

# DISCOVER: Concurrent Validity, Gender Differences, and Identification of Minority Students

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## ABSTRACT

This study used the Raven Progressive Matrices to examine the concurrent validity of the DISCOVER assessment. It also investigated gender differences. A secondary purpose was to determine the effectiveness of the DISCOVER assessment in reducing the problem of minority students being under-represented in programs for the gifted. The sample consisted of 257 kindergarten, second, fourth, and fifth graders, predominantly Navajo Indians and Mexican Americans. The results provided some evidence for concurrent validity and showed that, through the use of the DISCOVER assessment, 22.9% of minority students were identified as gifted. A MANOVA (gender by grade level) resulted in the absence of significant main effects for both gender and grade, as well as for gender by grade interaction. Chi-square tests revealed no overall significant gender differences in identification. The findings promote the use of the DISCOVER assessment for identification purposes.

The issue of identifying gifted students from culturally diverse groups has received much attention in the literature (Baker, 1996; Clasen, Middleton, & Connell, 1994; Maker, 1992; Nielson, 1994; Scott, Perou, Urbano, Hogan, & Gold, 1992). Several researchers have investigated why minority students are over-represented in remedial programs and under-represented in programs for the gifted (Clasen et al.; Gardner, 1992; Maker, 1993; Nielson). The often-cited causes for such practices are mostly traditional definitions of giftedness, narrow conceptions of intelligence, and the use of traditional assessment procedures for identification purposes, such as standardized IQ tests (Clasen et al.; Cummins, 1991; Maker, 1992; Samuda, 1991).

Much of the criticism has addressed the issue of fairness. Several studies on standardized tests have revealed gender, ethnic, and cultural bias (Baker, 1996). Researchers and educators have identified four major sources of this bias: the norms used

for test interpretation, inadequacy of formats, bias in content, and linguistically loaded items (Baker). Consequently, educators have called for the use of more adequate instruments for identification purposes, such as alternative assessment methods (Clasen et al., 1994; Cummins, 1991; Gardner, 1992; Maker, 1992).

Historically, giftedness has been associated with superior academic ability or achievement, measured by grade point average or IQ (Nevo, 1994). Terman's (1925) definition of gifted individuals as only those who scored in the top 1% in general intellectual ability on the Stanford-Binet Intelligence Test exemplifies how giftedness was viewed three-quarters of a century ago. Evidence from recent publications indicates that

## PUTTING THE RESEARCH TO USE

A substantial number of minority students are being denied access to programs for the gifted because the tests used for identification are inappropriate for use with culturally diverse groups. Many educators are drawing attention to the need to replace standardized tests with other culturally bias-free instruments to identify gifted minority students.

One such instrument is the DISCOVER assessment, a performance-based assessment designed to identify gifted minority students. The DISCOVER assessment is based on the framework of Gardner's theory of multiple intelligences and includes five activities that measure spatial, logical-mathematical, and linguistic intelligences. The activities give students the opportunity to demonstrate their strengths through manipulating appealing material in a nonthreatening atmosphere.

Research on the DISCOVER assessment has yielded positive results. Practitioners in the field might choose to use the DISCOVER assessment as an instrument for identifying gifted minority students, keeping in mind that a good fit must exist between the assessment focus and the program for gifted students offered at school.

the notion is being reconceptualized (Nevo). In 1972, a committee formed by the U.S. Office of Education (Marland, 1972) proposed a conception of giftedness that included not only abilities in the academic domain, but also in the performance domains. Children could be identified as gifted if they registered a high potential in the following areas: (a) general intellectual ability, (b) specific academic aptitude, (c) creative or productive thinking, (d) leadership ability, (e) visual and performing arts, and (f) psychomotor ability.

