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Identification and Intervention for Rural, Low-income, Gifted Students: A Follow-up Study

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To identify children who demonstrate talent potential, educators and researchers have begun to use multiple-measure assessments rather than the narrower approach traditionally used to identify children for academically gifted programs, usually IQ or standardized achievement test scores. One impetus for this change is the concern that many groups of children are under-identified and therefore under-represented in gifted programs. Included in the under-represented population are children from specific racial, ethnic, and cultural groups, e.g., African Americans (Ford, Grantham, & Harris, 1996; Frasier, 1987); Hispanic students (Bernal, 1979); American Indians (Tonemah, 1987); children who exhibit language differences or limitations; children from low socioeconomic status families (qualifying for poverty-level support or free or reduced cost lunch); and children who live in certain geographic areas (e.g., rural or inner-city areas, border communities, and reservations).

The reality and limitations of many of the traditional identification processes are, more often than not, at variance with contemporary research and policy on identification. Whereas appropriate practices may call for a multidimensional approach, identification data are too frequently collected from a single standardized measure and teacher nominations. While important in the identification of some gifted children, traditional identification measures such as group standardized aptitude and/or achievement tests ought not be the sole criterion in the identification process. When used as the initial screening instrument to define a pool of gifted and talented candidates, standardized measures may under-identify or eliminate gifted and talented minority students, including students from rural and inner city economically disadvantaged backgrounds.

Standardized assessments and teacher nominations are efficient and can be effective in identifying some gifted children, but are not always appropriate for identifying high ability children whose behavioral characteristics do not please their teachers, who perform poorly on tests, or, whose academic achievement has been constrained because of limited experiences or opportunities. Identifying economically disadvantaged gifted children in rural areas must be considered within the context of rural communities, rural schooling, and within the context of the two social classes, "those who have control, and those who are vulnerable to that control, the haves and have-nots" (Duncan, 1992). The National Education Longitudinal Study (NCES, 1988) reported that only 9 percent of students in gifted and talented education programs were in the bottom quartile of family income, while 47 percent of program participants were from the top quartile in family income. While research concerning alternative assessment is reported in the literature (Bernal, 1979; Frasier, 1987; Maker, 1986; Tonemah, 1987), these are somewhat dated, with only a few studies that focus on rural, economically disadvantaged, gifted children (Spicker, 1993, 1996). Also, documenting the efficacy of appropriate instruments or processes to identify students from under-represented groups who show academic potential has not been fruitful due to lack of follow-up on students. In some cases, promising practices and alternative identification procedures have been discontinued because students identified through their use were not successful in gifted programs, which were designed for traditionally identified gifted students. Studies which have considered new or unique methods of identification have found it difficult to follow up on the appropriate type of program intervention required to serve rural, economically disadvantaged students or to study the long-term effects of alternative identification on students as they proceed through the school system.

Projects SPRING I and SPRING II

Beginning in 1990, Project SPRING (Special Populations Rural Information Network for the Gifted), one of sixteen projects funded under the Jacob Javits Gifted and Talented Education Act of 1988, investigated the unique talents of rural, economically disadvantaged, gifted students. The project, implemented in three rural school districts in southern Indiana, accomplished the following goals:

1. Identified strengths and weaknesses which characterize rural, economically disadvantaged, gifted children.
2. Developed procedures for identifying rural, disadvantaged, gifted children.
3. Developed and demonstrated curricula and intervention practices appropriate for rural, economically disadvantaged, gifted students.

A continuation of Project SPRING I in two school districts followed-up those SPRING students identified in the fourth grade, who were entering junior high school. The modified science provided appropriate educational programming for students. Project SPRING II (1993-1996) concluded as students completed their first year of high school.

Projects SPRING I & II: Findings

An external evaluation collected data on students' academic performance when students completed 5th or 6th grade. While SPRING students (that is, rural ,economically disadvantaged students identified as gifted using comprehensive identification measures) performed significantly lower both before and after identification and intervention than traditionally identified gifted students in the same school system on standardized aptitude tests, achievement tests, and verbal creativity tests, they did not differ from them on creative writing or the nonverbal creativity tests.

Additionally, SPRING students did not differ from traditionally identified gifted students on measures of self-concept either before or after the SPRING intervention.

A second external evaluation carried out when SPRING students were in the 8th or 9th grade showed standardized achievement and intelligence scores for SPRING students generally dropped relative to age or grade norms during SPRING II, falling closer to the national or state mean on the tests. Overall gains in self-concept were statistically significant from the pretest at 4th grade to the posttest at the end of 8th grade.

