Professional Psychology: Research and Practice
2004, Vol. 35, No. 4, 364–372

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0735-7028/04/$12.00 DOI: 10.1037/0735-7028.35.4.364

After the Demise of the Discrepancy: Proposed Learning Disabilities Diagnostic Criteria

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Pending legislation and positions taken by the U.S. Department of Education may radically alter current learning disabilities (LD) definitions and diagnostic approaches. Proposals include eliminating a discrepancy model and incorporating a more comprehensive approach to LD assessment but one based on more subjective clinical judgment. Although this effort to change is laudable, it does not address the residual problems that will continue to plague the field: the lack of specificity of the construct of LD and the inconsistent and idiosyncratic approach to diagnosis taken by practitioners and researchers across and within states. This article proposes a new LD classification model that transcends educational and psychiatric systems of diagnosis, calls for a uniform and national diagnostic system, and suggests renaming the disorder (e.g., developmental learning delay).

It is estimated that about 5.34% of youngsters attending public schools experience learning disabilities (LD; U.S. Department of Education, 1996), and the assessment of LD represents a highly visible, controversial, and important facet of school activities. In fact, children receiving the specific LD label account for 51% of special education classifications (U.S. Office of Special Education Programs, National Joint Committee on Learning Disabilities [NJCLD], 2002). Despite the ubiquity of LD and therefore the need for accurate diagnosis of the condition, the field has criticized the approach to LD diagnosis in large measure because it is based on a discrepancy model. Recent roundtable reports (e.g., President's Commission on Excellence in Special Education, 2002; U.S. Office of Special Education, NJCLD, 2002) and articles (e.g., Aaron, 1997; Pasternack, as cited in Harrison, 2002; Sternberg & Grigorenko, 2002) have called for a new diagnostic approach that eliminates the use of the discrepancy model. Unfortunately, recommendations for classification emerging out of these initiatives are comprehensive yet vague. They do recommend the abandonment of the discrepancy model, but they do not address the residual problems with the lack of articulation of a consistent and uniform diagnostic approach that will serve to operationally define the condition for research and clinical purposes. Thus, the psychological, educational, and medical communities may be left with the same problems that they have faced for over 30 years if such proposals are incorporated into pending legislation (e.g., Individuals With Disabilities Education Act [IDEA]) and upcoming clinical–psychiatric taxonomies (e.g., the forthcoming 5th ed. of the *Diagnostic and Statistical Manual of Mental Disorders*).

We propose a new method for diagnosing LD that follows in the tradition of Kraepelin and is consistent across the two major classification systems that address the needs of children and adolescents with LD: the system based on special education law (e.g., IDEA) and the system used by the clinical community (*Diagnostic and Statistical Manual of Mental Disorders* [4th ed.]; *DSM–IV*; American Psychiatric Association, 1994). We propose using diagnostic criteria for mental retardation as a model for LD diagnosis. Our proposed diagnostic approach is guided by American Educational Research Association (AERA), American Psychological Association (APA), and National Council on Measurement in Education (NCME; 1999) test standards and is defensible from empirical, theoretical, and practical perspectives.

The first section of this article presents the two LD definitions (i.e., IDEA and *DSM–IV*) that are typically used to make classification decisions. This section is followed by a presentation of historical perspectives on LD classification, including criticism of the discrepancy approach. We also describe two alternative LD diagnostic approaches that have received attention in the literature (e.g., comprehensive clinical judgment and response to treatment). Following this

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discussion, we propose a more defensible approach to LD diagnosis. Linked to IDEA and *DSM–IV* mental retardation diagnostic nosology, our approach relies on a uniform and national diagnostic standard that transcends educational and psychiatric settings. Finally, the implications of adopting this new definition and diagnostic approach are discussed as it relates to intelligence testing, curriculum-based assessment, research, practice, and policy.