Renzulli's (1979) three-ring definition of giftedness is another reconceptualization of giftedness. He hypothesized that giftedness is an interaction between three clusters of basic traits: above-average general ability, high levels of creativity, and high levels of motivation (task commitment). Along the same lines, Maker (1993) postulated that creativity and intelligence are two components of the same construct. She contended that "creative problem solving" is a characteristic of giftedness. According to Maker (1996), the key element in giftedness is the ability to solve complex problems in the "most efficient, effective, or economical ways" (p. 44). Thus, in Maker's view, gifted individuals are both highly intelligent and creative; not only do they understand problems and discover solutions using the most efficient methods, they also find problems and solve them creatively and effectively (Maker, 1993, 1996).

In the same vein, the emergence of nontraditional theories of intelligence based on a broad conceptualization of intelligence has contributed to a reform of the concept, as well. For example, Gardner (1983) defined intelligence as the multiple abilities that permit an individual to solve a problem or create a product that is valued within one or more cultural settings. In his book *Frames of Mind*, Gardner rejected the unitary construct of intelligence and espoused a multidimensional definition in which he identified seven discrete intelligences: linguistic, logical-mathematical, spatial, interpersonal, intrapersonal, bodily-kinesthetic, and musical. More recently, Gardner (2000) has added one and a half intelligences to his previously identified seven; the eighth intelligence he labeled the "Naturalist" (sensitivity to the ecological environment) and the half intelligence he called the "Existentialist" (insight into the different meanings of life and one's existence).

### **Performance-Based Assessments**

The new conceptions of giftedness and human intelligence have given rise to the development of performance-based assessments that have extended beyond the use of standardized tests (Clasen et al., 1994; Maker, 1996). Proponents of performance assessment see many benefits associated with this technique, such as testing students in life-like situations,

consideration of both process and product in evaluation, assessment of higher order skills, and use of appealing material (Frechtling, 1991). Specific to the assessment of culturally diverse groups, the advantages often cited include: (a) the use of the dominant language of the person assessed; (b) the coverage of broad and multiple areas such as those advocated by Gardner (1983) and Sternberg (1991); (c) the evaluation of individual performance is based on the judgment of multiple observers or evaluators (e.g., independent observers, parents, and peers), as opposed to standardized test scores that are transformed into standard z-scores for comparison with the scores of the normative sample; and (d) these methods are believed to be more fair and culturally bias-free in comparison with multiple-choice questions that might require knowledge and skills specific to the dominant culture (Baldwin, 1985; Maker, 1992).

The effectiveness of performance-based assessments has been investigated in several studies. For example, Clasen et al. (1994) conducted a well-designed study in which they tested 433 minority and nonminority students, using nontraditional multiple measures: problem solving, a free response drawing task, peer identification, and teacher nomination. The results showed that 24% of the students tested were identified as gifted, and minority and nonminority gifted students were identified in proportion to their actual distribution in the schools. Peer and teacher nominations supported the art and problem-solving identifications. Also, the number of males and females identified corresponded closely to their proportions in the population. The researchers concluded that non-traditional measures may be more culture and gender fair than traditional assessments. In another study, Borland and Wright (1994) described an extensive method for the identification of economically disadvantaged students, which included both qualitative and quantitative measures. Standardized tests, as well as classroom observations, portfolio assessment, teacher nominations, and child interview, were used for identification purposes. Validation data for two cohorts (K-2) yielded positive results. The researchers concluded that giftedness can be found in every school and that educators have no excuse for failing to identify gifted students from all backgrounds.

### ***The DISCOVER Assessment***

Using the conceptual framework of Gardner's (1983) theory of multiple intelligences and Maker's (1993) definition of giftedness, Maker, Nielson, and Rogers (1994) developed the DISCOVER assessment, a performance-based assessment designed to identify gifted students among culturally diverse groups. The acronym DISCOVER stands for *Discovering Intellectual Strengths and Capabilities through Observation while allowing for Varied Ethnic Responses*.

(For an extensive description of the DISCOVER assessment (see Saroughim, 1999).

