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ABSTRACT

This paper opposes the use of discrepancy formulas to identify students with learning disabilities (LD) and stresses the importance of clinical judgment by members of the multidisciplinary evaluation team (MDT). It presents the LD identification procedures required by the Individuals with Disabilities Education Act, examines why formulas are not appropriate for determining a severe discrepancy, and recommends a method of LD identification that is both professionally sound and legally complaint. It begins with a discussion of H. R. Myklebust's 1968 formula to determine "expectancy age." Next it cites legislation and regulations concerning the definition of learning disability and the three-fold determination requirement placed upon the MDT to determine that: (1) a severe discrepancy exists between ability and achievement; (2) the discrepancy is not primarily due to factors other than LD; and (3) the student needs special education. The inappropriateness of the use of discrepancy formulas is supported by citations from the U.S. Office of Education opposing the use of a formula as the sole determiner of eligibility. The paper addresses reasons for the continued use and abuse of formulas and critiques a 1994 proposed formula by R. H. Good which identifies the lowest performing six percent of students, compared to their age and grade peers, to have a severe discrepancy. The paper concludes by emphasizing the importance of the professional qualifications and judgment of MDT team members. Contains seven references. (DB)

Identifying Students Who Have Learning Disabilities

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IDENTIFICATION OF STUDENTS WITH LEARNING DISABILITIES (LD) FOR SPECIAL EDUCATION services has been problematic since specific learning disability was included in the P.L. 94-142 regulations as a category of eligibility for special education services in 1977. Very early in the history of remedial education, attempts were made to quantify a child's achievement relative to the child's potential for achievement in hopes of establishing a method of formal assessment of "academic retardation" (Hallahan & Kauffman, 1976). A typical formula was that of Myklebust (1968):

$$\frac{\text{Mental Age} + \text{Life Age} + \text{Grade Age}}{3} = \text{Expectancy Age}$$

Mental age was derived from an intelligence test, life age was an indication of the child's physiological maturity based on chronological age, and grade age indicated the child's school experience. Myklebust's assumption was that the ratio of the child's actual achievement to expectancy should be at or above 90. Anything less than 90 was indicative of a learning disability (Hallahan & Kauffman, 1976). Myklebust's formula was just one step along the path to special education's current infatuation with formal quantification of learning disabilities. The use of formulas for identifying students with LD has not been unanimously accepted, however. While some state departments of education are actively promoting particular formulas for identifying a severe discrepancy, many leaders in the field of LD are attempting to remove the "severe discrepancy" clause from the federal definition of LD (Hammill, Patton, Cessna, & Bryant, 1994). In this paper we present the LD identification procedures required by the Individuals with Disabilities Education Act (IDEA), examine why formulas are not appropriate for determining severe discrepancy, and recommend a method of LD identification that is both professionally sound and legally compliant with IDEA regulations.

Legal Requirements for LD Identification

IDEA regulations define a learning disability as:

> A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and devel opmental aphasia. The term does not apply to children who have learning problems that are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage.
> (34 CFR 300.7[a][10])

The criteria which must be met for a child to be found eligible are also spelled out in the IDEA regulations. A properly constituted, multidisciplinary team (MDT) must find:

> (a) That a child has a severe discrepancy between achievement and intellectual ability in one or more of the following areas—
> (i) Oral expression;
> (ii) Listening comprehension;
> (iii) Written expression;
> (iv) Basic reading skill;
> (v) Reading comprehension;
> (vi) Mathematics calculation; or
> (vii) Mathematics reasoning.
> (b) The team may not identify a child as having a specific learning disability if the severe discrepancy between ability and achievement is primarily the result of—
> (1) A visual, hearing, or motor impairment;
> (2) Mental retardation;
> (3) Emotional disturbance; or
> (4) Environmental, cultural or economic disadvantage (34 CFR 300.541).

Furthermore, the team must determine that because of the specific learning disability the child needs special education and related services (34 CFR 300.7[a][1]).

These determinations must be based on assessment "in all areas related to the suspected disability, including, if appropriate, health, vision, hearing, social and emotional status, general intelligence, academic performance, communicative status, and motor abilities" (34 CFR 300.532[f]).

