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Newsletter

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Responding to the Written Word:

Issues in Educating Gifted & Talented Students

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All of the researchers associated with The National Research Center on the Gifted and Talented have been paying particular attention to their ability as wordsmiths as they cast the complex findings of applied research studies in different formats for multiple audiences. We write research monographs, journal and newsletter articles, briefing sheets, executive summaries, and practitioners' guides about the issues in educating gifted and talented students. The amount of paper that passes through laser printers and photocopiers is absolutely phenomenal. We are on a first name basis with the people who repair the machines; oftentimes they just stop by to see how things are going because they know the machines are operating around the clock.

The only people who approach our office tentatively are from the central warehouse and the university mail room. Their level of tentativeness is based on the number of crates of paper to be delivered to keep the photocopiers running or on the number of pallets of mail to be hauled to the mailroom for postage. A steady stream of people schleps the latest NRC/GT documents emblazoned with the university seals from one place to another. NRC/GT members join the parade which begins to look like an old-fashioned fire brigade as containers pass from one person to the next.

Getting the word out about NRC/GT's applied

research has been a high priority since the early days of the Center. We didn't want the research results logged into journals or magazines and then placed on bookshelves without grabbing the attention of readers. We wanted educators to read the documents and to apply the findings in their classrooms. Joseph S. Renzulli, Director of NRC/GT, designed a dissemination plan that rivaled those of marketing experts. The plan is essentially a "chain letter approach." We send documents to all the people in our network; they in turn disseminate them to others.

It is great that all of the documents are getting out to you and that they are once again hitting the glass surface of a photocopier to be shared with others. Tracking the number of people who receive our documents or who reprint them in their local publications is one way of determining the impact of the Center. Millions of people from all states, several territories, and a host of foreign countries have access to our documents! Now we are gathering data on what you think of the "written word." We have been randomly placing Reader Evaluation forms with our mailings, and we thought that we would take the liberty of sharing some reactions with you. We asked people what they learned, how they used the information, and whether the information had any impact on their students. Here is a sampler of their responses:

Please list two new things you have learned from reading the document.

Benefits of "Creativity" for disadvantaged youth. Materials for developing creativity.

– Richard E. Chandler, Arlington, TX

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That it's possible to summarize a big and important topic in concise and elegant format.

– Rena Subotnik, New York, NY

When teachers eliminate as much as 50% of curriculum for gifted children there is no difference in achievement test results.

– Ed Hinckley, Avon, CT

I will pretest my gifted students and allow them to opt-out (full or part time) of team work in math and/or reading and check their achievement the first 9 weeks of school. This will allow ability grouping and compacting.

– Joan D. Bodkin, Henderson, KY

My wavering faith was confirmed that some people in academia have their feet in the real world. I am so glad that a "Research Center" is able to see the real problems and address them in plain (thank you) English.

– Gina Ginsberg Riggs, Glen Rock, NJ

Briefly describe how you have used the new information in your present role/position.

Provided information to school administrators and school committee. As PTO president and parent representative, will share with other parents and place information at the parent information center at the public library.

– Kathy Borges, Somerset, MA

Will share with principal, city-wide G/T program. With administrator's permission, will duplicate (Ability Grouping) and share with teachers and parents.

– Josephine C. Baker, Washington, DC

Everything that you send has been shared with our statewide task force on gifted education that meets monthly and consists of parents, teachers, administrators, and community members. Some students attend at times. People select information of interest and use it in their local districts.

– Roberta Knox, Santa Fe, NM

I will be able to use this information when counseling parents of gifted children in possible approaches to their children's education, as well as in presentations to school personnel regarding approaches to serving gifted children in the classroom.

– Barbara Louis,
New Brunswick, NJ

I have used the reports/papers as readings for students, as resources for advocates, and as references for my work. Nice job on topic selection and authors. I have also posted information on Special/Net.

– Mary Ruth Coleman
Chapel Hill, NC

The next level of dissemination is to assess whether the information has had any impact on students. We asked the

following question, and we are beginning to see some preliminary results:

Has this new information had any impact on your students?

The information distributed by NRC, the research projects that local school districts have participated in, and the impact of Sally Reis's presentations at state conferences have changed programs.

– Conrad Castle, Jackson, MS

I have drawn many ideas from the monographs for use in my G/T and creativity books.

– Gary A. Davis, Madison, WI

It will this September! Past articles have changed the way I think and present lessons! Thanks so much!

– Sally Clemens, Bend, OR

It's nice to have your views/opinions of 15 years validated by research data. Helps me continue my G/T advocacy.

– Charlotte A. Candelaria, Sitka, AK

Has had impact on provision of information to coordinators in the field of gifted education. Next step for NRC/GT is to disseminate to other fields.

– Nancy B. Hamant, Worthington, OH

Keep it coming—it may..in the future be helpful.

– Juli Schenfeld, Johnstown, PA

This year's class promises one of the greatest achievement spreads in my experience. Yes, I believe you've given me ideas to explore.

– Joan D. Bodkin, Henderson, KY

Paper is only one form of communication. We also use satellite presentations, electronic mail, television, and radio. On any morning you might hear Joe Renzulli or Robert Abelman on National Public Radio or see a teleconference on cable television. Just keep tuning in. We will continue sending messages about research-based issues in gifted and talented education, and we hope to hear more from you about the impact of our research on your students or other constituents.