Common LD Definitions and Eligibility Criteria

Practicing psychologists working in a school setting use the IDEA (1997) reauthorized definition of LD, whereas psychologists working within a clinical setting typically use the *DSM–IV* definition of LD. Each definition is presented below.

Educational Definition and Diagnostic Criteria

According to IDEA (1997), the term *specific learning disability*

> represents 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 do mathematical calculations. This term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. This term does not include children who have learning problems that are primarily the result of visual, hearing, or motor disabilities; mental retardation; or environmental, cultural or economic disadvantage. (Section 602[26], p. 13)

IDEA (1997) essentially retained the preexisting U.S. Office of Education definition and criteria for determining LD eligibility. State departments of education have similarly incorporated most aspects of the federal definition into their respective regulations.

The following are criteria for determining the existence of a specific LD.

> (a) A team may determine that a child has a specific learning disability if—
>
> (1) The child does not achieve commensurate with his or her age and ability levels in one or more of the areas listed in paragraph (a)(2) of this section, if provided with learning experiences appropriate for the child's age and ability levels; and
>
> (2) The team finds 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.
>
> (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. ("Assistance to States," 1977, p. 65083)

Although IDEA does not require a specific discrepancy approach, whether regression formula or cut score, IDEA does address the need to document within a written report "whether there is a severe discrepancy between achievement and ability that is not correctable without special education and related services" (IDEA, 1997, Section 602(26), p. 13). Most state departments of education incorporate a discrepancy model into their regulations. Some will use a specific discrepancy of 15 to 22 standard score points, whereas others will rely on a regression formula in making LD eligibility decisions.

DSM–IV Definition and Diagnostic Criteria

The definition and diagnostic approach contained with the *DSM–IV* are similar to the IDEA definition as well as those incorporated into many state departments of education regulations. The *DSM–IV* (American Psychiatric Association, 1994) indicates that

> Learning Disorders are diagnosed when the individuals' achievement on individually administered, standardized tests in reading, mathematics, or written expression is substantially below that expected for age, schooling, and level of intelligence. The learning problems significantly interfere with academic achievement or activities of daily living that require reading, mathematical, or writing skills. A variety of statistical approaches can be used to establish that a discrepancy is significant. *Substantially below* is usually defined as a discrepancy of more than 2 standard deviations between achievement and IQ. A smaller discrepancy between achievement and IQ (i.e., between 1 and 2 standard deviations) is sometimes used, especially in cases where an individual's performance on an IQ test may have been compromised by an associated disorder in cognitive processing, a comorbid mental disorder or general medical condition, or the individual's ethnic or cultural background. If a sensory deficit is present, the learning difficulties must be in excess of those usually associated with the deficit. Learning Disorders may persist into adulthood. (pp. 46–47)

As discussed, the determination of a discrepancy between ability (i.e., IQ) and achievement (i.e., norm-referenced achievement tests) is the cornerstone of LD eligibility decisions. Nonetheless, the discrepancy model was not always a central feature of the LD definition.

LD and the Discrepancy Approach: A Historical Perspective

For just over a century, researchers have investigated the extraordinary difficulty some children experience when learning how to read, write, and perform mathematical calculations (Flanagan, Ortiz, Alfonso, & Mascolo, 2002; Hinshelwood, 1917; Kirk, 1981; Orton, 1925). Today, these children would likely receive the label LD. However, the initial labels ascribed to children were medically oriented (e.g., congenital word blindness, brain injured, dyslexic) and consistent with the clinical venues in which they were being served (Hallahan, Kauffman, & Lloyd, 1999). In an effort to move from a medical conceptualization, Kirk introduced the term *learning disabilities* in 1962 (Kirk, 1981; Mather & Roberts, 1994). Many of the components of Kirk's definition influenced next-generation LD definitions, including two of the most recognized: U.S. Office of Education (IDEA) and *DSM–IV*. Kirk's initial conceptualization, however, did not contain the reference to a discrepancy between intellectual ability and achievement that has

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become the cornerstone of the educational and psychiatric definitions (Kirk & Bateman, 1962). Instead, his definition was more general and made reference to a psychological handicap resulting from cerebral dysfunction as a primary defining characteristic (Mercer, Forgnone, & Wolking, 1976).

