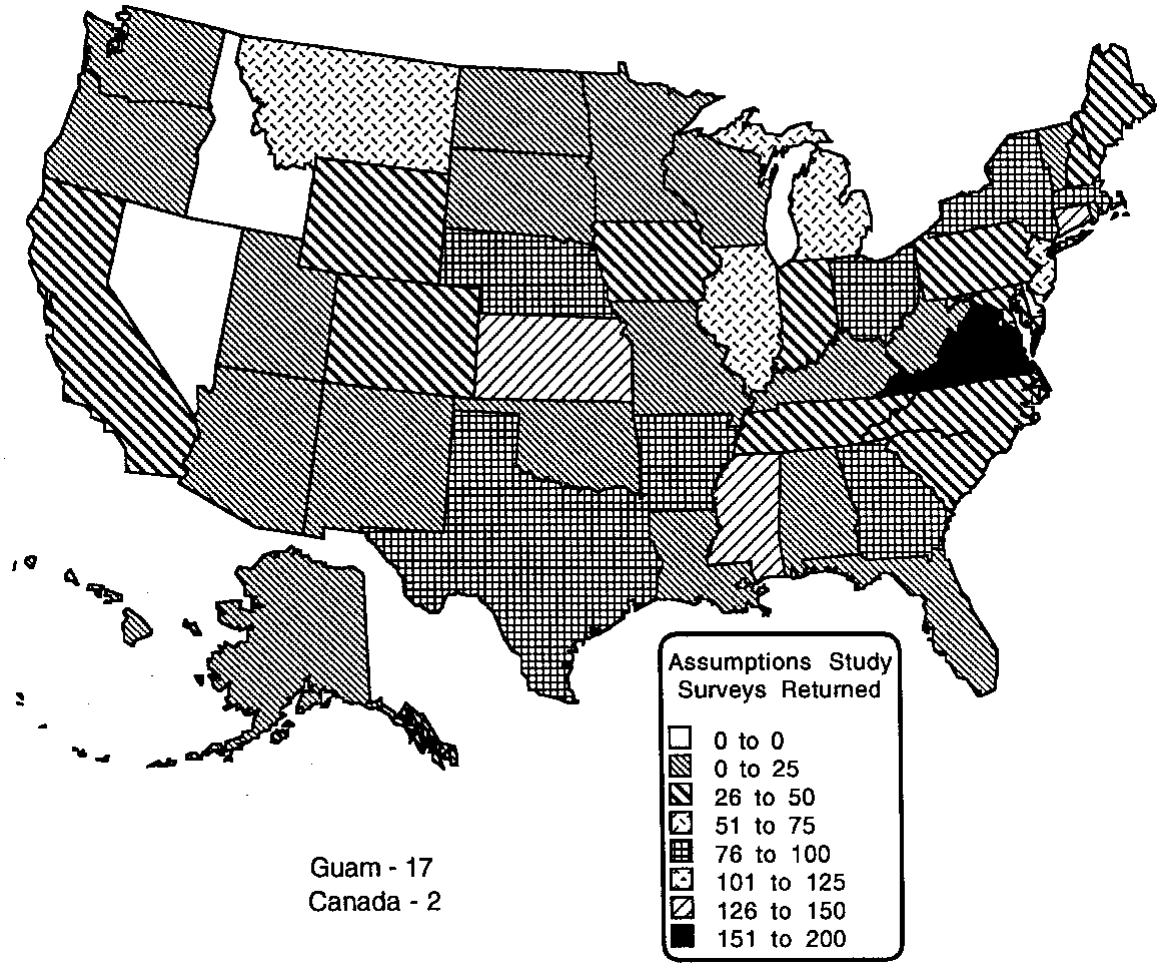

Figure 1. Survey Respondents by State

All types of communities were represented, including those with diverse demographic, ethnic, and socioeconomic characteristics. Teachers at all grade levels and administrators with various building and district level responsibilities were included in the sample. We subdivided the sample by school setting, educator classification, and respondents' professional level. There were 579 respondents from urban schools, 1,323 from suburban schools, and 1,016 from rural schools. Within the educator classification, there were 489 teachers of the gifted, 1,099 regular classroom teachers, 253 professors and consultants, 912 administrators, and 165 individuals who did not indicate an educator classification. The respondents' professional level indicated 1,033 in elementary education, 1,467 in secondary education, 171 in post-secondary education, and 247 who did not indicate a professional level.