New Districts Involved with the NRC/GT

Lone Rock School District #13
Stevensville, MT

Lincoln Public Schools
Lincoln, NE

LaSalle Academy
Providence, RI

New Consultant Bank Members

George Betts
University of Northern Colorado
Greeley, CO

Maurice D. Fisher
Gifted Education Press
Manassas, VA

François Gagné
University of Quebec at Montreal
Montreal, Quebec
Canada

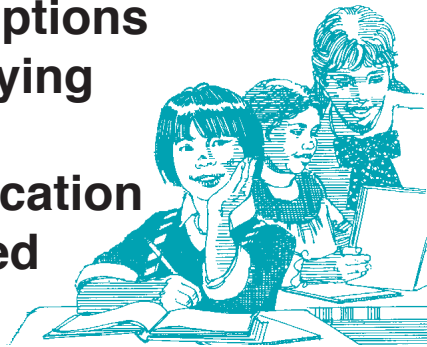
Merle B. Karnes
University of Illinois
Champaign, IL

Robert J. Kirschenbaum
Evergreen Assessment Center
Fort Lewis, WA

Maurice Miller
Indiana State University
Terre Haute, IN

Jane M. Piirto
Ashland University
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Assumptions Underlying the Identification of Gifted and



Talented Students

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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 carried favor with psychologists and educators at the turn of the century as the technology of measurement took hold. Numbers became the determinants of what we thought students could accomplish in school. We took comfort with a “solid 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. Given this insight, along with new theories of intelligence by Gardner (1983) and Sternberg (1985), we wanted to ask practitioners and policy makers about their assumptions underlying the identification process.

We recalled that several years ago Dr. Marshall Sanborn of the University of Wisconsin recommended the following guidelines for a comprehensive identification system in an unpublished paper cited in Renzulli, Reis, and Smith, 1981:

- Apply multiple techniques over a long period of time.
- Understand the individual, the cultural-experiential context, and the fields of activity in which he/she performs.
- Employ self-chosen and required performances.
- Allow considerable freedom of expression.
- Reassess the adequacy of the identification program on a continuous basis.
- Use the identification data as the primary basis for programming experiences.

Development of the Assumptions Survey

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 on the Assumptions Underlying the Identification of Gifted and Talented Students. Items were generated, field tested, revised, and field tested again with content area experts, graduate students majoring in gifted and talented education, and participants in the 1991 National Association for Gifted Children (NAGC) Conference. Twenty revised items were retained and the survey was disseminated to 6,300 potential respondents. The main source of respondents was The Collaborative School Districts associated with The National Research Center on the Gifted and Talented. Other sources included our Consultant Bank members and participants in a session at the 1992 NAGC Convention. Completed surveys were returned by 3,144 people from 47 states, one territory, and Canada, resulting in a 50% return rate. 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.

Respondents were asked to indicate the degree to which they agreed or disagreed with items reflected in Sanborn’s guidelines. A five point Likert scale was used ranging from strongly disagree to strongly agree. 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 large number of respondents and the number of items, the best way to interpret the results was to distill the data using a factor analytic approach, principal component analysis. This type of analysis would search the data set for correlations and determine the number of underlying factors in the instrument. Six factors were generated originally. Two factors had two items each; these factors were connected conceptually and were collapsed into a single factor, resulting in a five factor instrument. The twenty-item instrument could then be interpreted

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using the factor names and descriptors in Figure 1: Restricted Identification Practices, Individual Expression, On-going Assessment, Multiple Criteria, and Context-Bound Identification Techniques.

Factor	Item	Descriptor
1	Restricted	4. Achievement/IQ test
		8. Precise cut-off score
		11. No teacher judgment/subjective criteria
		14. Restricted percentage
		15. Services for identified students only
2	Individual Expression	6. Case study data
		7. Assess student-selected tasks
		10. Multiple formats for expressing talent
		19. Non-intellectual factors
3	On-going	9. Identification information leads to programming
		13. Judgment by best qualified persons
		17. Alternative identification criteria
		18. Regular, periodic reviews
4	Multiple Criteria	1. Multiple expression of abilities
		2. Developmental perspective and interest
		3. Multiple types of information
5	Context-bound	5. Cultural/experiential background
		16. Knowledge of students' cultural/environmental background
		12. Locally developed methods and criteria
		20. Reflect types of services and activities

Figure 1
Factor Names and Descriptors

Data Analyses and Interpretation

A review of the data analysis by educators, consisting of regular classroom teachers, teachers of the gifted and talented, administrators, and consultants, revealed significant differences in the extent of agreement or disagreement among these groups. For example, multivariate analysis of variance (MANOVA) procedures with the five factors of the instrument as the dependent variables and the four levels of educator as the independent variables revealed several significant differences. Following the multivariate analyses, univariate analyses of variance (ANOVAs) were computed for each dependent measure (Factors 1-5) separately. Scheffé's tests were used as the multiple comparison procedure to follow-up significant ANOVAs. The statistical data on each factor will be presented in another journal article that is in preparation. The major trends in the data will be highlighted.

It is interesting to note that the means for all educators indicated disagreement with Restricted Identification Practices (Factor 1) relying on intelligence or achievement tests, precise cut-off scores, exclusion of teacher judgment or subjective criteria, fixed percentage of students, and services

for identified students only. There were statistically significant differences in the level of disagreement between regular classroom teachers and teachers of the gifted, with the teachers of the gifted having greater disagreement. Regular classroom teachers and administrators also had statistically significant differences on Factor 1, with administrators having greater disagreement (see Figure 2).

Significant differences among the educators' level of agreement were not found for Factor 2 - Individual Expression, emphasizing the use of case study data, student-selected tasks, multiple formats for expressing talents, and non-intellectual factors (e.g., creativity and leadership). Educators agreed that identification techniques should be responsive and sensitive to the individual's ability to express talents and gifts through various measures or observation tools.

