

RURAL MINORITY STUDENTS: A CHALLENGE FOR ASSESSMENT PERSONNEL

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Abstract

Due to the significant over-representation of rural culturally diverse students identified as learning disabled, this study investigated the effects of modifying the discrepancy formula between intelligence and achievement. This formula is commonly used to identify and place school-age students in programs for children and youth with learning disabilities. Three modifications were applied to the discrepancy formula using a sample of 123 students currently being served in classes for children and youth with learning disabilities in a rural Mississippi school district. The results indicated that modifying the assessment protocol and raising the minimum Full Scale IQ to 85 in the discrepancy formula resulted in the greatest reduction to the over-representation of rural culturally diverse students assessed for learning disabilities. Suggestions for future research in this area are offered.

The number of students in special education has grown every year since the passage of The Education for All Handicapped Children Act (P.L. 94-142) in 1975. This growth has resulted in a special education classification for approximately 12% of public school students. Some authorities feel the incidence of special education placement has reached crisis proportions (Briand, 1995). The area of learning disabilities is the most significant factor in this dramatic increase (Heward, 1996).

Mississippi's situation is reflective of the national problems facing the area of learning disabilities. The statewide growth in students identified with learning disabilities far exceeds national trends. Between the 1976-1977 and 1992-1993 school years, Mississippi experienced a 1,020% increase in the number of students identified as having a learning disability (U.S. Department of Education, 1994). This increase was the largest of any state and is considerably larger than the national mean increase of 198%.

Rural Mississippi

The problems facing Mississippi schools are primarily rural problems. More than 69% of Mississippi students are educated in rural areas and small towns (Miller, 1997). The state capital of Jackson is the only metropolitan area within the state. As noted by Miller (1997), "A significant number of Mississippi's poor families are concentrated in highly distressed rural areas where living conditions for many people can only be described as primitive" (p. 1).

The efforts of Mississippi's 876 public schools to provide appropriate educational experiences to students are hampered by the multifaceted impact of rural poverty. The statistics are grim and riveting. Children and youth from single parent families comprise 30% of Mississippi school students (Miller, 1997). The child poverty rate of 32% is second only to that of neighboring Louisiana. Median family income is the lowest in the nation. More than half of Mississippi school children are eligible for free or reduced-price school lunches.

In addition, Mississippi is the only state with a majority non-Caucasian student enrollment. While only 36% of the state's population is African American, this ethnic group accounts for 52.3% of public school students (Miller, 1999). In addition, a breakdown of the state's ethnic groups shows that from 1990-1998 a significant population shift occurred with an increase of 46.6% for Asian Americans, of 41.5% for Hispanic Americans, and of 17.7% for Native Americans (Moore, 1999).

A recent national report, *Quality Counts '99*, paints a somber picture of Mississippi schools. The effects of rural poverty on school performance have been both widespread and pronounced. Special education placement accounts for 13.2% of the state's public school students (Miller, 1999). Student scores on the norm-referenced Iowa Test of Basic Skills (ITBS) are among the lowest in the nation (Miller, 1997). State school districts that score the highest on the ITBS do not reach beyond the 60th percentile (Miller, 1999). The American College Test (ACT) assessment scores of Mississippi students are lower than any of the other 26 states where the test is administered. Student data from the National Assessment of Educational Progress indicates that only 18% of fourth graders are proficient readers and less than 10% of eighth graders are proficient in math.

The effects of too much poverty, too few resources, and decades of educational apathy cripple the efforts of many public school teachers to provide appropriate instruction. Mississippi's educational system is "one of the nation's least successful by objective measures" (Miller, 1997, p. 1). The problems facing Mississippi schools have had an obvious and predictable affect on students in special education. As a group, rural culturally diverse students with disabilities have fared poorly in Mississippi schools.

As noted by Utley (1995), "culturally and linguistically diverse students face quadruple jeopardy due to a combination of factors, such as poverty, language, culture, and/or disabling condition; this has devastating effects on their educational opportunities and makes them vulnerable to placement in special education" (p. 303). The result of this phenomenon may well be the inappropriate labeling and stigmatizing of at-risk, rural students. This study examines some of the implications of Utley's findings for a representative, rural Southern school district. Does the current assessment protocol place rural, culturally diverse students at inordinate risk for classification as learning disabled?

Current Assessment Protocol

The IQ-achievement discrepancy formula is perhaps the most common placement procedure in the United States. This formula is used in 37 (74%) of the states (Payette & Clarizio, 1994). However, with its popularity, has come increasing criticism as to the validity of this approach (Spear-Swerling & Sternberg, 1998). Among other limitations, no mathematical formula can clearly describe human characteristics. Discrepancy formula procedures focus "exclusively on the relationship between potential and achievement measures and ignore other learning characteristics unique to individuals with learning

disabilities. Many human and clinical factors cannot be put into any formula, and other imperative information must also be considered” (Lerner, 1997, p. 98).