Furthermore, the comprehensive assessment must be made by a team comprised of at least four persons including a "specialist with knowledge in the area of the suspected disability" (LD) (34 CFR 300.352[e]) and also include:

> (a)(1) The child's regular teacher; or (2) If the child does not have a regular teacher, a regular classroom teacher qualified to teach a child of his or her age; or (3) For a child of less than school age, an individual qualified by the SEA to teach a child of his or her age; and (b) At least one person qualified to conduct individual diagnostic examinations of children, such as a school psychologist, speech-language pathologist, or remedial reading teacher (34 CFR 300.540).

In summary, to determine LD eligibility, a multidisciplinary evaluation team must find that:

> (1) A severe discrepancy exists between ability and achievement in reading decoding, reading comprehension, math facts, math applications, written or oral expression, or listening comprehension.
>
> (2) The discrepancy, if one exists, is not primarily due to mental retardation, emotional disturbance, sensory or motor impairment, or cultural, economic or educational disadvantage; and therefore is presumed to be due to LD.
>
> (3) The student needs special education because of the LD.

With this three-step eligibility process, a number of scenarios are possible. For example, a child with a severe discrepancy may

be learning disabled but not need special education because the general education curriculum is sufficient. Likewise, it is possible that a child may have a severe discrepancy in one of the listed academic areas, but the team may find that the discrepancy is due to environmental disadvantage, and thus the child is not eligible for special education. Or a team may determine that a child has a severe discrepancy which is caused by a learning disability and requires special education (i.e., specially designed instruction such as a specialized math remediation program).

Problems in LD Identification

As is well known, the LD identification process is not always executed perfectly. Too many MDTs simply employ a formula to compare two scores on standardized tests — usually a Woodcock-Johnson with a WISC sometimes tossed in — and pronounce the student LD or not LD. This formula abuse problem will be discussed later.

The next step, if a severe discrepancy exists, is to determine its cause. While some MDT teams are comfortable excluding discrepancies due to mental retardation, emotional disturbance, or sensory or motor impairment, few are comfortable with the relationships among learning problems and cultural, economic, or educational disadvantage. Fewer yet ever directly ask whether a learning disability is the cause of the discrepancy.

Finally, the MDT team must also determine whether the child needs special education. All too often, the MDT team never reaches this third step. Even when an MDT team does consider this third element, it is too often the case that the team members lack sufficient knowledge of LD to determine whether the child truly needs specially designed instruction.

Sometimes, it is this lack of specialized, current knowledge about the rapidly exploding field of learning disabilities that drives MDTs to rely upon a formula. More will be said about this reliance upon formulas after we examine the problems inherent in any use of formulas to define severe discrepancy.

Why Discrepancy Formulas are Inappropriate

The federal government recognized very early on that the use of formulas for identifying students with learning disabilities was not appropriate. In 1980, Garry McDaniels, Director of the Bureau of Education for the Handicapped, concluded that

> In establishing the existence of a severe discrepancy, the team has to make a judgment about the importance of any difference that exists between expected and actual achievement. Making this judgment requires more than just the use of a formula to establish a discrepancy score....the use of a formula with a numerical eligibility cut-off criterion could have a serious negative effect on the identification of some handicapped children (O'Grady, 1980).

McDaniel's comments reflected the official stance of the U.S. Office of Education (USOE). This position was established much earlier, when a formula had been included in the proposed P.L. 94-142 (EHA) regulations. In 1977, the U.S. Office of Education (USOE) rejected the inclusion of any formula in the LD identification process and summarized its reasons in the Federal Register:

> Many commenters objected to the formula proposed for establishing a severe discrepancy between ability and achievement. Their concerns fell primarily into four areas:
> (1) The inappropriateness of attempting to reduce the behavior of children to numbers;
> (2) The psychometric and statistical inadequacy of the procedure;
> (3) The fear that use of the formula might easily lend itself to inappropriate use to the detriment of handicapped children;
> (4) The inappropriateness of using a single formula for children of all ages, particularly pre-school children.

Response

Because of the above and other concerns, the Office of Education conducted a study to determine the effectiveness of the formula. While the findings showed that the formula has a certain degree of operational validity, they also identified pronounced technical limitations in its application, including all four concerns listed above. Given the type and number of technical limitations, it has been determined that the formula should not be included in the final regulations.

Comment

A few commenters recommended alternative formulae for use in determining the existence of a severe discrepancy between ability and achievement.