On all remaining factors, however, there were significant differences among the educators' responses. Regular classroom teachers agreed, but not as strongly as teachers of the gifted, administrators, and consultants, that On-going Assessment (Factor 3) was important. Educators believed that regular, periodic reviews involving judgments of persons best qualified to assess the student's performance were important considerations in designing and implementing a flexible identification system. They were also in agreement about using alternative identification criteria for specific performance areas. All of these data from alternative criteria, periodic reviews, or expert judgments provide direction and guidance for future programming experiences and opportunities.

A similar response pattern emerged for Multiple Criteria (Factor 4) with regular classroom teachers having significantly different responses from teachers of the gifted, administrators, and consultants. Regular classroom teachers agreed, but not as strongly, with statements emphasizing that gifted and talented students may express their abilities in many ways or that giftedness in some students may develop at certain ages and in specific areas of interest. Their level of agreement was also not as strong concerning the use of several types of information about a student as a basis for an effective identification plan.

The differences for Factor 5 (Context-bound Identification) were among teachers of the gifted and the other three groups: regular classroom teachers, administrators, and consultants. Teachers of the gifted had a stronger level of agreement than other groups of educators about their beliefs in the importance of the students' cultural, experiential, and environmental backgrounds, the need to

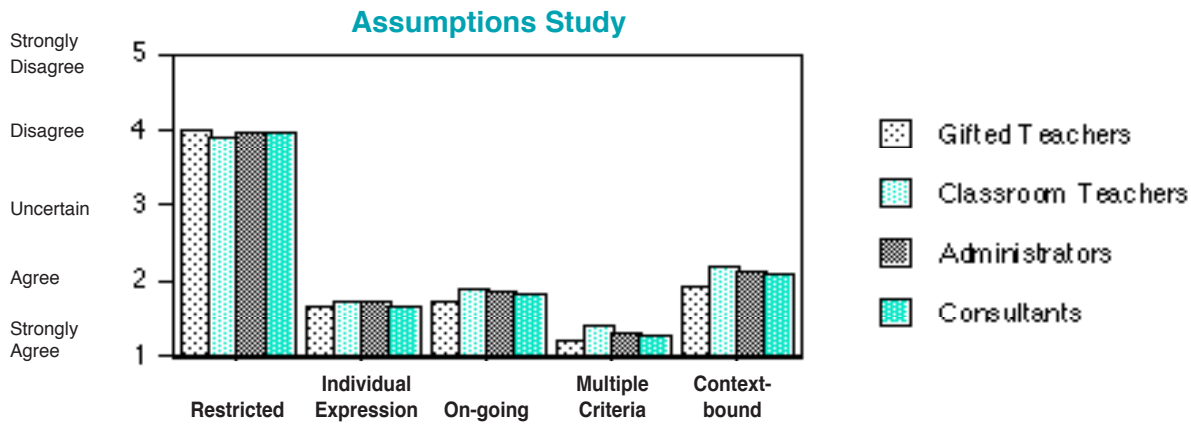


Figure 2
Mean Response by School Role

consider locally developed methods and criteria for specific populations, and the efficacy of matching the identification process with the services and activities available in the district. It appears that across all factors, the teachers of the gifted who work most closely with programming issues and practices have stronger opinions about the most appropriate identification practices.

Congruence of Research Findings and Practices

The survey results present an interesting picture of the assumptions underlying identification practices. Educators disagreed with a restricted approach, agreed with individual expression, on-going assessment, and context-bound procedures. Furthermore, they strongly agreed with the importance of using multiple criteria. This does not sound too unusual; these assumptions are part of the litany of the response to the question: How do you identify gifted and talented students? What is unusual and somewhat perplexing is the discrepancy between these assumptions or beliefs expressed by educators and subsequent practices documented by other researchers in recent times.

In the NRC/GT study on Classroom Practices 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, McDonnell, and Richert (1981) confirmed these procedures in an earlier study when they found that most identification procedures included intelligence tests, nominations, and achievement tests. These procedures of using tests or teacher recommendations are limited, and they do not reflect the findings of the study on the

Assumptions Underlying the Identification of Gifted and Talented 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; developmental identification; 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.

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A Study of the Status of Programs for High Ability Students



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Disagreement currently exists among experts, researchers, and journalists regarding the extent of concern and commitment related to the education of students with high abilities. Some believe the field is at the threshold of renewed interest; others believe that the field is facing a crisis in which programs for students with high abilities are being eliminated in states across the nation. Not only do experts, journalists, and educators disagree about the status of programs for these students, but they also disagree with respect to the nature of the reason(s) to attribute to current program status. Reasons mentioned include: economic factors, the effects of the reform movement, the existence or nonexistence of state mandates, and misconceptions regarding the needs of high ability students. Accordingly, the purpose of The Program Status Study, conducted in two phases from May, 1992 to January, 1993, was twofold: to determine from local personnel (i.e., district personnel responsible for coordinating and/or providing services to high ability students) the status of programs for these students and the reasons they attribute to the status of their district's program, and to triangulate these findings from local personnel with research findings from key personnel (i.e., state directors of education for high ability students, heads of state parent advocacy groups for high ability children, school superintendents, chairpersons of boards of education).

Twenty states, geographically representative and divided into four groups, participated in the research and included states in good economic health with a mandate to provide services to high ability students (Group 1), states in good economic health without a mandate (Group 2), states in poor economic health with a mandate

(Group 3), and states in poor economic health without a mandate (Group 4). The following findings from The Program Status Study are of particular interest to teachers, parents of exceptional students, as well as those who are responsible for policy decisions related to these students.

