Identifying Achievement Potential in Minority Group Students

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Abstract: An inventory was developed to identify potentially successful college students who are from minority cultures and therefore might be missed by traditional screening procedures. An initial pool of 145 items was developed and field tested. The final instrument, entitled Relevant Aspects of Potential, *consists of 30 items and is intended to supplement other methods for evaluating student performance.*

The national effort to provide minority groups with equal opportunities in higher education is often hampered by an inability to identify potentially successful college students through traditional prediction and admission procedures. Many innovative college programs which have been established since the early 1960's have developed their own systems for identifying talent potential among students from low socioeconomic backgrounds. The common concern of such efforts has been to identify students who show a high probability of profiting from continued education and from the special assistance frequently provided during transition periods from high school to college.

Although college and university admissions personnel have increased the use of interviews for assessing the success potential of minority youth, there may be another means to identify high potential students more economically and accurately. This possibility is a questionnaire procedure which does not require the presence of an interviewer. Up to now, there have been few economic alternatives for the customary procedures of standardized testing or sending special college personnel to urban high schools to identify talented students by the essentially uncontrolled techniques of referral and interviewing. The typical identification and selection effort is often expensive, time consuming, and ineffective in terms of reaching and carefully examining large numbers of potentially gifted young people.

Related Research

A number of researchers have investigated various indicators of talent potential in culturally different groups. Torrance (1968, 1969) has determined that certain creative characteristics occur to a high degree among disadvantaged groups and that these may

discriminate between children with a great deal of intellectual potential and those with less ability. Frierson (1965) used an interest inventory to isolate certain characteristics that distinguish gifted disadvantaged youngsters from average students of low status backgrounds, and Riessman (1964) has isolated a list of the positive dimensions of the culture and style of educationally deprived people. Bruch (1969) has pointed out that the identification of disadvantaged gifted students should include personal, cultural, and family information which might affect the student's further development of his gifts. Ebel (1966) has listed some guidelines that should be used when attempting to develop reasonable alternatives to traditional identification procedures.

A comprehensive review of these and other studies dealing with the characteristics of gifted and culturally different gifted groups (Renzulli, 1973; Renzulli, Hartman, & Callahan, 1971) was used to capitalize upon previous successes and failures related to the problem area. A wide variety of indicators of future performance was explored, including previous experiences, attitudes, interests, value preferences, and sources of derived satisfaction and dissatisfaction.

Construction of a Research Instrument

Content Validity

Following the compilation of data related to indicators of future performance, an inventory was constructed. The intention was to maximize the discriminating and predictive capacity of the instrument for identifying students with exceptional potential for success at higher levels of education. The primary assumptions upon which the inventory is based are:

1. That an instrument must contain task and item content appropriate for the group being evaluated.
2. That students representing a culturally distinct minority must be compared to their own age and cultural peers.
3. That all young people have some potential but that some have high potential for successful social adjustment and personal achievement at institutions of higher learning.
4. That the most talented and gifted contributors of one culture will be those who can most satisfactorily adjust to a new cultural milieu when some supportive assistance is available to overcome obstacles that would unfairly eliminate any candidate's participation.
5. That social, creative, and intellectual giftedness must in themselves be measured for a suitable assessment of potential.
6. That self concept and motivation must also be measured directly or indirectly by the test.
7. That both the individual's attitudes toward higher education and the support and encouragement he has received for continued schooling from family, peers, and school personnel must be reevaluated in the light of his measured potential.

Originally, 113 items were written from the many basic elements comprising the pool of empirically and logically related indices of an individual's future achievement. Thirty-five additional items dealt with the amount of support for educationally related aspirations that a student received from family, school personnel, and peers. The original research edition of the instrument, therefore, consisted of 145 items of the following type:

A.   Davis has organized a successful campaign which has insured the integration of the history of minority groups into the curricula of his high school. Bill would never organize such a movement but would support the campaign. Byron sees no reason why people should bother about changing what is taught in school.
_____ I am more like Davis than like either Bill or Byron.

B.   Raymond, one of the dudes of the group, was busted by the police. Charles went right down to the police station to help Raymond. Davis volunteered to go along and support Charles. Daniel felt there was nothing he could do to help Raymond. He did not go.
_____ I am more like Charles than like either Davis or Daniel.

C.   Rodell is not at case unless she has written a paper with the opinions of many experts and scholars quoted. Bertha likes to state her own beliefs and elaborate on her own feelings rather than to take Rodell's approach.
_____ I am more like Bertha than like Rodell.

D.   Bill Johnson reads a great deal about things that interest him and finds satisfaction in thinking and rapping about what he has read with others.
_____ I am often like Bill.