Response

None of these formulae were adopted. Each was found to have the same types of technical limitations as the formula in the proposed rules (Regulations for Evaluating Specific Learning Disabilities, 1977, p. 65084).

In addition to the concerns raised in 1977 that persuaded the USOE to reject use of formulas, there are a number of other problems. One of these is the difficulty in using a formula to explain to parents why their child is or is not eligible for special education services. The problem of communication with parents is one reason the Learning Disabilities Association of America, a huge parent organization devoted to advocacy for children with LD, strongly opposes the use of formulas.

Another problem is that when an MDT uses a formula, it almost inevitably becomes the sole determiner of eligibility. The USOE has repeatedly warned against reliance on a formula and failure to use clinical judgment. This early statement is typical:

> In establishing the existence of a severe discrepancy, the team has to make a judgment about the importance of any difference that exists between expected and actual achievement. Making this judgment requires more than just the use of a formula to establish a discrepancy score. For example, a two year difference between achievement and intellectual ability at age seven has a different meaning than a two year difference at age sixteen. In the event that the assessment team determines that a child has a specific learning disability, even though the application of the formula indicates that he does not have a severe discrepancy between expected achievement and actual achievement, the team judgment must prevail (O'Grady, 1980).

Despite the clear legal constraints on use of formulas, MDT teams still put their trust in formulas and overrely upon them.

Yet another problem with formulas is the necessity of choosing two and only two scores to enter into the formula. We all learn in Measurement 101 that no child can be reduced to two test scores or dots. Yet that is exactly what every discrepancy formula does. Even if we were to allow that procedure for some children, the child suspected of having a learning disability would be the last one for whom it would make sense.

Consider the following information from the file of Joe, a 12-year-old 7th grader:

Reading:

- 2.7 grade equivalent on decoding test A
- 3.6 grade equivalent on comprehension test B
- 4.5 grade equivalent on vocabulary test C
- 50-75 words per minute/5-10 errors in 3rd grade material
- Standard Score of 74 on overall reading test D
- 8 percentile on reading decoding subtest E
- 26 percentile on a reading comprehension subtest F

Intelligence:

- S-B IQ 122
- Slossen IQ 119
- WISC V 128; P 91 (1993)
- WISC V 118; P 96 (1994)
- PPVT 112
- Woodcock-Johnson Cognitive SS 110

If the lowest reading score were compared to the highest IQ score, the discrepancy score would be far, far larger than if the highest reading score were compared to the lowest IQ score. Even if only one reading and one ability score are available, the problem is the same. Either score could be at either end of Joe's true range of scores, and we have no way to know which is where or what is what. Again, no child should be reduced to two dots. We will return to Joe later and suggest a solution to the two-dot problem in all formulas. But first it is important to ask why so many remain enamored of a formula, cling to it, and rely upon it when the law and good practice mandate otherwise.

Why Formulas are Still Used

The continued use and abuse of formulas to define severe discrepancy often results from three factors: (a) the MDT lacks sufficient knowledge and expertise about LD to rely comfortably on professional, clinical judgment; (b) MDTs fear the legal system and mistakenly rely on a formula for "protection;" and (c) many special education professionals today value technical adequacy over professional judgment. More needs to be said about each reason.

First, the characteristics of LD are in fact multidimensional and complex. New research is continually and rapidly expanding our knowledge base (e.g., Lyon, 1993). This complexity cannot possibly be captured in two test score dots. Identifying a learning disability when one exists requires knowledge of the characteristics of LD, experience teaching children with and without LD, and effective teaching skills to help determine when a learning problem isn't LD. And even an initially well qualified MDT team must be updated constantly on research developments to help guide its decision-making.

The lack of knowledge of LD characteristics is perhaps best exemplified by the continued reliance on norm-referenced achievement and IQ tests while far more strategic tests (e.g., phonemic or phonological awareness) are ignored because they don't fit into the formula approach to severe discrepancy. Unfortunately, many MDT members are uncomfortable with their own knowledge of LD and consequently, prefer to rely on a formula. The IDEA regulations require two more professionals on every team assessing a student suspected of LD than are required for assessing any other disability. This mandated expansion of the team is a response to the admitted difficulty of the task of LD identification and the expertise it requires.