FINDING 1

Programs for high ability students in states from Group 1 (good economic health with a mandate) were, for the most part, stable and expanding; only 2 programs in 10 were reduced or

threatened with reduction or elimination in the 1991-1992 academic year. Programs in all other groups of states were jeopardized in higher numbers. One in four programs in states from Group 2 and Group 3 (good economic health without a mandate and poor economic health with a mandate, respectively) were threatened, reduced and/or eliminated. One in three programs in states from Group 4 (poor economic health without a mandate) experienced jeopardy.

The data indicate that program services for high ability students at the local level are not at the threshold of renewed interest. Instead they are experiencing setbacks of significant proportions in states in Group 2, Group 3, and Group 4. This finding was triangulated by three-quarters of key personnel (i.e., state directors of gifted education, heads of state parent advocacy groups, school superintendents, chairpersons of boards of education) who reported that the future of programs for high ability students was uncertain, that program delivery components would change (e.g., no more pull-out), or that programs would be reduced. Therefore, parents, teachers, and policy makers in all twenty states need to increase vigilance of programs for high ability students and increase advocacy on behalf of the students they serve. Advocacy is necessary at a number of levels, including at the classroom level between the teacher and parents of exceptional children; at the building level between parents and building administrators; at the district level among parents, teachers, central office staff, and board of education members; and at the state level among parents, teachers, and elected officials.

"The current research simply does not substantiate prior claims that programs are being eliminated coast to coast due to the reform movement, specifically the grouping issue...."

FINDING 2

The reason most frequently associated with program stability and expansion in states *with* a mandate (Group 1 and Group 3) was the existence of the mandate;

many local personnel indicated that without the mandate more programs would have been jeopardized. The reason most frequently associated with program stability in states *without* mandates was advocacy. Local personnel, as well as participants in Phase II of the research, indicated that the most powerful advocates for programs were parents of high ability students, characterized by participants as “articulate,” “persuasive,” and “powerful, especially during elections.” Ironically, many participants in the study did not believe parents were aware of their power to influence policy, nor did they believe parents used their power to maximize educational services for their children.

Thus, factors most associated with program stability were mandates and advocacy efforts. The data suggest that advocacy efforts need to be directed toward different groups of policy makers, depending upon the existence or nonexistence of a state mandate. Advocates for high ability children who want state mandates maintained need to direct a large proportion of their efforts toward policy makers in the legislative and executive branches of their state government. Advocates in states without mandates need to direct their efforts toward policy makers at the four levels mentioned earlier: the classroom level with teachers, the building level with administrators, the local or district level with board of education members, and the state level with policy makers in the legislative and executive branches of government. Regardless of the group targeted for lobbying efforts, the following strategies, carefully planned and orchestrated by interested parents, teachers and/or students, have proven effective: personal letters, group-sponsored letters, personalized information packets, newsletters, newspaper editorials, letters to the editor, news articles, petitions, personal phone conversations, personal visits or meetings, small group meetings, radio or TV talk shows, and press breakfasts and/or luncheons.

FINDING 3

The factor most frequently associated with program jeopardy across all groups of states and participants in both phases of the research was related to reduced local and state funds. The current research simply does not substantiate prior claims that programs are being eliminated coast to coast due to the reform movement, specifically the grouping issue, or due to racial bias. It is reasonable to conclude from the data that the strength of advocacy efforts will determine, in large part, the services for high ability students that are reinstated during better economic times.

FINDING 4

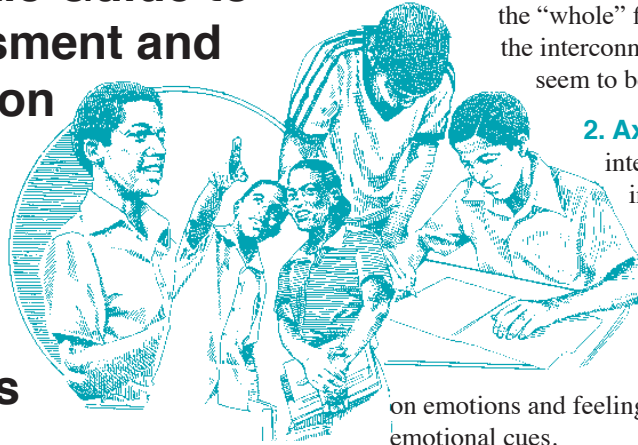
Services for high ability students are not comprehensive, Pre-K to 12. Students most likely to receive services are enrolled in the upper elementary and early middle school years; approximately 80% of students in grades 3-6 receive program services in Group 1, Group 2, and Group 3. Much smaller numbers of students receive services at either end of their public school experience in these groups of states. Only 40% of students in grades 1-2 receive services in these groups of states, and services for Pre-K students are almost nonexistent. Only half of the secondary students from these groups of states receive program services.

The picture of program services for students in states from Group 4 is more dismal. Sixty percent of students in grades 4-6 receive services, approximately 35% receive comparable services in grades K-3, and no services are available to students Pre-K. Finally, less than half the students in grades 7-8 are provided services, and only 30% of secondary students receive similar services.

To conclude, the current data present a bleak picture with respect to the comprehensiveness of services to high ability students in this sample of twenty states. This bleak picture exists despite research which indicates that high ability students can be identified at an early age and in spite of researchers who argue for more challenging educational opportunities and counseling services beyond those provided in the traditional high school. Clearly, teachers, parents, and policy makers from these states must advocate for educational services to serve children in important, formative years, as well as in secondary years where sufficient challenge is currently not being offered to them.