In most cases, the IQ-achievement discrepancy formula is used to describe a difference of at least one standard deviation between the Full Scale IQ score and the subtest scores on a standardized achievement test. The Mississippi Department of Education, however, allows placement using that formula along with two other discrepancy formulas. In Mississippi, students can be identified by a discrepancy between an achievement score and the WISC III Performance, Verbal, or Full Scale IQ. Many states and agencies restrict the discrepancy to differences between achievement scores and the Full Scale IQ alone.

The eligibility and placement procedures in Mississippi appear especially broad. One outcome of such varied placement options is the over-identification of at-risk rural students. In particular, culturally diverse students may be vulnerable for erroneous learning disabilities classification. Without rigor in the assessment guidelines, the eligibility criteria of learning disabilities can be manipulated to serve any at-risk student.

A re-examination of the placement options in Mississippi and other rural Southern states appears warranted. If the category of learning disabilities is being overused, additional stringency should be applied to the placement procedures. Possible solutions include the following:

1. Use only the Full Scale IQ in the IQ-achievement discrepancy formula. This is a standard utilized by Vocational Rehabilitation and other agencies.
2. Limit placement to students with a Full Scale IQ score in the average range, 85 and above. This is a historical standard widely recognized in the field (i.e., Kirk, Gallagher, & Anastasiow (1997)).
3. Require a discrepancy of 1½ standard deviations in the formula. This mirrors a practice recently adopted by the state of Georgia.

The purpose of this study was to determine the effects of more restrictive assessment formulas on the placement patterns of culturally diverse students in Mississippi. The specific research questions to be addressed include:

- Question #1. Would limiting eligibility to a discrepancy between only the Full Scale IQ and achievement better balance the proportion between Caucasian and non-Caucasian students identified as learning disabled?
- Question #2. Would limiting eligibility to students who had Full Scale IQ scores of 85 and above better balance the proportion between Caucasian and non-Caucasian students identified as learning disabled?
- Question #3. Would limiting eligibility to students who had achievement scores 1½ standard deviations (22 points) below their Full Scale IQ scores better balance the proportion between Caucasian and non-Caucasian students identified as learning disabled?

Method

Subjects

All data were collected from a typical, rural Mississippi school district comprised of a heterogeneous group of students. Demographic data on the district revealed that 33.2% of the students were Caucasian with the remaining 66.8% of students non-Caucasian. Similar to other rural school districts within the state, 63% of students qualified for free or reduced school lunch. Student records were used to answer the research questions. The records were accessed by school district personnel following administrative and school board approval. The principal investigators received only non-identifying assessment and placement information on each student. The study included all students who met the following criteria: placement in special education, enrollment in grades 1-8, and classification as learning disabled due to an

intelligence-achievement discrepancy. This sample was comprised of 123 students of whom 85.4% (n =105) were non-Caucasian and 14.6% (n =18) were Caucasian.

Procedures

Assessment and placement data on each student were analyzed including the student's ethnicity, verbal intelligence quotient, performance intelligence quotient, full scale intelligence quotient (based on the WISC-III), and standardized reading and math scores (based on individual achievement tests commonly used by school psychologists, e.g., Woodcock-Johnson Psychoeducational Battery-Revised, Wide Range Achievement Test 3, and the Wechsler Individual Achievement Test).

All data were entered and analyzed using a frequency of occurrence of variables with an SPSS statistical package. The analysis described the current placement patterns of students classified as learning disabled. In addition, a binomial test was calculated to examine the effects of various modifications on the ratio of culturally diverse students found eligible for learning disabled classes. Specifically, the analyses were altered in the following ways:

1. Eligibility using one-standard deviation (15 points) discrepancy between Full Scale IQ and achievement;
2. Eligibility using one-standard deviation (15 points) discrepancy between a Full Scale IQ of 85 and above and achievement; and
3. Eligibility using one and one-half standard deviation (22 points) discrepancy between Full Scale IQ and achievement.

Results

Question #1

To answer Question #1, the researchers modified eligibility criteria to use only the Full Scale IQ in the discrepancy formula. As can be seen in Table 1, a change to the sole use of the Full Scale IQ resulted in an overall decrease from 123 to 72 eligible students, representing an overall reduction of 41.5%. A corresponding reduction of 105 to 58 was seen among non-Caucasian students. The resulting 45% decrease in the number of non-Caucasian students identified as learning disabled did not significantly alter the ratio between Caucasian and non-Caucasian students.