Instrument

The survey featured 20 items, each with a five-point scale (1= *strongly agree*, 2= *agree*, 3= *uncertain*, 4= *disagree*, and 5= *strongly disagree*). Respondents were asked to indicate the degree to which they agreed or disagreed with each item. Sample items included statements such as the following:

- Identification should be based primarily on an intelligence or achievement test.
- Teacher judgment and other subjective criteria should not be used in identification.
- Identification should take into consideration the cultural and experiential background of the student.
- Giftedness in some students may develop at certain ages and in specific areas of interest.
- Regular, periodic reviews should be carried out on both identified and non-identified students.

Given the number of items, the most parsimonious way to interpret the results was to distill the data using a factor analysis. This type of analysis searches the data set for correlations and determines the number of underlying factors in the instrument. To test the appropriateness of conducting a factor analysis of the assumptions survey, we used the Kaiser-Meyer-Olkin (KMO). The KMO is an index for comparing the magnitudes of the observed correlation coefficients to the magnitudes of partial correlation coefficients (Norusis, 1990). Small values for the KMO measure indicate that a factor analysis of the variables may not be advisable, since correlations between pairs of variables cannot be explained by the other variables. Kaiser (1974) characterizes measures in the 0.90's as marvelous, and in the 0.80's as meritorious. The value of the overall KMO statistic for the current sample study was 0.87. Since it was between 0.8 and 0.9, we comfortably met the Kaiser criteria for conducting a factor analysis.

Since the squared multiple correlations (SMC) of each variable with all other variables of this study ranged from 0.10 to 0.33, (mean=0.21), 0.30 was used as a critical value for the eigen values of the correlation matrix after the substitution of communality estimates at final iteration to specify the number of factors. Principal Axis Factoring (PAF) with a varimax rotation extracted six factors from the 20 items. These six factors (see Table 1) explained 51.6% of the variance in initial correlation matrix, and 31.9% in final matrix.

To test the reliability of each factor, Cronbach's alphas were conducted. The resulting reliability estimates were 0.61, 0.67, 0.51, 0.54, 0.65, and 0.36, respectively. The sixth factor had a very low alpha and consisted of only two items. Four outside experts in gifted education believed that the items of the fifth and sixth factor were conceptually connected and these two factors could be collapsed. The revised factor analysis with a five-factor solution accounted for 47.1% of the total variance. The new factor (a combination of factors 5 and 6) included items 5, 16, 12, 20, and had an alpha=0.52. The final five factors were: Restricted Assessment, Individual Expression, On-going Assessment, Multi-Criteria, and Context-Bound. Restricted Assessment involved the sole use of test data with precise cut-off scores. Individual Expression emphasized case study data with multiple formats for students to express their talents. On-going Assessment advocated periodic review using alternative criteria. Multiple-Criteria involved selection based on multiple types of information. Context-bound considered student's cultural, environmental, and experiential background. We created factor scale scores for each of the five factors by summing the values associated with each item of each factor and dividing by the number of items for each respondent in the sample. The item means, standard deviations, and factor loadings for the factors are shown in Table 1.

Data Analysis

To check for potential outliers in the data set, the Mahalanobis' distance for centroids procedure was conducted. The Bonferroni adjustment based on the number of the subjects showed that there were 16 outliers in this sample. These outliers were eliminated from further analyses, since they might adversely affect further statistical analyses. Once removed, the sample was considered free of outliers.