While the results of these external evaluations suggest possible identification procedures to increase the representation of economically disadvantaged rural students in gifted programs, they also raise questions about the extent to which comprehensive identification correctly identifies gifted and talented, economically disadvantaged, rural students and the long-term effects of such identification.

Objectives

The goal of the current study is to identify factors which might influence the long-term effects of alternative identification and curriculum interventions with economically disadvantaged, rural, gifted students. More specifically, the objectives of the study are: (1) to determine if, at the end of high school, the academic achievements, self-concepts, and aspirations of students alternatively identified as gifted (SPRING) differ from students identified by more traditional approaches (GT) and from students never identified as gifted (Non- GT); (2) to identify factors which may influence individual differences in outcomes (achievement, self-concept, and aspirations) for students identified by these different approaches. The findings of this study have the potential to provide information of value to other efforts to provide alternative identification and intervention approaches, as well as attempts to assess such programs.

Methodology

The researcher met with all students in the 10th and 11th grades during their English classes at the two high schools in the SPRING participating districts, and explained that the purpose of the study was to gain information about the academic differences and differences in career ambitions of students who reside in rural communities.

Data Collection

Data collection with students at each school took place on the same day. All students were able to complete the assessments within the specified time. The researcher also collected cumulative records information on students participating in the study. Data were recorded on grades, science and math courses taken, class rank, diploma type received, as well as scores for the PSAT and the SAT.

Pre-test data on self-concept, academic achievement test scores, cognitive skills index, and anecdotal and descriptive data were retrieved from Project SPRING I files.

Subjects

There were 28 Project SPRING students, 25 traditionally identified gifted students (GT) and 53 regular students (NonGT).

Over two-thirds of subjects (71.6 percent) were female (Spring 68%; GT 60%; NonGT 80%).

Instruments

Piers-Harris Self-Concept Scale for Children

The Piers-Harris Children's Self-Concept Scale (Piers & Harris, 1969) is a published self-report questionnaire developed for students in grades 4 through 12. There are six cluster scales, each yielding a score; Behavior (16 items), Intellectual and School Status (17 items), Physical Appearance and Attributes (13 items), Anxiety (14 items), Popularity (12 items), Happiness and Satisfaction (10 items), plus a total score. Only the total scores were used in the data analyses. The Piers-Harris Children's Self-Concept Scale was used again for this study because it had been utilized in SPRING I when students were in 4th grade, thus providing for a pre- and post- (11th grade) assessment of self-concept.

IDEAS (Interest Determination, Exploration and Assessment System)

The IDEAS assessment (Johansson, 1996) is a short, self-scored interest inventory designed to be used as an introduction to career exploration for students and adults. The IDEAS inventory is used with junior high, middle school, and early high school students in conjunction with career programs and guidance units in social studies courses.

Indiana Statewide Testing for Education Progress-Plus

The Indiana Statewide Testing for Educational Progress-Plus (ISTEP+) (Indiana Department of Education, 2000-2001) is administered to all Indiana public school students in grades 3 through 10. In this study, scores from grade 3 served as a control measure and grade10 as the dependent variable. Total battery scores were used for the data analyses.

Test of Cognitive Skills

The Test of Cognitive Skills (1985) is a group intelligence test used to measure the abilities needed to acquire the desired cognitive outcomes of formal education. The test has a mean of 100 and a standard deviation of 16. The score indicates a student's overall cognitive ability, or academic aptitude, relative to students of similar chronological age without regard to grade placement.

High School Diploma

Indiana awards three diplomas to those graduating high school. The type of diploma depends upon the academic program of each student.

Academic Honors Diploma. To receive an Academic Honors Diploma, one must have an overall B grade point average and earn 47 credits (nine more than what is needed for the regular diploma and seven credits more than a Core 40 diploma) with a grade of C or better.

Indiana Core 40. Core 40 is a single, flexible, high school curriculum, which, except for elective courses, uses a single set of agreed-upon competencies. These competencies direct the content of both college prep and tech prep courses.

General Diploma. Thirty-eight credits are necessary to satisfy the general diploma requirement.

Preliminary Scholastic Assessment Test

The Preliminary Scholastic Assessment Test (PSAT) is published by The College Board as a tenth or eleventh grade practice instrument for students taking the Scholastic Assessment Test (SAT) in the eleventh and twelfth grades.

Scholastic Assessment Test

The Scholastic Assessment Test (SAT) is designed to measure verbal and quantitative reasoning skills. SAT scores primarily help forecast the college academic performance of individual students. The composite SAT score (verbal + math) was used for data analyses.