E.   Rhoda is quick to sense problems about the way things are and is concerned and puzzled at why they need to be this way.
_____ I am often like Rhoda.

F.   Luddy often makes creative things in her free time. Vivian often reads about things that interest her during her spare time. Sheila usually talks with her friends during her free time.
_____ I am more like Luddy or Vivian than like Sheila.

Students were asked to respond according to the following scale: 1, strongly disagree; 2, disagree; 3, undecided; 4, agree; and 5, strongly agree.

Construct Validation

Construct validation of the research edition was investigated through three procedures: item analysis, factor analysis, and the known-groups method for determining validity. Each of these procedures as they relate to the development of a revised and validated instrument will be discussed below.

The technique was researched with cooperation and data obtained from the Hartford (Connecticut) Public Schools. The instrument was administered to seniors at an inner city high school that serves a predominantly black and Puerto Rican population.

Experimental and Control Group Subjects

Four weeks before graduation, 258 seniors were administered the instrument. They were also evaluated by four senior class counselors who had regular contact with the students for at least one academic year. The counselors were asked to identify from the total group of students those seniors who had extremely low or unrecognizable potential for continued schooling beyond high school. For research purposes this group of students with low potential was designated as the control group. Ratings that were arrived upon independently by the counselors led to the identification of 30 control group students.

From among the remaining students in the senior class to whom the instrument was administered, a random sample of 30 students possessing moderate to high potential was selected to serve as the experimental group. This procedure for selecting the experimental group was used to insure the existence of a broad range of ability and latent potential in the sample. The objective was to avoid selecting a homogeneous group of the 30 most outstanding students who could be easily and readily identified at any time by several existing traditional tests.

Counselor judgment was the only criterion available in this instance, and great care was taken to minimize error by adhering to several appropriate procedures. In addition to the previously mentioned procedure for selection of the sample through independent unanimous ratings, the counselors were also given a list which included several characteristics not traditionally recognized but which were identified as characteristics of high potential (see Renzulli, 1973). Students who were eventually chosen for the control (low potential) group did not possess any of these special talents and abilities to a recognizable degree. The rating sheet which was constructed for counselors emphasized a wide variety of areas in which students might display indications of talent potential. When counselors were undecided about any given student's potential, this person was automatically disqualified from the control group.

All students were administered the inventory under the same environmental conditions. They were randomly seated, and no student was aware of the fact that he would later be classified by the counselors according to estimated potential.

A second experimental sample consisted of 30 precollege freshmen attending the UConn Summer Program at the University of Connecticut. The UConn sample was comprised of exceptional individuals from minority groups who were enrolled in the supportive precollege educational program. Individual interviews and data sheets summarizing information about each student's background and interests were used in the selection of these students for the summer program. These same students with recognized high potential would have normally been rejected for college entrance at the University of Connecticut on the basis of their College Entrance Examination Board scores and grade point averages.

Since the high school seniors completed the inventory in June and the precollege freshmen completed the inventory in July of the same year, the precollege students

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were only 6 weeks older in chronological age than students in the high school experimental and control groups. The UConn Summer Program participants were included in the study for purposes of forming a second experimental group that was comprised of students who had been previously identified for higher education by high school counselors and college personnel on the basis of their high potential for successful adjustment to the demands of college. These students were further screened for the experimental group by having summer program counselors select the 30 students in the program who seemed to show greatest promise among the 100 students enrolled.

Item Analysis

Procedures of item analysis were used to eliminate items on the research instrument which failed to show any relationship with counselors' estimates of potential on the high school and precollege samples. Items which were ultimately retained as part of the final instrument were those which showed a significantly positive biserial correlation with the total scores of at least one of the experimental groups. In other words, internal consistency was established by comparing each individual item with the composite score of the group.

Items were rejected for one or more of the following reasons: extremely skewed distributions over the possible response categories, an extremely large number of individuals indicating "neither agree nor disagree," extremely distorted means and standard deviations, extremely small or negative correlations with counselors' estimates of potential, or negative correlation with the composite scores of the instrument.

Factor Analysis

Principal component analysis was the factor analytic technique employed for the second phase of the research. Items were deleted from the instrument if they were generally unrelated to any of the major dimensions generated by the factor analysis program.

Comparative Analysis Between Known Groups

A third method for examining the construct validity of the experimental instrument consisted of determining whether or not the item scores of the experimental groups differed significantly from the scores of the control group. Means and standard deviations were computed for each item, and t test comparisons were made between the groups. Only items which discriminated significantly between the control group and at least one of the experimental groups were retained in the final version of the instrument. Data relating to these items are presented in Table 1.