Recent Research

A Schematic Guide to the Assessment and Identification of African American Learners With Gifts and Talents



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Introduction

Previous research (Richert, 1987, VanTassel-Baska, Patton, & Prillaman, 1989) has found that individuals who are African American or who are from low socioeconomic status are at risk for inclusion in programs for the gifted and talented. Although African American learners compose approximately 16.2% of all students enrolled in American public schools, they make up only 8.4% of those enrolled in gifted programs (Alamprese & Erlanger, 1988). Among the reasons offered for this low representation have been the lack of a systematic, well-defined logic of inquiry for assessing and identifying gifts and talents among African American learners; overreliance on traditional assessment identification procedures; and the use of unidimensional IQ tests and other norm referenced tests. With this in mind, the purpose of this article is to offer a schematic guide to theory and development of assessment methodology and tests that should enhance our capacities to identify gifts and talents among African American learners that emphasize African American worldviews, ethos, and culture.

Developing a Theory of Assessment

Patton (1992) identifies three aspects of a “pure” African American philosophical system that could guide theory and development related to the identification and development of constructs of intelligence and giftedness, as well as subsequent selection of psychoeducational assessment methodologies and practices. They are:

1. Metaphysics. The individual uses a holistic view of reality and tends to engage in syncretical and

contextual thinking. Emphasis is placed on viewing the “whole” field and then understanding the interconnectedness of what might seem to be disparate parts of the field.

2. Axiology. Person-to-person interaction is important. The individual is committed to developing strong social bonds that often transcend individual privileges.

3. Epistemology. The individual places emphasis on emotions and feelings and is sensitive to emotional cues.

These orientations are considered “pure” because they reflect historical, classical, African oriented world views and ethos that form the foundation for the cultural themes of African Americans. Of course, not all African Americans embrace this “pure” philosophical system. Nevertheless, many African American learners relate strongly to this philosophical framework and reconstruct life experiences according to these world views. These philosophical world views, values, and behaviors auger for the development of assessment and identification systems that are grounded in pluralistic definitions and theories of giftedness and that include cognitive skills in addition to analytical abilities. Other manifestations of giftedness such as creativity, personality dispositions, and motivation states (Harris & Ford, 1991) must be included in definitions and theories of giftedness and subsequent assessment and identification systems, if they are to be responsive to the needs of African Americans.

Imperatives for Appropriate Assessment

Within the past 15 years, researchers have made advances toward the appropriate multidimensional assessment and identification of gifted African American learners. The following represents a synopsis of suggestions based on theory, research, and experiences that are considered effective in assessing and identifying gifted African American learners.

Screening

Hilliard (1976) and Torrance (1977) developed a checklist of rating scales for assessing the distinct social and psychological indicators of giftedness and creativity within a context of African American culture. Hilliard’s checklists, the “Who” and “O,” are based on the uniqueness and commonalities of African American cultures and place value on behavior that characterizes divergent experimentation, improvisation, inferential reasoning, and harmonious interaction

with the environment (Hilliard, 1976). On the other hand, Torrance (1977) identified a set of behaviors of African Americans that provides the basis for the development of his Checklist of Creative Positives. He identified 18 characteristics that he called "creative positives" to be used to help identify culturally different students as gifted. The inclusion of these checklists in the initial screening of potentially gifted and talented learners has been purported to increase the number of African Americans thereby identified (Frasier, 1989).

Identification

Historically, the use of traditional, norm-referenced, intelligence tests has not resulted in the proportionate identification of African American learners with gifts and talents. However, some intelligence tests, such as the Ravens Coloured, Standard, and Advanced Progressive Matrices, and the Matrix Analogies Test-Expanded and Short Form have been purported to be less culturally and class biased and thus show promise for increasing the number of African American students in gifted and talented programs.

Matrix and Profile Approaches

Several matrix and profile assessment models such as the Baldwin Identification Matrix and the Frasier Talent Assessment Profile take a more comprehensive approach to identifying gifted African American learners. These matrix and profile approaches require the collection of objective and subjective data from multiple sources (e.g., aptitude, achievement, performance, creativity, and psychosocial attributes). The information is then used to develop a profile to be used in the identification process.

Intervention Planning

Several curriculum-based assessment models such as The Program of Assessment, Diagnosis, and Instruction (Johnson, Starnes, Gregory, & Blaylock, 1985) and the Potentially Gifted Minority Student Project (Alamprese & Erlanger, 1988) have been documented as being useful in increasing the inclusion of African American learners in gifted and talented programs. These ongoing-activity programs use an identification-through-teaching (test, teach, retest) approach and employ several additional strategies that have resulted in increased numbers of African Americans being identified as gifted and talented.

More qualitative alternatives to paper and pencil tests have emerged recently. Some promising research emphasizes the use of portfolio and performance based assessments, biographical inventories, and motivational and attitudinal measures. These assessment approaches are

thought to complement rather than supplant formal assessment tools.

Additional Research

Research and development is needed to advance test development and gifted education in several ways: 1) developing new and expanded visions about the constructs of intelligence and giftedness, 2) using pluralistic procedures for identifying gifted African Americans, 3) using curriculum based assessment models, which purport to improve the correspondence between testing and teaching the school's curriculum, 4) increasing research on qualitative assessment approaches, 5) focusing on the unique traits and psychosocial characteristics of achieving African Americans, and 6) increasing research on uncovering intragroup differences in cognition, behavior, and motivation of African Americans.

Conclusion

We suggest that the assessment and identification of gifted and talented African American learners be driven by an assessment paradigm complementary to the African American world view and culture. Additionally, it is important to consider the relationships and links among African American world views, assessment theory and methodology, and desirable assessment and identification instruments and practices.