Since the five factors appeared to be related and the correlations among the factor scale scores ranged from .22 to .45, a multivariate analysis of variance procedure (MANOVA) was appropriate to examine differences in responses according to demographic information. The dependent variables were the five factor scale scores and the independent variables were School Setting (urban, suburban, and rural), Educator Role (gifted, regular, consultant, and administrator), and respondent's Professional Level (elementary, secondary, and post-secondary).

Two of the three MANOVA main effects were found to be statistically significant; School Setting (Wilks lambda=.989; F=3.56; p<.001) and Educator Role (Wilks lambda=.98; F=4.82; p<.001). Professional Level (Wilks lambda=.99; F=1.807; [ns]) was not statistically significant. None of the interaction effects were statistically significant. As a follow-up, univariate analyses of variances (ANOVAs) were conducted on the two significant main effects. Because there were multiple ANOVAs, a modified Bonferroni type adjustment (Tabachnick & Fidell, 1989) was made for inflated Type I error. We set the alpha level for each analysis to $p \leq .01$. We found significant differences among School Settings on the Multiple Criteria and Context-Bound factors. We also found significant differences among Educator's Roles on all but the Individual Assessment factor. The ANOVA results are presented in Table 2.

Table 1
Item Means, Standard Deviations, and Factor Loadings for the 20-item Survey

Item	*M*	*SD*	Loading
Factor I: Restricted Assessment, *M*=3.96, *SD*=.60, Alpha=.63			
4. Achievement/IQ	3.86	1.03	.58
8. Precise cut-off score	3.58	1.08	.69
11. No teacher judgment/subjective criteria	4.13	.84	.59
14. Restricted percentage	4.13	.84	.65
15. Services for identified students only	3.95	1.00	.60
Factor II: Individual Expression, *M*=1.71, *SD*=.48, Alpha=.67			
6. Case study data	1.67	.63	.47
7. Assess student-selected tasks	2.11	.80	.71
10. Multiple formats for expressing talent	1.44	.58	.58
19. Non-intellectual factors	1.64	.69	.64
Factor III: On-Going Assessment, *M*=1.85, *SD*=.41, Alpha=.51			
9. Identification information lead to programming	1.81	.60	.51
13. Judgment by best qualified person	1.91	.62	.59
17. Alternative identification criteria	1.85	.70	.55
18. Regular periodic reviews	1.84	.63	.54
Factor IV: Multiple-Criteria, *M*=1.32, *SD*=.37, Alpha=.55			
1. Multiple expression of abilities	1.18	.41	.76
2. Developmental perspective and interest	1.54	.65	.67
3. Multiple types of information	1.26	.48	.62
Factor V: Context-Bound, *M*=2.13, *SD*=.55, Alpha=.65			
5. Cultural/experiential background	1.99	.90	.82
16. Knowledge of student's cultural/environmental background	1.99	.75	.74
Factor VI: Un-Named, Alpha=.37 (Alpha=.53 when combined with Factor V)			
12. Locally developed methods and criteria	2.27	.84	.67
20. Reflect services and activities provided	2.30	.99	.75

Table 2
ANOVA Results for School Setting and Educator's Role

Factor	*F*	*df*	*p*
School Setting			
Restricted Assessment	0.82	2, 2584	.442
Individual Expression	1.22	2, 2584	.296
On-going Assessment	1.18	2, 2584	.308
Multi-Criteria	7.35	2, 2584	.001
Context-Bound	4.53	2, 2584	.01
Educator's Role			
Restricted Assessment	4.30	3, 2584	.005
Individual Assessment	1.57	3, 2584	.195
On-going Assessment	16.45	3, 2584	.001
Multi-Criteria	22.14	3, 2584	.001
Context-Bound	21.95	3, 2584	.001