Bateman (1965) was the first to provide an LD definition that contained reference to a discrepancy between ability and achievement. Since then, the discrepancy approach has become inextricably linked to the LD definition and has become a generally accepted diagnostic heuristic This definition was thought to be less neurologically based, have greater educational relevance, and be more parsimonious (Mather & Roberts, 1994). Although the intent of incorporating discrepancy was laudable, the effect was to incorporate a diagnostic approach that many consider complex and problematic (Aaron, 1997; Lyon, 1995; Reynolds, 1984; Siegel, 1999; Vellutino, Scanlon, & Lyon, 2000). Through the incorporation of the discrepancy model into the LD definition, the field exchanged one definitional problem for another

Considering more than four decades of use and a significant level of accumulated evidence against a discrepancy notion, the field of education has recommended that the discrepancy model be eliminated from the LD definition in the upcoming IDEA reauthorization (e.g., Commission on Excellence in Special Education, 2002; U.S. Office of Special Education, NJCLD, 2002). It would serve the clinical community to follow suit and abandon the ability–achievement discrepancy from its definition in the next rendition of the *DSM*. Arguments against the discrepancy approach have been based on practical, logical, statistical, theoretical, empirical, legal, and ethical considerations. The following is a brief overview of some of the problems associated with the discrepancy approach as well as the present LD diagnostic approach. For a detailed review of these arguments, the interested reader is referred to various articles (e.g., Aaron, 1997; Gresham, 2001; Reynolds, 1984; Siegel, 1999; Sternberg & Grigorenko, 2002) and recent roundtable discussions (e.g., Commission on Excellence in Special Education) that have emerged as a result of the No Child Left Behind initiative.

Problem 1: The Discrepancy Approach

The discrepancy approach is based on two features: intellectual ability and academic achievement. To determine the existence of a "severe discrepancy," both the educational and clinical communities generally require the administration of standardized ability (IQ) tests and academic achievement tests, followed by a comparison of the standard scores of the tests. If this comparison shows that the student's "achievement" is well below his or her "ability'" in at least one area (such as reading or mathematics), then the student can be diagnosed with a learning disorder.

Unfortunately, the discrepancy model represents an assessment heuristic that appears to lack validity and reliability. Research indicates that it cannot distinguish those who have LD from those who do not (Fletcher et al., 1994; Stanovich, 1991) in actual diagnostic practice. Given the lack of a gold standard for determining the existence of LD, even this research might be seriously questioned. What is clear is that the discrepancy approach has not led to differentiated instruction or successful remediation. It also tends to overlook children who are struggling academically but do not manifest a discrepancy between ability (e.g., intelligence tests) and achievement. Typically, these children score in the 70 to 85 range on intelligence tests and may perform at a similar level on tests of achievement. They may need learning support but may be deemed ineligible in school districts that adhere rigidly to a discrepancy model as the basis for services. There are other criticisms of the discrepancy approach. Some researchers have described a phenomenon called the Matthew effect (Stanovich, 1986), which is a biblical reference to the rich getting richer and the poor getting poorer. Consider the impact of the Matthew effect between good and poor readers. According to the Matthew effect, students who are strong readers are in a better position than poor readers to expand their vocabulary, increase their fund of general information, improve their comprehension, and thus learn more about the world. In turn, this will result in better performance on IQ tests. The effect on children with learning difficulties may be the opposite. Poor reading skills may lead to poorer performance on intelligence tests, and this depressed IQ score reduces the discrepancy between IQ and achievement, making it more difficult to qualify. Finally, the discrepancy model makes it difficult to identify students in the early grades (e.g., kindergarten to Grade 3) because students are not old enough to have demonstrated a discrepancy (Mather & Roberts, 1994). In other words, students' performance on measures of academic achievement does not begin to fall off until the content of the achievement test advances and becomes increasingly abstract and cognitively demanding. Thus, the discrepancy model has been criticized as a "wait and fail" model that does not provide critical early academic intervention (Mather & Roberts, 1994) but instead waits for the child's academic performance to degrade sufficiently to qualify for remediation services.