Due to the overreliance of MDT teams on norm-referenced IQ and achievement tests, however, even legally constituted teams too often defer to school psychologists because of their specialized knowledge of tests and measurement, standard scores, and regression formulas. When this occurs, the professional judgment of the special education and other teaching personnel who know the child the best is superseded by the discrepancy formula.

In addition, school personnel are under the misconception that the legal system (i.e., judges and hearing officers) prefers the use of numbers over professional judgment in determining eligibility for special education. On the contrary, we are aware of no cases where courts or hearing officers found that a team relied too much on professional judgment and not enough on a discrepancy formula. In Riley v. Ambach (1980), the court did find that an eligibility determination could rely unduly on a formula at the expense of professional judgment. The message for those who fear the legal system is to depend on the team's professional judgment while considering test results — not vice versa.

We also suspect that school districts continue to use discrepancy formulas because the "zeitgeist" in special education presently devalues clinical and professional judgment and places greater value on technical adequacy. In

the early 1960s, when the field of learning disabilities was in its infancy, clinical expertise was greatly respected. Pioneers in LD such as Sam Kirk, Newell Kephart and Marianne Frostig were all master clinicians. The tests that in their hands were precision instruments — the ITPA, the Purdue Perceptual Rating Scale and the Developmental Tests of Visual Perception — were quite literally obliterated by the 1970s focus on technical adequacy and number crunching, enabled and bolstered by software and hardware previously unknown. The loss was significant. We can only hope that special education's thirty-year cycle will soon return clinical expertise to its rightful place in LD identification. However, there is presently a dearth of expertise to be returned.

The Story of One More Proposed Formula

The tale of the LD formula problem perhaps can be highlighted in closing by examining a real and recent proposal for yet one more mathematical approach to defining LD. During September and October of 1994, the Office of Special Education of the Oregon Department of Education sponsored three regional forums and one Ed-Net broadcast to promote awareness and acceptance of Good's (1994) proposal for defining the LD-related concept of severe discrepancy as student achievement "reliably and unusually below the average of their age and grade peers." Good limits the formula itself to defining discrepancy. Then, without acknowledging he does so, Good uses discrepancy to define eligibility. While using discrepancy in this way reflects exactly the practice of ill-informed MDTs, it does not fulfill the threefold eligibility criteria of the law — the presence of a severe discrepancy between the child's ability and achievement; reason to believe the discrepancy is due to LD, not the excluded conditions; and a judgment that the student needs special education because of a learning disability.

Such a radical proposal deserves careful attention. In a 28-page handout which accompanied the presentation, Good raised what he calls eligibility issues. The first is the clinical judgment or "eye of the beholder" aspect of identifying LD. However, to object to the need to draw lines or exercise judgment is to object to much of the human endeavor and to the identification of almost all disabilities. Even so-called medical diagnoses such as ADD require line drawing.

Second, Good objects that not every district, state, or MDT identifies the same proportion of students as LD. Twenty-nine Oregon counties identify 5-8% of their K-12 students as LD, four identify less than 5%, and three identify 9-10% as LD. This variation may be due to better regular education in some counties than in others and/or to the fact that LD may be caused by factors which operate differentially in different communities such as pollution, parental drug use, inadequate nutrition, genetic patterns, lead poisoning, and numerous others. The only way to obtain the same proportion of LD in every community is to disregard reality and instead use an arbitrary, mathematical method.

Good also suggests that LD may "proliferate without restraint." However, the topic here isn't rabbits on the loose, it is a disability whose national numbers leveled off in 1986 and haven't risen since. Since the incidence of identified LD students was zero in 1977, it isn't surprising that it took several years to rise to its present level of about 50% of the total school population which is identified as disabled.

Good presents four types of discrepancy methods and rates each on three criteria. His score card indicates whether each method produces discrepancies which are (a) reliable, (b) occur "very seldom" in the general popu-

lation, and (c) are meaningful (i.e., persons with the discrepancy differ in educationally important ways from persons without the discrepancy).

The developmental discrepancy (using ability minus age or grade equivalents) and simple discrepancy (standard score comparison of IQ and achievement) methods are both dismissed as meeting none of the criteria. The regression discrepancy method, which mathematically improves the prediction of achievement from IQ over that obtained from the simple discrepancy method, fails to meet the criterion of meaningfulness. Good then concludes we should declare the lowest performing 6% of the students compared to "their age and grade peers" (p. 19) to have a severe discrepancy. It is unclear whether the norm population is to be the classroom, building, district, state or national group. It is also not clear whether the norms are to be based on age or on grade.