The univariate approach requires certain assumptions about the data used (Tabachnick & Fidell, 1989). Since cells in this study were not equal by the grouping characteristics, the main assumption required for using the univariate results is that the variances of all the "transformed variables" for each effect be equal and that their covariances be 0 (Norusis, 1990). Mauchly's test of sphericity is appropriate for testing the hypothesis that the covariance matrix of the transformed variables has a constant variance on the diagonal and zeroes off the diagonal. This was used to test this assumption. It should be noted that for large sample sizes, Mauchly's test may be significant even when the impact of the departure on the analysis of variance results may be small (Norusis, 1990). The sample size in this study was very large and the hypothesis of sphericity was rejected. Since the sphericity assumption appeared to be violated, modifications to the univariate results were conducted.

Based on the results of univariate variance analysis, follow-up tests were conducted. Scheffé's procedure was used because of unequal cell sizes. These analyses utilized an alpha of 0.05. The results of the Scheffé statistical tests for School Setting indicated that for Multi-Criteria [Cohen's d=.29] and Context-bound [Cohen's d=.22]), rural respondents were found to have statistically higher means than the urban respondents (p<.05). Since the factor scores are on the same scale of measurement as the original items, lower means indicate greater levels of agreement (1=*Strongly Agree* and 5=*Strongly Disagree*). Additionally, the results indicated that rural respondents had a higher mean on the Multi-criteria factor than the suburban respondents (p<.05, Cohen's d=.24), but there was no significant difference between the means for the urban and suburban respondents. In contrast, the Context-bound factor was found to have a significantly higher mean for suburban respondents than urban respondents (p<.05, Cohen's d=.20), but no significant difference between the suburban and rural respondents. The means and standard deviations for School Setting are presented in Table 3.

Table 3
Means and Standard Deviations by School Setting for Each Factor

Setting	Factors				
	Restricted Assessment	Individual Expression	On-Going	Multi-Criteria*	Context-Bound*
Urban	3.96 (.61)	1.67 (.47)	1.82 (.42)	1.27 (.35)	2.04 (.57)
Suburban	3.95 (.58)	1.71 (.48)	1.85 (.40)	1.29 (.35)	2.15 (.55)
Rural	3.91 (.60)	1.74 (.47)	1.87 (.40)	1.38 (.40)	2.16 (.54)

* Significant univariate results that warranted Scheffé post hoc.

The Scheffé results for the Educator Role and factors revealed that teachers of the gifted ($p<.05$, Cohen's $d=.15$) and consultants ($p<.05$, Cohen's $d=.14$) had significantly higher means (greater disagreement) on the Restricted Assessment factor than classroom teachers. There were no other significant differences among the educator roles on the Restricted Assessment factor.

The On-going Assessment factor mean was highest (strongest disagreement) for the regular teachers and lowest for the teachers of the gifted. The mean for the gifted teachers was significantly lower than any of the other three educator groups (classroom teachers [$p<.05$, Cohen's $d=.43$], administrators [$p<.05$, Cohen's $d=.29$], and consultants [$p<.05$, Cohen's $d=.18$]), indicating the greatest level of support for the On-going Assessment factor by this group of teachers. There were no significant differences among the means of the other three educator groups.

The results for the Multi-criteria factor indicated that the mean responses of the teachers of the gifted were significantly lower than the responses for the regular teachers ($p<.05$, Cohen's $d=.46$) and administrators ($p<.05$, Cohen's $d=.27$), but were not significantly different from the consultants. Additionally, the administrators' mean response was significantly lower than the regular teachers' mean ($p<.05$, Cohen's $d=.18$) for this factor.

The mean response for the teachers of the gifted on the Context-bound factor was found to be significantly lower than each of the other three educator groups (classroom teachers [$p<.05$, Cohen's $d=.51$], administrators [$p<.05$, Cohen's $d=.37$], and consultants [$p<.05$, Cohen's $d=.29$]). There were no significant differences among the means for the regular teachers, consultants, and administrators. The means and standard deviations for Educator's Role are presented in Table 4.