The DISCOVER assessment is a relatively new instrument; consequently, only a few studies have examined its psychometric properties. Griffiths (1996) conducted two studies on the interobserver reliability of the DISCOVER assessment. In the first study, two observers separately watched videotapes of five observation sessions of the Pablo® activity (spatial intelligence). Participants were 25 Navajo children ranging in age from 9 to 13 years old. As they viewed the tapes, the researchers sketched the children's constructions and took notes in much the same way as the original observers in the tapes did. Then, each of the researchers independently classified the children's problem-solving ability in Pablo® according to the four rating categories of Unknown, Maybe, Probably, and Definitely. Correlational analyses yielded positive and significant coefficients, with the lowest being 0.69 ( $p < .05$ ) and the highest 0.81 ( $p < .01$ ), indicating a fairly high agreement among the three observers. Percentages of agreement ranged from 75 to 100%.

In the second study, participants were observed in a live setting. Six observers with different levels of experience (novice, moderate experience, and expert) watched the students perform three of the DISCOVER assessment activities (Pablo®, Tangrams, and Storytelling) and recorded separate notes. Participants were 91 students ranging in age from 5 to 11 years old. Correlational analyses yielded positive and significant coefficients; the percentage of agreement between the researcher and all six observers ranged between 80 and 100%, with the highest agreement being between the researcher and the expert observers and the lowest between the researcher and the novices. Also, the agreement among observers was 95 to 100% across all experience levels on the "Definitely" rating category. The researcher concluded that the DISCOVER assessment interobserver reliability was high. Levels of observers' experience affect slightly, but not significantly, their rating of students' problem-solving ability.

In another study, Seraphim (1997) investigated some aspects of the internal structure of the DISCOVER assessment checklist to assess construct validity. Participants were 368 American Indians and Mexican Americans from kindergarten, fourth, fifth, and sixth grades. Convergent and divergent validity of the checklist were assessed through correlations of observers' ratings of students' problem-solving ability in one activity and their rating of the same students in the other four activities. The results showed low and nonsignificant inter-rating correlations, indicating that the checklist had high divergent validity. That is, students given high or low ratings in one activity were not necessarily given the same high or low rating in the other activities, suggesting that each of the DISCOVER

assessment activities measures a different intelligence. Analyses of gender differences revealed no significant differences in the numbers of males and females identified as gifted. The results indicated a good fit between the assessment and the theory of multiple intelligences, providing positive evidence for the construct validity of the DISCOVER assessment.

In a study with a purpose similar to the present investigation, Griffiths (1997) examined the comparative validity of the DISCOVER assessment with other measures. Thirty-four Mexican American participants took the WISC-III, the Raven Progressive Matrices, and the DISCOVER assessment. Although overall ratings of students in the three assessments were strikingly different, analyses of separate activities corresponding to the different intelligences and students' profiles revealed high comparative validity, indicating a close resemblance between the results of the DISCOVER assessment and the WISC-III and between the Raven's and the Pablo® activity of the DISCOVER assessment. Also, multiple regression analyses revealed that the DISCOVER assessment had higher predictive validity than either the Raven's or WISC-III, hence providing further evidence for the effective use of the DISCOVER assessment with minority students.

The primary purpose of the current study was to use the Raven Progressive Matrices (Raven, Court, & Raven, 1977, 1988) to examine the concurrent validity of the DISCOVER assessment. Some investigators have suggested that the use of the Progressive Matrices with culturally diverse groups is appropriate (Jensen, 1980; MacAvoy, Orr, & Sidles, 1993) and leads to the identification of a higher proportion of minority children than traditional measures do (Mills & Tissot, 1995). Test-retest reliability for the Raven ranges between 0.71 and 0.92, and concurrent validity estimates are between 0.55 and 0.86 (Sattler, 1988). This inquiry also investigated gender differences in the use of the DISCOVER assessment. A secondary purpose was to determine whether users of the DISCOVER assessment would identify a larger pool of students than those using standardized tests and, thus, whether the use of the DISCOVER assessment would help reduce minority under-representation in programs for the gifted.