However, these problems are minor compared to the legal issue. It is difficult to avoid the conclusion that this "Bottom Six Percent are Discrepant" (BSPAD) proposal, as we shall call it, is against the law.

In 1980, the Bureau of Education of the Handicapped directly addressed the impropriety of defining discrepancy relative to a norm: "Clearly the intent of the regulations is to insure that each child is measured against his own expected performance and not against some arbitrary general standard" (O'Grady, 1980).

Just two years ago OSEP reiterated this view in almost exactly the same language: "It is OSEP's position that each child who is evaluated for a suspected learning disability must be measured against his or her own expected performance, and not against some arbitrary general standard" (Ulissi, 1992).

Finally, BSPAD is a proposal to equate low performance with learning disabilities, to use the LD label almost exclusively for students who are slow learners and borderline retarded, and to refuse to recognize the learning disabilities of the highly gifted student (e.g., who performs at the 7th percentile when she could be at the 97th percentile with appropriate intervention). BSPAD denies the essence of learning disabilities. It mocks the concept. It disparages the prolific and productive research now yielding exciting new evidence on the neurology, biochemistry, and genetics of LD. It flies in the face of the everyday reality of every family and every individual who lives with LD.

A Better Way

What should be done? First, no team should ever attempt to determine LD eligibility unless at least one member of the team, and preferably more than one, has genuine expertise and experience with LD. The law envisions no less, and every child is entitled to at least that.

Second, no team should ever rely on a formula. If quantitative guidelines are to be used, they should be of the type Good calls developmental even though he finds they fail to meet his three criteria. These ask how far behind expected level the student is, measured in years or grade levels. They lack technical sophistication and therefore won't be unduly relied upon. They communicate to teachers and parents. And they are exactly what the law intended. This statement from the federal agency responsible for administering IDEA was quoted earlier and bears repeating:

> In establishing the existence of a severe discrepancy, the team has to make a judgment about the importance of any difference that exists between expected and actual achievement. Making this judgment requires more than just the use of a formula to establish a discrepancy score. For example, a two year difference between achievement and intellectual ability at age seven has a different meaning than a two year difference at age sixteen (O'Grady, 1980).

The question of which measures of achievement and ability should be compared (i.e., the two dot problem) remains. Let us return briefly to Joe and his file full of data. What should happen? Each member of the team must form his or her overall professional opinion as to the child's ability status and achievement status. For example, one member might conclude Joe's reading is very slow and labored, at a high third to low fourth grade level, and below the level of true independent reading. That person might describe Joe's ability as a good notch above average (weighing verbal scores more than performance), and thus conclude that Joe ought to be reading at or slightly above grade level. Since Joe is headed into middle school unable to read content texts effectively, our team member says Joe has a severe discrepancy. On the other hand, someone might argue that his IQ of 91 is very close to a percentile of 26, which is exactly what one of his reading tests shows, so there is no discrepancy. The first team member has avoided the "two-dot pitfall;" the second has not. The first exercised professional judgment; the second could have had a machine pick the highest achievement and lowest ability scores.

Next, the team must thoroughly consider whether a severe discrepancy, if found, is due to LD. It must rely on the expertise of its members to do this. And finally, that same expertise and teaching experience can decide whether special education is needed. The key is an MDT truly knowledgeable about and experienced with LD. It is that simple. And that difficult.

Conclusion

If we have conveyed the message that identifying children with learning disabilities is a complicated process that places great responsibility on MDTs, than we have met our objective. The law clearly recognizes the difficulties involved in making a professional judgment in regards to special education eligibility for a child suspected of having a learning disability. Nevertheless, MDTs are charged with making this professional judgment based on their expertise and experience with LD, as well as objective information about the child. If an MDT exercises its members' combined professional judgment and determines that there is a severe discrepancy between the child's expected performance and achievement the discrepancy is not "primarily the result of" one of the excluded conditions, and the child needs special education, then a legally correct and professionally appropriate decision will be made. If, on the other hand, an MDT equates finding a discrepancy with special education eligibility, defines discrepancy as the difference between two highly-correlated, norm-referenced tests, or fails to consider its professional knowledge of LD in its decision making, then the law and the child will be violated.

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