Math and Science Courses Completed

The number of math/science courses taken during high school is a substantive indicator of college plans/intention for higher education, and professional goals for the future. These measures were compared across the three groups to identify quantitative differences and confirm other data.

Research Questions

1. (a) Are the educational achievements of SPRING students different from GT students and NonGT students as they complete high school?

   (b) Do these differences occur when initial achievement differences are controlled?

2. Are the academic and career aspirations (as indicated by the number of math and science courses students completed) of SPRING students different from GT students and NonGT students as they complete high school?

3. (a) Is the self-concept of SPRING students different from GT students and NonGT students at the 11th grade?

   (b) Do these differences occur when controlled for initial differences in self-concept?

   (c) Are differences among groups influenced by gender and school attended?

Summary of Findings

Achievement and ability. Results showed that traditional GT students surpassed SPRING students and NonGT students on all academic and ability outcome measures. When controlling for initial achievement, these differences were maintained at about the same level of significance in favor of the GT group but accounted for a smaller proportion of variance.

Academic and career aspirations. SPRING and NonGT students were found to take fewer math and science courses than the GT students, even controlling for initial achievement. However, while a significantly higher percentage of GT than SPRING students took college entrance exams and went on to college, significant differences were not found between GT and NonGT students on these measures. When career interests were assessed, the three groups did not differ on the Investigative Theme. However, when gender was controlled, SPRING students scored significantly higher than GT students did on the Realistic Theme.

Self-concept outcomes. There was a significant interaction between the two high schools and identification for self-concept. SPRING students enrolled in School A had significantly higher total self-concept scores than both GT and NonGT students, whereas, at School B, GT and SPRING students had significantly higher total self-concept scores than NonGT students. No similar interactions existed on pretest self-concept scores. When the six individual self-concept clusters were analyzed using a two-way ANOVA (school, identification), significant interactions were found on four of the clusters. In all cases, GT students scored much higher in School B than School A. SPRING students scored high in both schools, NonGT students scored especially low in School B.

Self-concept as predictor. When pretest self-concept was used to predict high school academic achievement and ability outcomes and career aspirations, no significant correlations were found.

Conclusions

This study was a follow-up of students who were identified in the fourth grade as potentially gifted (Project SPRING) using comprehensive assessments. While curriculum interventions occurred in the elementary school, and continued in one content area through the first year of high school, this early and intermediate intervention was not consistently implemented. To effect a positive change in the academic achievement and aspiration outcomes of rural, economically disadvantaged, gifted children, the findings of this study would suggest that when alternative identification is employed, the curriculum intervention must be sufficiently challenging and consistently implemented to mediate between the expectations of school and the child's early experiences.

Rural students in general, but in particular rural, potentially gifted students from economically disadvantaged backgrounds, represent a unique population. On the one hand, they may have the same academic and professional aspirations as their more advantaged peers; on the other hand, they lack the economic resources, social capital, and parental support to realize their goals. The transitions from elementary school to middle school and middle school to high school can be crucial times for these students as they transition to a more academically rigorous program.

Factors which may promote higher achievement outcomes for rural, gifted, low socioeconomic students include:

A. Providing parents and students with information on appropriate coursework to take to prepare for college, as well as actively counseling students and parents.

B. Monitoring a student's academic progress and offering additional tutoring where necessary.

C. Maintaining regular contact with parents regarding academic coursework and taking college entrance exams.

D. Screening for students who qualify for state-sponsored scholarship programs, and assisting them and their parents as they complete the necessary qualifying forms.

E. Developing and making available a simple checklist and deadline of what students ought to do and when, i.e., register for PSAT and SAT, take appropriate courses, apply for financial aid.

F. Fostering and supporting local professional adults who are in a position to mentor the economically disadvantaged gifted student.

Developing appropriate and varied identification procedures which are sensitive to the expression of giftedness in rural populations from the different racial, ethnic, or cultural groups is essential. This requires knowing the norms, values, and community resources before embarking on determining which techniques or strategies of identification are the most efficacious. Such studies would be useful by laying the groundwork for future, more specific research. As shown in this study, the complexity of changing identification strategies and curriculum interventions for non-traditional gifted groups is more difficult, requiring further theoretical analyses and follow-up. ❖

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We are delighted to announce that Joan Freeman has been honored with
The Lifetime Achievement Award for 2007 from the British Psychological Society
This is an extraordinary honor in many ways, not least because Joan's field of endeavor,
the promotion of gifts and talents, is not a priority for the society.
The award is to be presented formally at a gala dinner in Dublin in April 2008.