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Creativity Around the World

A Review of *Creativity Training: A Guidebook for Psychologists, Educators, and Teachers*

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Of the many benefits resulting from the end of the Cold War, the increase in intellectual interaction between East and West is perhaps the most significant. Recently, having met psychologists from Eastern Europe and Russia, I became aware of the extensive work being done on creativity, especially in the areas of theory and education. It was with this heightened anticipation that I read *Creativity Training* by Edward Necka, a member of the Team of Psychology of Creativity at Jagiellonian University in Cracow, Poland, and a recent post-doctoral fellow at Yale University. Necka has been involved with the study of intelligence and has done some promising work on the creativity-intelligence relationship (Necka, 1992).

The purpose of the book is to “aid...psychologists, educators, teachers, social relations specialists, and other persons interested in stimulating people’s creativity” (p. 8), with an emphasis on group training techniques. The following questions can be used as guides when reading this book:

- How do “creative problem-solving” and “creativity training” differ?
- What role does interpersonal interaction play in the creative process?
- What are the creative advantages and disadvantages of working in a group?
- Which mental “abilities” influence creative thinking?
- With respect to creativity training, how flexible should the program be?

The introduction contains a description of the program’s underlying philosophy. A distinction is drawn between creative problem-solving, “techniques

which aim at solving a concrete task by means of appropriate manipulations, methods, ‘tricks,’ etc.,” and creativity training, “techniques aiming at developing the creative capabilities of individuals and teams” (p. 7). The techniques (or “tools”) involved in creative problem-solving include brainstorming and synectics, and a group using these techniques is also seen as being a “tool” for problem-solving. In contrast, creativity training is used to increase creative potential, with the individual and group becoming the focus of the activities, rather than being a “tool.” I must admit that this distinction still puzzles me, and I would have liked to have seen a more detailed explanation.

The next section includes two chapters: *Interpersonal Skills*, based upon the belief that creativity is a group process and seldom occurs outside of a “social context” (p. 9); and *Motivations*, “the most difficult to train” (p. 10), but still a necessary component of creativity. Chapter Three deals with each of the creative “abilities”: thinking in the abstract, making associations, deductive reasoning, inductive reasoning (analogies), metaphorizing, and transformations. The next chapter deals with obstacles to creativity (both internal and external) and strategies for overcoming them. The organizational schema for the creativity training program is described in reasonable detail in the final chapter, but I would have appreciated this information more thoroughly if it had been provided earlier in the text. Finally, the appendices contain a list of “Emergency” problems to use as part of the training program and a list of “Idea Squelchers” adapted from Davis (1981) and Kaufmann, Fustier, and Drevet (1970).

The sections on motivation and interpersonal skills are excellent, with the latter calling attention to a traditionally underemphasized aspect of creativity. Indeed, this section is the strongest part of the book, full of clever, original activities. The activities

for increasing creative abilities in Chapter Three are described in sufficient detail, but they do not seem as promising as those in the previous two chapters. The chapter on overcoming obstacles is appealing because it makes the necessary differentiation between internal and external obstacles. As with

the first two chapters, this section should be expanded in future editions. I would also appreciate a smoother English translation (it seems somewhat choppy for an American audience) and the addition of an index.



With the benefit of hindsight, I realize that my anticipation was based upon a desire to see an international perspective on the education of creativity. In this respect, the first paragraph did not disappoint me, as it contains 25 citations from authors in four different countries. Although the suggested activities are based upon the work of the Team of Psychology of Creativity in Cracow, I expected more references *within* the text, especially from European authors. The select citations are predominantly the work of American authors, since the international work cited in the first paragraph is infrequently mentioned throughout the rest of the book. However, even the references to American authors and their work are quite dated, with less than five after 1982, and no references later than 1987.

With the current 'intellectual boom' in creativity theory and research, the omission of current work is the book's main weakness. The recent work being done with divergent thinking (Runco, 1991), creativity theory (Gardner, 1993; Runco & Albert, 1990; Sternberg, 1988), and economic theory (Runco & Rubenson, 1992; Sternberg & Lubart, 1991) all have a substantial impact upon creativity training. In the final analysis, I expected an international perspective on "creativity training," but the book delivered an international interpretation of *American* work on the education of creativity. As a result, most Western readers will find the ideas and suggested activities to be largely familiar. However, I still recommend the book for two reasons: first, the section on interpersonal aspects of creativity; and, second, the book's historical significance as an indicator of the creativity work currently being done in Poland.

Note: Necka, E. (1992). *Creativity Training: A Guidebook for Psychologists, Educators, and Teachers*. Kraków, Poland: TAIWPN "UNIVERSITAS" (160 pp.). ISBN 83-7052-092-8 is available directly from the author at the following address: Jagiellonian University, Institute of Psychology, ul. Golebia 13, 31-007 Kraków, Poland.

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Creativity: How Can It Benefit At-Risk Students?

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Dynamic Assessment and Its Use With High Ability Students

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Most school districts restrict their selection of identification instruments to measures tapping academic aptitude, such as intelligence and achievement tests, grades, and teacher ratings/recommendations. The result, writes Richert (1985), is that certain groups of students are consistently underrepresented, including: "(a) underachieving, poor and minority gifted children who most need programs to develop their potential; (b) the creative and/or divergent thinkers whose abilities are not tested by standardized intelligence or achievement tests or grades; and (c) other groups including the learning disabled or handicapped gifted." (p. 70)

A relatively new approach to assessing ability is to ask students to respond to a problem situation, provide assistance to help them improve their performance, and then measure various indices of improvement in their performance on similar problems. This approach is called dynamic assessment (Feuerstein, 1979). Different dynamic assessment models have been researched (Lidz, 1987), including assessment via assisted learning and transfer (Campione, 1989) and testing the limits (Carlson & Weidl, 1979). Campione (1989) explains that the common feature of these models is an emphasis on the individual's potential for change.