Discussion and Conclusions

For decades the "metric of giftedness" has been test scores, more specifically IQ scores. The tradition of relying on IQ scores to define one's ability curried favor with psychologists and educators as the technology of measurement took hold. Numbers became the determinant of what we thought students could accomplish in school. We were comfortable with an objective approach to assessing abilities. The level of comfort, however, was often challenged when there were dramatic differences between the academic accomplishments of our students and what the numbers predicted. We soon realized that the prophecy of the numbers was really just for future

numbers on the same or similar tests. Assumptions about identification techniques definitely influence the process and strategies one uses to screen and identify gifted and talented students.

Table 4
Means and Standard Deviations by Educator's Role for Each Factor

Educator's Role	Factors				
	Restricted Assessment*	Individual Expression	On-Going*	Multi-Criteria*	Context-Bound*
Gifted	3.99 (.60)	1.67 (.50)	1.73 (.41)	1.22 (.30)	1.93 (.52)
Regular	3.90 (.57)	1.67 (.50)	1.90 (.39)	1.38 (.40)	2.18 (.53)
Administrator	3.97 (.61)	1.72 (.44)	1.85 (.41)	1.31 (.37)	2.11 (.56)
Consultant	3.98 (.61)	1.68 (.48)	1.81 (.44)	1.26 (.33)	2.08 (.59)

* Significant univariate results that warranted Scheffé post hoc.

The survey results present an interesting picture of the assumptions underlying identification practices. Respondents disagreed with a restricted approach and supported individual expression, on-going assessment, and context-bound procedures. Furthermore, they strongly agreed with the importance of using multiple criteria for the identification of gifted and talented children. This does not sound too unusual; these assumptions are part of the litany of the responses to the question: How do you identify gifted and talented students?

Overall, gifted teachers were in favor of expanded views of giftedness and were certain that there were many identification techniques that would be most appropriate in studying the obvious and emergent talent potential of students. Perhaps their responses to the survey paint a slightly different picture because of first-hand experience with screening and identification systems that they designed or implemented based on an agreed upon system developed in conjunction with state regulations. Administrators, consultants, and classroom teachers may have played more indirect roles in reviewing or monitoring an existing identification system. Therefore, their convictions about the various assumptions were not as strong.

What is unusual, and somewhat perplexing, about the assumptions underlying the identification of gifted and talented students is the discrepancy between these assumptions or beliefs expressed by educators and (a) subsequent practices documented by other researchers in recent times; and (b) the degree to which many states and school districts continue to use restricted approaches in their identification procedures.

In *The 1998-1999 State of the States Gifted and Talented Education Report* (Council of State Directors, 1999), the Council of State Directors of Programs for the Gifted reported on the status of identification requirements by state. They were asked to respond to the following survey question:

> If identification is mandated, which of the following are required as identification measures in your state?

1. Intelligence/ability/aptitude assessment
2. Academic achievement/performance assessment
3. Teacher/parent/student/peer nomination
4. Characteristics or behavioral checklists/observations
5. Grades/anecdotal records/student interest inventories/assessment of student motivation
6. Other

Of the 16 state directors who selected the numbered identification measures above, they indicated that the following measures were mandated:

94% Intelligence/ability/aptitude assessment
75% Academic achievement/performance assessment
44% Teacher/parent/student/peer nomination
44% Characteristics or behavioral checklists/observations
38% Grades/anecdotal records/student interest inventories/assessment of student motivation
63% Other

These percentages indicate, once again, that more objective measures, such as intelligence and achievement tests, are more frequently mandated than subjective measures, which require personal judgments of students' work, behaviors, or characteristics.