## **Method**

### **Participants**

The sample of this study consisted of 257 participants, predominantly from two minority groups: Navajo Indians and Mexican Americans. Participants were kindergartners, and second, fourth, and fifth graders taken from six schools located in the northern and southern parts of Arizona. Most partici-

pants were from low-socioeconomic groups as determined by their place of residence and participations in the free lunch program. Participants' grade, gender, and ethnicity distributions are presented in Table 1.

### Instruments

The instruments used in this study were the DISCOVER assessment and the Raven Progressive Matrices. The following is a brief description of each instrument:

*The DISCOVER assessment.* The DISCOVER assessment was designed to tap into individuals' problem-solving ability through five activities: Pablo® (spatial), Tangrams (spatial/logical-mathematical), Math (logical-mathematical), Storytelling (linguistic), and Storywriting (linguistic). The assessment consists of a series of tasks that students perform while being assessed by trained observers. To avoid observer bias, observers rotate at the completion of each activity so that each student is assessed only once (i.e., during one activity only) by the same observer. The following is a brief description of each activity:

*Pablo®.*: The material for this activity consists of colored cardboard pieces of different shapes, designs, and sizes. Students are asked to make different constructions (e.g., animal, flowers, container) using the Pablo® pieces.

*Tangrams*: Each student is given a set of Chinese Tangrams (21 pieces of three different shapes: triangles of three different sizes, squares, and parallelograms). Students are requested to make a geometrical shape (square in K–2 and triangle in grades 3–5) using as many Tangram pieces as possible; then, each student is given a booklet of six puzzle sheets arranged in ascending order of difficulty and asked to solve them.

*Storytelling*: Students are given an array of toys and are asked either to group the toys according to similarity in characteristics (K–2) or to describe one and then two of their toys using as many descriptors as possible (grades 3–8). Then, students are asked to tell a story of their choice that incorporates some or all of the toys they have been given.

*Storywriting*: Students are asked to draw a picture that tells a story and verbally describe it (kindergarten) or to write a story of their choice (grades 1–8).

*Math*: Worksheets consisting mostly of open-ended numerical problems are used to assess this intelligence (in kindergarten, Tangram pieces are used to assess the children's counting ability, as well as their grasp of the concepts of "more" and "less").

*Assessment procedures*. Following the assessment, observers meet to discuss students' problem-solving abilities and classify their performance in each of the activities according to a four-category rating scale: Unknown, Maybe, Probably, and Definitely, with the last rating category being the highest and

**T a b l e 1**  
**Participants' Grade, Gender, and Age Distribution**

	Kindergarten	Second	Fourth	Fifth	Total
Gender					
Male	39	25	16	36	116
Female	35	22	30	54	141
Total	74	47	46	90	257
Ethnicity					
Navajo	42	2	15	55	114
Hispanic	28	39	22	30	119
Anglo	4	6	9	5	24
Total	74	47	46	90	257

corresponding to superior problem-solving ability or giftedness. Usually, students given the "Definitely" rating category in at least two of the activities are identified as gifted; however, the identification criteria are flexible (e.g., in some schools, students given three "Definitely" ratings are identified as gifted) and depend on the school district identification procedures and the nature and scope of programs for the gifted offered at each particular school.

*Criteria for giftedness*. To assign a rating, observers are guided by a checklist, which they complete for each child. Items on the checklist represent superior problem-solving behaviors (process) and characteristics of products. For example, in Pablo®, observers note how the final construction was produced and whether the constructions are three-dimensional, complex, and original, and incorporate many pieces. In Tangrams, observers note the number of puzzle sheets solved, the strategies used, the time it takes students to solve them, and the number of Tangram pieces used to complete a square or a triangle. In Storytelling and Storywriting, observers look for fluency, plots, appropriate sequence of events, and the quality of words and sentences. In Math, strategies as well as the number of problems solved are taken into consideration.