Definition of Dynamic Assessment

Dynamic assessment is a diagnostic procedure that takes into account the context of the testing situation and the ability of the examinee to learn from experience. Lidz (1991) described it as

a test-intervene-retest format. The specialist first administers a static pretest to establish a level of performance, then provides interventions to try to produce changes in the examinee, and then retests on the static test in order to assess degree and nature of change...A second definitive characteristic of a dynamic assessment is the focus on learner modifiability. "Modifiability"

involves both the amount of change made by the learner in response to the interventions provided, and the learner's increased implementation of relevant metacognitive processes in problem solution. (pp. 4-5)

The importance of the unique format and focus of dynamic assessment is that the potential of students who come from disadvantaged populations or who are disabled in some way is directly assessed. Although a student's disability or background may be taken into account in usual testing situations through a weighting formula or by comparing the student's performance to others with similar characteristics, at best this offers an indirect means of assessing potential in these groups of students.

Dynamic assessment can be conducted in a formal, standardized manner or informally with individuals or small groups of students. A student can be

assessed by recording the number of trials or amount of time needed to elicit correct performance, evaluating the quality of the response and the amount of intervention assistance needed to obtain a correct response, and the types of cognitive strategies used and extent to which the student understands the nature of the problem

situation. This latter information is based on the student's spontaneous or elicited comments.

Static and Dynamic Assessment

The theoretical foundation for the development of the dynamic assessment approach comes from Vygotsky's (1978) conception of the "zone of proximal development (ZPD)." From the Vygotskian perspective, potential is defined by the ZPD. Lidz (1991) writes that

the ZPD concept refers to the idea that a child has some fully matured processes that are evident when the child is assessed by traditional means, as well as emergent developmental processes that can become evident when the child interacts with a more knowledgeable partner. The ZPD is the difference between the child's level of performance when functioning independently and the child's level of performance when functioning in collaboration with a more knowledgeable partner. This can also be viewed as a definition of "potential." (p. 7)



Static assessment methods are those that measure student ability by presenting test tasks that the examinee must solve or answer by accessing previously acquired knowledge and skills without any assistance. Dynamic assessment methods are those that allow the examinee to benefit from prompting and active support from the examiner. In static assessment, the most important acts the examiner does are to administer the test and accurately record the number of test items answered correctly. In dynamic assessment, the examiner is more focused on discovering the type of intervention that improves the examinee's performance on the test tasks.

Static and dynamic assessment methods should be considered complementary and not antagonistic means for estimating potential. Static assessment devices help us to understand how well a student has benefited from previous educational treatments, interventions, and experience in general. This information allows us to gauge a student's background knowledge and skills. However, a student who has had an advantaged and enriched education could demonstrate a high level of achievement, yet have average ability. A student from a disadvantaged background showing a similar level of achievement may be demonstrating a higher level of ability.

Application of Dynamic Assessment in Gifted Education

It might be possible to train teachers to set up dynamic assessment situations in which certain types of performance are taught and then have them look for students who outperform their peers. Renzulli, Reis, and Smith (1981) applied the concept of dynamic assessment in developing the Revolving Door Identification Model (RDIM) to increase the number of creative-productive gifted students receiving gifted education. When a teacher of the gifted determines that a student in the "talent pool" has demonstrated a high level of domain-specific aptitude after receiving Type II enrichment (see Renzulli, 1977), a form of dynamic assessment is being used.

The decision to label a child gifted and talented is based on data that is interpreted against the backdrop of some value system. Those who most highly value academic giftedness, also called "schoolhouse giftedness" (Renzulli, 1986), will perceive only those students who excel on classroom assignments and achievement tests as being gifted. These are the students who are usually nominated by teachers to take the aptitude or intelligence tests on which the final labeling decision is based. Yet, recent research shows that when all students are allowed an

opportunity to participate in an enrichment program, highly creative students perform as well as gifted students, even though they didn't score high enough on aptitude tests to be selected for the gifted program (Kirschenbaum & Siegle, 1993).

Teachers will not nominate "creative-productive gifted" students (Renzulli, 1986) for a gifted program if the final selection decision is based solely on whether a student can meet a cut-off score criterion (Hunsaker, 1992). Hunsaker (1992) found that the school systems he studied relied on test scores as the "bottom line" in deciding who was gifted, although they avowed the use of multiple criteria. Teachers felt that they had limited influence on the identification process. Hunsaker suggests that a change in focus to looking at individuals rather than just test scores is necessary before teachers will feel they have some influence on who is selected for gifted programs. Dynamic assessment is a means by which teachers can document the ability of students to benefit from instructional interventions such as enrichment activities. This is particularly valuable if we want teachers to refer students who demonstrate creative thinking ability in their classes.

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Breaking the Barriers: Recently Published Resources on Women in Math and Science (and how to evaluate them)

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As awareness and concern slowly grow with respect to the barriers young women face in math and science, classroom resources are becoming more plentiful. Very few recommendations have appeared, however, for how educators and parents should evaluate these materials. The following questions are suggested as guides for any evaluation of gender equity resources in science and math, especially those that attempt to introduce potential, female ‘role models’ in scientific and mathematical fields.

When dealing with role models:

- Are potential role models presented?
- Do the role models represent variety with respect to:
 - the range of scientific and mathematical disciplines?
 - the time period in which they lived and worked?
 - their childhood experiences?
 - the path they followed (or blazed) to become a scientist or mathematician?
 - their racial, ethnic, and/or socio-economic status?
- Is each person’s background described in light of his or her decision to enter a quantitative field?
- Do the profiles of the scientists and mathematicians contain an appropriate balance between their positive experiences and the difficulties that they faced?