Table 1
Means, Standard Deviations, and Levels of Significance for Individual Item Comparisons Between Experimental and Control Groups

| | Experimental groups | | | | Control group | | Comparisons between groups | |
| | High school (N=31) | | Summer program (N=31) | | (N=32) | | High school vs control group | Summer program vs control group |
Item	Mean	SD	Mean	SD	Mean	SD	t	t
3	2.96	1.27	3.32	1.10	2.71	1.17	0.80	2.10*
6	3.19	1.22	3.51	0.85	2.96	1.35	0.69	1.91*
10	2.93	1.20	2.80	1.16	2.21	1.31	2.25*	1.87*
12	2.83	1.09	3.70	0.82	3.09	1.35	0.82	2.17*
14	2.93	1.09	3.16	1.81	2.56	1.21	1.27	1.97*
15	3.96	0.75	3.83	0.96	3.50	1.04	2.03*	1.33
16	3.58	1.25	3.96	0.87	3.43	1.10	0.47	2.10*
18	2.93	0.72	3.45	0.85	3.03	1.09	0.40	1.70*
22	3.38	0.95	3.54	0.92	3.12	0.97	1.07	1.76*
37	3.00	1.21	2.77	1.11	2.28	0.95	2.61**	1.88*
38	3.54	1.12	3.93	1.26	3.40	1.10	0.50	1.77*
40	3.64	0.98	3.00	1.21	3.15	1.29	1.68*	0.49
43	2.80	1.44	2.87	1.14	2.25	1.07	1.73*	2.21*
49	3.51	1.36	3.25	1.21	2.93	1.13	1.83*	1.08
54	3.19	1.10	3.06	0.96	2.78	0.83	1.67*	1.24
58	4.29	0.64	4.00	1.09	3.90	1.05	1.73*	0.34
60	2.67	1.22	2.67	1.07	2.15	0.84	1.97*	2.13*
67	3.80	0.90	3.77	0.95	3.28	1.14	2.01*	1.85*
71	3.96	1.04	3.64	1.14	3.37	1.03	2.25*	0.98
75	3.87	0.76	3.58	0.99	3.50	0.87	1.79*	0.34
80	4.09	0.87	3.87	0.76	3.59	0.97	2.15*	1.25
97	4.16	0.73	3.51	1.12	3.34	1.15	3.44**	0.60
110	3.09	1.10	3.25	1.06	2.78	1.21	1.07	1.67*
128	3.03	1.35	3.29	1.16	2.59	1.29	1.31	2.24*
129	4.38	0.98	4.32	0.94	3.78	1.23	2.14*	1.94*
135	4.54	0.85	4.32	0.74	3.84	1.16	2.73**	1.93*
138	3.64	1.35	4.00	0.89	3.34	1.12	0.96	2.55*
139	3.90	1.30	3.74	1.15	3.15	1.29	2.28*	1.89*
142	3.83	1.21	4.00	1.00	3.28	1.22	1.81*	2.54**
144	4.41	0.84	3.86	1.04	3.34	1.33	3.80***	1.71*

*$p < .05$
**$p < .01$
***$p < .001$

Results and Discussion

As can be seen from Table 1, 30 of the 145 original items significantly discriminated between the control group and at least one of the experimental groups. Although this number of discriminating items was far less than anticipated, several items may have failed to identify high potential students because of reluctance on the part of respondents to commit themselves to a definitive response in particular situations. Students generally responded to certain items which they found offensive to a sense of trust and confidence by checking "neither agree nor disagree." This assisted the researchers in the process of identification and deletion of items which were objectionable to the student in respect to content.

In a similar fashion, most respondents either agreed or disagreed with the content of certain poorly written items and this helped to identify their degree of usefulness as predictor variables. Items which were interpreted to have an extremely small correlation with the estimates of potential of the experimental groups were also deleted due to the strong probability that these items would not function to identify the high potential student on subsequent samples.

In its final form, the selection process consists only of items which help identify students with high success potential. This instrument, entitled Relevant Aspects of Potential (RAP), can be used to assist the educator in identifying the hidden aptitudes and interests of students from low socioeconomic and minority group backgrounds. It is intended to supplement, rather than supplant, other useful methods of examining high school performance. (Persons interested in obtaining copies of RAP should write to the senior author.)

Current supportive educational programs for students offer an opportunity to discover many previously unrecognized talented and gifted students. The instrument described herein is offered as a means of assisting in this discovery process, and at the same time, we hope that it will generate additional research in the area of identifying talent potential in low socioeconomic and minority groups.

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