*Raven Progressive Matrices*. Both the Raven Coloured Progressive Matrices (RCPM) and the Raven Standard Progressive Matrices (RSPM) are tests of nonverbal reasoning ability (Sattler, 1988). The RCPM, composed of 36 problems with colored matrices, is used with younger children, whereas the RSPM comprises 60 problems (divided into 5 sets of 12 items) with black-and-white matrices and is used with older children and adults. In both tests, the subject is required to find

**T a b l e 2*****Correlations Between Participants' Raven Scores and Their DISCOVER Ratings***

	Kindergarten (n = 74)	Second (n = 47)	Fourth (n = 46)	Fifth (n = 90)	Total (n = 257)
Pablo®	.251*	.506**	.613**	.704**	.579**
Tangrams	.351*	.398**	.495**	.395**	.409**
Math	.264*	.311*	.376*	.357**	.311**
Storytelling	.297*	.120	.294	.206	.108
Storywriting	.334*	.276	.139	.198	.093

Note. \* $p < .05$ , \*\* $p < .01$ .

a missing piece that completes the pattern in the displayed matrices.

### Procedures

All participants took the DISCOVER assessment and the Raven Progressive Matrices (Raven et al., 1977, 1988). Kindergartners and second graders took the K-2 version of the DISCOVER assessment and the RCPM. Fourth and fifth graders took the grades 3-5 version of the DISCOVER assessment and the RSPM.

### Results

Separate but identical analyses were performed on the checklists of students in each grade level. To determine concurrent validity, correlational analyses were performed between the participants' Raven scores and their DISCOVER ratings. For gender differences, a 2 x 4 MANOVA was conducted (gender by grade level). The ratings were coded as follows: 1 for "Unknown," 2 for "Maybe," 3 for "Probably," and 4 for "Definitely." Finally, chi-square tests of significance for gender by gifted participants (i.e., given the "Definitely" rating in at least two of the DISCOVER activities) were calculated to determine gender differences in identification.

### Concurrent Validity

Correlations between the participants' Raven scores and their DISCOVER assessment ratings ranged between low and nonsignificant, mostly for the Storytelling and Storywriting

activities, and moderate, high, and statistically significant for the other three activities (see Table 2). The lowest correlations were between participants' ratings in Storywriting and their Raven scores in all grade levels, except in kindergarten and second grade, and the highest were between students' ratings in Pablo® and their Raven scores across grade levels except in kindergarten. A pattern of higher correlations for higher grade levels appeared, particularly in Pablo®.

Effect size as revealed by the variance explained in R-squared values yielded low to moderately high percentages, with the highest being 49% ( $R^2 = 0.49$ ) between Pablo® and the Raven's in fifth grade and the lowest 0.86% ( $R^2 = 0.008$ ) between Storywriting and the Raven's across the entire sample.

### Gender Differences

*By grade level.* The 2 x 4 MANOVA yielded nonsignificant results: gender by grade interaction ( $F[5,239] = 0.96, p = 0.61, \text{ns}$ ), main effect for gender ( $F[5,239] = 1.15, p = 0.34, \text{ns}$ ), and main effect for grade ( $F[4,212] = 1.02, p = 0.46, \text{ns}$ ). Even though fluctuations in mean differences were found between the performance of boys and girls and the performance of students in different grade levels (see Table 3), the results showed the absence of significant grade and gender differences across the entire sample.

*By gifted participants.* As indicated in Table 4, 24.3% of kindergarten participants were identified as gifted; these boys and girls were given the rating of "Definitely" in at least two of the DISCOVER assessment activities. A slightly lower percentage of students identified as gifted appeared in all other grade levels: second (23.4%), fourth (21.6%), and fifth (22.2%). A total of 22.9% of all participants was identified as gifted in the entire sample.

In terms of gender differences, no significant statistical differences were found between the number of boys and girls identified as gifted in all four subsamples (see Table 4) and across the entire sample,  $\chi^2(1,59) = 1.89, p < .12, \text{ns}$ .