In The National Research Center on the Gifted and Talented Classroom Practices Study of over 3,000 third or fourth grade teachers, Archambault, Westberg, Brown, Hallmark, Emmons, and Zhang (1993) found that most of the public schools surveyed used achievement tests (79%), followed by IQ tests (72%), and teacher nomination (70%) as their main sources of data collection. The data sources were similar, but the order was different in the findings by Cox, Daniel, and Boston (1985): teacher nomination (91%), achievement tests (90%), and IQ tests (82%). Alvino, McDonnel, and Richert (1981) confirmed these procedures in an earlier study when they found that most identification procedures included intelligence tests, teacher nominations, and achievement tests. These procedures of using tests or teacher recommendations are limited, and they do not reflect the findings of this study on *The Assumptions Underlying the Identification of Gifted and Talents Students*.

Understanding that our assumptions or beliefs and practices may not be in full agreement is a first step in reviewing the appropriateness of existing or future identification policies and the specific identification practices that should be guided by state and local policy. We need to promote discussions centering around two simple, but recurring questions: Who are the gifted and talented? How do we find them? Responses to these questions will hopefully influence future beliefs and research-based practices that are more congruent than those revealed in the present study. The challenge then is to bring beliefs and practices together and to include other techniques, such as biographical and autobiographical data; product or portfolio review; performance assessment; product development; and self-, peer-, or parent-nomination in the development of a flexible and defensible identification system that is responsive to the educational needs of our students.

Most of the confusion and controversy surrounding the identification of giftedness can be placed into proper perspective if we examine a few key questions. Is giftedness an absolute or relative concept? That is, is a person either gifted or not gifted (the absolute view), or can varying degrees of gifted behaviors be developed in certain people, at certain times, and under certain circumstances (the relative view)? Is gifted a static concept (i.e., you have it or you don't have it) or is it a dynamic concept (i.e., it varies within persons and learning/performance situations)?

These questions have led us to a fundamental change in the ways in which we believe the concept of giftedness should be viewed in the future. Except for certain functional purposes related mainly to professional focal points (i.e., research, training, legislation) and to ease-of-expression, we believe that the absolutist view of "the gifted" is not supported by current theory, research, and the assumptions of the various groups represented in this study. This research, plus the contributions of Bloom (1985); Gardner (1983), Renzulli (1978, 1988) among others, suggest that we shift emphasis from the traditional concept of "being gifted" (or not being gifted) to a concern about the *development* of giftedness or gifted behaviors in those youngsters who have the highest potential for benefiting from special educational services. This slight shift in terminology might appear to be an exercise in heuristic hair splitting, but we believe that it has significant implications for the entire way that we think about the concept of giftedness and the ways in which we should structure our identification and programming endeavors. We must reexamine identification procedures that result in a total *pre*-selection of certain students and the concomitant implication that these young people are, and always will be "the gifted." This absolute approach (i.e., you have it or you don't have it) coupled with the almost total reliance upon test scores is not only inconsistent with what the research tells us, but almost arrogant in the assumption that we can use a single, one-hour segment of a young person's life to determine special program placement.

The alternative to such an absolutist view is that we may have to forego the "tidy" and comfortable tradition of knowing on the first day of school who is gifted and who is not. Rather, our orientation must be redirected toward developing gifted behaviors, and we must be bold enough to change restrictive guidelines and regulations. The research in favor of a more flexible approach is so overwhelming that it no longer needs to be argued (see, for example, Sternberg & Davidson, 1986); and therefore, it is time to examine identification guidelines and practical procedures (Renzulli, 1990) that are more consistent with present day research on human abilities.

Fortunately, some states have made changes in existing guidelines, and others have allowed greater access to services for underrepresented groups by allowing more flexibility in the interpretation of present regulations and guidelines. To be sure, there will be less tidiness in the identification process, but the trade off for tidiness and administrative expediency will result in a much more equitable approach to both identification and programming, and a system that not only shows greater respect for the research reported here, but one that is more acceptable to educators represented in this study.

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