Table 1
Effects of Eligibility Criteria on Ethnicity Placement

Question	Students identified by	Total Eligible Students	Eligible Caucasian Students	Eligible Non-Caucasian Students	Reduction of Non-Caucasian Students
	Current placement practices	123 (100%)	18 (14.6%)	105 (85.4%)	n/a
1	15 point discrepancy between Full Scale IQ and either reading or math	72 (58.5%)	13 (18.3%)	58 (81.7%)	3.7%
2	15 point discrepancy and Full Scale IQ of 85 and above	50 (40.6%)	12 (24.0%)	38 (76.0%)	9.4%
3	22 point discrepancy between Full Scale IQ and either reading or math	36 (29.3%)	7 (19.4%)	29 (80.6%)	4.8%

Question #2

In response to Question #2, the researchers modified eligibility criteria to use the Full Scale IQ of 85 and above in the discrepancy formula. As evident in Table 1, this formula resulted in an overall decrease from 123 to 50 eligible students, representing a reduction of 59.3%. A corresponding reduction of 105 to 38 was seen among non-Caucasian students which resulted in a 64% decrease in the number of non-Caucasian students identified as learning disabled. This result approached significance ($p = .0528$). This modification depicts a noticeable change in the ratio between Caucasian and non-Caucasian students.

Question #3

To answer Question #3, eligibility criteria were modified to use both the Full Scale IQ and a discrepancy of $1\frac{1}{2}$ standard deviations (22 points) in the discrepancy formula. As seen in Table 1, this modification resulted in an overall decrease from 123 to 36 eligible students, representing a reduction of 70.7%. A corresponding reduction of 105 to 29 was seen among non-Caucasian students. A corresponding 72% decrease in the number of non-Caucasian students identified as learning disabled did not significantly alter the ratio between Caucasian and non-Caucasian students.

Discussion

As the field of learning disabilities has evolved from its beginning with pioneers such as Kirk, Osgood, and Myklebust, educators have expanded and possibly distorted the original components of the disability. Early, as well as many current, researchers believe that this population was characterized by students with specific learning or processing deficits. The current assessment model appears to have wandered significantly from its historical moorings. Consequently, the liberal application of this model has resulted in the over identification of at-risk students as learning disabled.

The data indicated that each of the three modifications resulted in reduced numbers of students eligible for learning disabled classes. This is not surprising, as more rigid assessment criteria will obviously result in smaller numbers of eligible students. The use of only the Full Scale IQ in the formula resulted in the smallest reduction of non-Caucasian students, a 3.7% reduction from current placement practices. The use of a $1\frac{1}{2}$ standard deviation (22 point) discrepancy between the Full Scale IQ and achievement resulted in a relatively small decrease in the number of non-Caucasian students, a 4.8% reduction from current placement practices.

The modification that both reduced and better balanced the number of non-Caucasian students placed in learning disabled classes was the utilization of one standard deviation discrepancy between achievement and a Full Scale IQ of at least 85. This resulted in a meaningful reduction of non-Caucasian students, a 9.4% reduction from current placement practices. Of the 50 students identified under this modification, 38 (76%) were non-Caucasian. This percentage more closely approximates the ethnic breakdown of the district at large, 63% non-Caucasian.

Some would argue that these rural students (i.e. those scoring below 85 IQ) are in need of special education services. The researchers do not dispute their need for assistance, but feel strongly that they do not fit the traditional profile of students with a learning disability. Students with measured IQs below 85 or who have moderate learning discrepancies clearly represent a separate population. Schools generally accepted their responsibility for serving

this population before the field of learning disabilities was established at the national level. The needs of rural, at-risk students may be better met through the restoration or addition of services such as certified remedial reading teachers, inclusive classrooms, Chapter I programs, summer programming, and nongraded school curricula, where a student progresses at his/her own rate. Educators working with at-risk students must model and employ the best practices in the field. These best practices include: mnemonic strategies, computer assisted instruction, peer tutoring, bimodal instruction, applied behavior analysis, the use of manipulatives, cooperative learning, direct instruction, and diagnostic-prescriptive teaching.

Further research appears to be needed in the area of learning disability eligibility. A major topic for investigation should be the factors which contribute to minority over-representation in learning disabilities and other special education categories. Among the factors which should be addressed are the effects of poverty, limited educational opportunities afforded the parent(s), and the validity of current psychoeducational testing instruments for minority students. In addition, further examination should address the issue of gender inequities in rural schools. The traditional approach to education leads to a disproportionate referral and placement rate for non-Caucasian males.

The practice of utilizing a discrepancy formula will, in all likelihood, continue to be widely used. Therefore, the suggestions put forth in this article are an attempt to develop more reasonable criteria to identify students with definitive learning disabilities. Hopefully, this will prevent future students from being incorrectly labeled and possibly stigmatized. In addition, it should reduce the over-identification of non-Caucasian rural students. A discrepancy model incorporating a Full Scale IQ score of 85 and above may well provide a more conceptually sound method to identify only those culturally diverse rural students who have valid learning disabilities.

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