### Discussion

In this study, the purpose was to use the Raven Progressive Matrices to examine the concurrent validity of the DISCOVER assessment. Another purpose was to investigate gender differences, and a secondary objective was to determine the effectiveness of the assessment in identifying higher percentages of minority students than traditional standardized tests. The results provided positive evidence for the concurrent validity of the DISCOVER assessment and showed that large percentages of participants were identified across the entire sample. Also, the 2 x 4 MANOVA yielded nonsignificant results for gender

**T a b l e 3***Mean Ratings and Standard Deviation for Males and Females in Each DISCOVER Activity Across Grade Levels*

	Kindergarten		Second		Fourth		Fifth	
	M	F	M	F	M	F	M	F
<i>Pablo®</i>								
Mean	2.8	2.6	2.9	2.8	3.3	2.6	2.8	2.8
SD	0.9	0.8	0.7	0.6	0.5	0.7	0.6	0.7
<i>Tangrams</i>								
Mean	2.1	2.2	3.0	2.6	2.5	2.6	2.9	3.1
SD	0.7	0.8	0.7	0.8	0.8	0.8	0.8	1.0
<i>Math</i>								
Mean	2.7	2.5	3.0	2.9	2.8	2.7	2.8	2.6
SD	0.9	1.0	0.6	0.7	0.9	0.7	0.8	1.0
<i>Storytelling</i>								
Mean	2.1	2.2	2.7	2.7	2.7	2.9	2.3	2.8
SD	1.0	1.0	0.8	0.7	1.0	0.9	0.8	0.9
<i>Story Writing</i>								
Mean	2.8	2.5	2.6	2.9	2.6	2.5	2.5	2.8
SD	0.8	0.7	0.8	0.8	1.8	0.8	0.9	0.9

**T a b l e 4***Chi-Square Tests of Significance for Gender by Gifted Participants Across Grade Levels and for the Entire Sample*

Grade	Boys		Girls		All		df	X <sup>2</sup>	p
	n	%	n	%	n	%			
Kinder	10	17.9	8	22.8	18	24.3	1	1.30	.41
Second	8	32.0	3	13.6	11	32.4	1	2.20	.10
Fourth	5	31.2	5	16.6	10	21.6	1	0.07	.82
Fifth	9	25.0	11	20.3	21	22.2	1	1.09	.24
All	3	227.5	27	19.1	59	22.9	1	1.89	.12

by grade interaction and nonsignificant main effects for gender and grade. Finally, no overall statistically significant differences were found in the numbers of boys and girls identified as gifted in each grade level and across the entire sample.

In this study, some evidence was revealed in support of the convergent and divergent validity of the DISCOVER assessment. The three activities of Pablo®, Tangrams, and Math require spatial and logical-mathematical reasoning; by the same token, both RCPM and RSPM are measures of nonverbal rea-

soning ability. Therefore, the significant correlations found between these three activities and the Progressive Matrices provide support for the concurrent validity of the DISCOVER assessment. Similarly, the low and nonsignificant correlations that appeared between the Storytelling and Storywriting activities and the Raven's Progressive Matrices provide the same kind of evidence (divergent validity) since RCPM and RSPM are not measures of verbal ability, whereas Storytelling and Storywriting were designed to assess linguistic intelligence.

An interesting finding is the pattern of higher correlations for higher grade levels between the DISCOVER assessment and the Progressive Matrices. One explanation may be related to the different versions of the tests used. It appears that the problems proposed in the DISCOVER assessment for grades 3–5 and the RSPM are more similar than the K–2 version of the assessment and the RCPM.

A noteworthy finding is the absence of gender differences across grade levels. Moreover, no gender differences were found in the number of boys and girls identified as gifted across grade levels. Similar results were reported in other studies that investigated the effectiveness of performance-based assessments and in which no gender differences were found (Clasen et al., 1994; Plucker, Callahan, & Tomchin, 1996). The finding that girls did as well as boys on the overall tasks of the DISCOVER assessment may indicate that the instrument is mostly fair and does not discriminate against females or males.