With respect to the activities and the format of the material:

- Are “hands-on” activities included (and explained at an appropriate level)?
- Are the activities based upon each profiled individual’s work?
- Are the activities relatively easy to administer?
- Is the text interesting and highly readable?
- Are additional resources suggested?

Review of Recently Published Materials

While any evaluation should be tailored to meet one's individual needs, I have found that the above questions are usually asked by teachers who have

experience in creating or maintaining an atmosphere of gender equity in their classrooms. When evaluating more than one resource, one may find it helpful to construct a grid (see Figure 1) based upon the evaluation questions.¹ With this in mind, a review of three recently published materials on women in science and math follows:

From sorceress to scientist: Biographies of women physical scientists

Kevin Allison Nies (1990)
California Video Institute, P.O. Box 572019,
Tarzana, CA 91357

This publication has the look and feel of a workbook, which is quite appropriate considering its format and purpose (“to supplement textbook materials in the physical science curriculum at the junior and senior high level”, p. i). Each of the nineteen profiles of individuals (e.g., Hypatia, Mary Somerville) and groups (wise women & the first calendars, the queens of crystallography) is followed by at least one suggested lab, demonstration, or other activity. Some of the activities are merely crossword puzzles or worksheets, but the majority are demos or labs (supervision is necessary in some cases). This book is the best resource I have found that discusses the lives/work of women scientists *and* provides pertinent activities for students to enjoy.

Women and numbers: Lives of women mathematicians

Teri Perl (1993)
Wide World Publishing/Tetra, P.O. Box 476,
San Carlos, CA 94070

Eleven profiles of female mathematicians or computer scientists are included in the latest effort by the author of *Hypatia and Her Sisters*, with two to four activities following each profile. These enrichment activities are often creative and stimulating, although some are merely pencil-and-paper worksheets. The book is very readable, but I often had the impression that a more in-depth analysis was lost because of this. For example, Perl notes that Boole’s most significant contributions occurred after her husband’s death, when she obtained a job based upon her own merits. At that point, the opportunity exists for a discussion of the difficulty of family-career balance and the possibility of productivity throughout the life-span; but this and other similar opportunities are missed. Another, minor criticism deals with the sections describing the EQUALS project and the Expanding Your Horizons conferences. The descriptions of these two programs, which seek to increase the participation and performance of young women in math and science, seem out of place—the only audience that will benefit from these sections (or find them remotely interesting) are those individuals who are starting

their own intervention programs—definitely not the group benefiting from the first 11 sections.

Women scientists

Nancy Veglahn (1991)

Facts On File, 460 Park Ave. South, NY, NY 10016;
also available from the National Women's
History Project

This reference book is strongest when it discusses each woman's achievements and tribulations against the backdrop of her youth and family life. However, Veglahn occasionally uses a didactic format (i.e., one which appears to just list certain accomplishments), which would probably make the text disinteresting for some younger children. "Further Reading" lists are provided after each of the 11 profiles, and each cited work is briefly described in one or two sentences. An index and chronologies are also provided, features which are missing or underdeveloped in the other two books. However, as *Women Scientists* is meant to be a work of reference (and the other books are more activity-oriented), this difference is understandable.

Discussion

As you conduct your own evaluations of gender equity materials, keep in mind that each resource aims to accomplish different goals and, therefore, has its own strengths and weaknesses. Of the books reviewed here, *Women Scientists* is meant to be a

secondary reference book, while *From Sorceress to Scientist* and *Women and Numbers* introduce potential role models and reinforce each woman's contributions through activities based upon her work. As with any materials used in the classroom, teachers need to adapt these resources into their curriculum as they see fit.

When teachers of grades K - 6 search for gender equity material, they are usually disappointed with the results. Most resources, especially those in math and science, are written for the middle and high school years because many of the problems that young women face begin to surface at this time. However, the foundations of these difficulties are formed much earlier, perhaps during the preschool years. Hopefully, authors and publishers will realize this in the near future and begin to market quality materials for preschool and elementary school children, educators, and parents. Meanwhile, educators and parents may want to adapt the best resources for middle/high school into a form suitable for the younger children with whom they interact.

¹ Blank, elaborated copies of the evaluation matrix are available at no cost and may be copied without limit. Send a self-addressed, stamped envelope c/o the author to NRC/GT, The University of Connecticut, Box U-7, Storrs, CT 06269-2007.

Title Author Publisher	Age level	Role Models					Activities					Readable, interesting text?	Additional resources suggested?
		Role models included?	Discussion of societal atmosphere?	Variety?	Connection between background & decisions?	Positive and negative aspects?	Activities included?	Activities linked to biographies?	Easy to administer?	Explained well?			
From Sorceress to Scientist Kevin Allison Nies California Video Institute	Grades 6 - 12	Yes	Yes	Yes *1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Very	Yes: a variety of books, videos, & computer programs
Women and Numbers Teri Perl Wide World/Tetra	Grades 5 - 9	Yes	Yes	Yes *2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Very	No: although the EQUALS and Expanding Your Horizons programs are described in detail
Women Scientists Nancy Veglahn Facts On File	Grades 6 - 12	Yes	Yes	Yes *3	Yes	Yes	No	N/A	N/A	N/A	Yes	Yes	Yes

Comments:

*1 - The female scientists and mathematicians are representative of a wide range of scientific and mathematical disciplines, time periods, and racial and ethnic groups.

*2 - The mathematicians in this book are representative of a wide range of mathematical disciplines, time periods, and racial and ethnic groups.

*3 - The scientists in this book are representative of a range of scientific disciplines and time periods.

Figure 1
Evaluation Matrix for Science/Math Gender Equity Materials



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