Moreover, a relatively high percentage of participants was identified as gifted. This finding is congruent with the results of other studies in which a performance-based assessment was used as the instrument for identification. For example, in the study conducted by Clasen et al. (1994), the final pool of identified students included 24% of the participants. One possible explanation for the relatively large percentage of identified participants in the present study may be the grounded theory on which the DISCOVER assessment is based. Given the nature of multiple intelligences, the possibility of identifying gifted minority students through the DISCOVER assessment is higher than in traditional assessments in which a full-scale IQ normed mostly on the majority population is used for identification procedures. Adherents of a full-scale IQ claim that gifted individuals are those with extremely high scores (two or two and a half standard deviations above the mean), thus constituting 3 to 5% of the population. Hence, in their view, giftedness is unidimensional and of one kind only. However, if we embrace the view advanced in the theory of multiple intelligences, giftedness takes many forms and becomes multidimensional. Statistically, the probability of identifying gifted students through the use of the DISCOVER assessment is much higher than that found in traditional tests of intelligence. By definition, through the use of the DISCOVER assessment, an individual is identified as gifted if he or she is given the rating of "Definitely" in at least two of the activities. Given that the DISCOVER assessment is composed of five activities, each individual could be identified as gifted through 10 different combinations (i.e., Pablo® and Tangrams, Pablo® and Math, Pablo® and Storytelling, Pablo® and Storywriting, Tangrams and Math, Tangrams and Storytelling, Tangrams and Storywriting, Math and Storytelling, Math and Storywriting, Storytelling and Storywriting). Thus, the probability of identi-

fying giftedness in the population is increased greatly through the use of the DISCOVER assessment, which might explain the high percentage of participants identified as gifted across grade levels in this study.

The results showed some evidence for the convergent and divergent validity of the DISCOVER assessment. However, compelling data supporting a strong statistical relationship between the DISCOVER assessment and the Raven's were not found. Why, then, would one use a complex instrument such as the DISCOVER assessment rather than a simpler one like the Raven's? Mainly for three reasons. First, because the multidimensional nature of the DISCOVER assessment enables the practitioner to assess a variety of intelligences, including linguistic ability measured both orally and in written form. Second, because the appealing material and interesting tasks used in the DISCOVER assessment might motivate students to a better performance and reveal strengths that a paper-and-pencil test cannot reveal. Third, because giftedness is not measured through percentile ranks, and hence is not limited to the upper 3% of the student population. However, one must always keep in mind the purpose of assessing students and, accordingly, use the test that best suits their interests. Indeed, providing students with the services that best meet their needs must remain the objective behind every assessment.

In sum, given the historically ineffective assessment of minorities and their under-representation in programs for the gifted, a change in assessment procedures is warranted. This study showed that the use of the DISCOVER assessment with culturally diverse groups may reduce the problem of minority under-representation in programs for gifted students. Also, evidence of the concurrent validity of the assessment provided support for its use. Moreover, the absence of gender differences may add the element of fairness to the DISCOVER assessment.

However, the limitations of this study must be kept in mind before drawing conclusions. One limitation is that the sample consisted of students from two culturally diverse groups only, Mexican Americans and Navajo Indians; therefore, further research is needed with participants from other culturally diverse groups (e.g., Asians, African Americans) to support these findings. Another limitation is that the participants belonged to lower grades; additional studies encompassing participants from upper grade levels are needed to support the use of the DISCOVER assessment with populations of different ages. Moreover, the concurrent validity of the linguistic activities of the DISCOVER assessment (Storytelling and Storywriting) needs to be examined using measures of verbal ability with previously established validity. Finally, further studies on the reliability (e.g., test-retest, internal consistency) and construct validity of the DISCOVER assessment need to

be conducted before sounding a call for the use of the assessment on a wider scale. G

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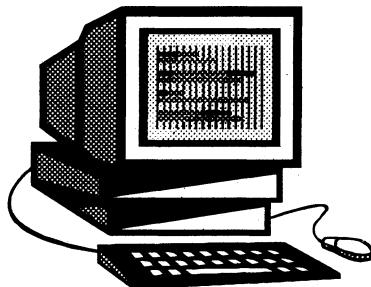
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