Problem 2: Lack of a Uniform LD Evaluation Approach

In practice, LD diagnosis suffers from a lack of consistent diagnostic methodology. The *DSM* requires either a one or two standard deviation difference between intelligence and achievement, whereas IDEA allows each state department of education to construct and incorporate its own LD eligibility framework. Although most states adhere to some aspect of a discrepancy model, some of the approaches taken by these states can be subtly different. For instance, some states (e.g., Pennsylvania) may use a cut score of 15 points between ability and achievement, whereas other states may use a regression formula or a different cut score (e.g., 22 points). Thus, across states there is a lack of uniformity and consistency of diagnosis.

Adding to the confusion, within each state, diagnostic approaches may be idiosyncratic, varying from district to district and even psychologist to psychologist (Gottlieb, Alter, Gottlieb, & Wishner, 1994; Reynolds, 1984). Although each state department of education might recommend an approach—say a regression model or a specific cut score—school districts within those states might adhere to a different diagnostic approach or a different discrepancy cut score (Mercer, King-Sears, & Mercer, 1990). Complicating this matter even further, research indicates that practicing psychologists may disregard codified procedures, opting instead to provide services to children who demonstrate loosely defined academic need (MacMillian, Gresham, & Bocian, 1998).

The presently codified diagnostic approach has not withstood empirical validation. Even though it lacks diagnostic validity, it is still used ubiquitously but in an idiosyncratic and perhaps even haphazard fashion. Perhaps this unreliable application is even the reason it has not withstood validation? Nonetheless, this wide-

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spread disregard might denote need for change as well. The inconsistent approach to diagnosis has implications for research. Depending on the type of assessment, children classified as learning disabled according to one researcher might not receive such a classification by another researcher (Fletcher et al, 1998). Research built on a construct that is inconsistently defined and diagnosed renders the results of that research as ungeneralizable at best to spurious at worst. This lack of uniformity contributes to confusion in the field and needs to be substantially revised.

Two Alternative Models

There are two alternative proposals for LD diagnosis that have been given consideration. The first proposal emerged out of a report developed by the 10 organizations participating in the LD roundtable sponsored by the Division of Research to Practice, Office of Special Education Programs, U.S. Department of Education (U.S. Office of Special Education, NJCLD, 2002). This roundtable consensus report called for a diagnostic approach based on comprehensive clinical judgment. It also called for the elimination of the ability (IQ)–achievement discrepancy formula and for the rapid development of alternative approaches to LD identification. This report felt it unnecessary to alter the present IDEA definition of LD but indicated a need to revise identification and eligibility procedures. Accordingly, the roundtable report provided guidance for LD diagnosis. The recommended LD diagnostic approach requires a comprehensive evaluation that uses multiple measures, methods, sources of information, and clinical judgment to identify individual students with LD. Some of the evaluation sources thought to be important include interviews with teachers and family members, standardized tests, teacher logs, student products, student records, observations, and continuous progress monitoring of performance.

The two primary considerations of this diagnostic process are as follows:

> 1. Decisions regarding eligibility for special education services must draw from information collected from a comprehensive individual evaluation using multiple methods and sources of relevant information.
>
> 2. Decisions on eligibility must be made through an interdisciplinary team, using informed clinical judgments, directed by relevant data, and based on student needs and strengths. (U.S. Office of Special Education, NJCLD, 2002)

Beyond this generalized guidance, the roundtable report did not offer more specific details regarding how psychologists should diagnose LD. Instead, the committee suggested that each state, and for that matter each school system, could decide on its specific diagnostic approach.

A second proposed approach for LD diagnosis that has received attention is called response to treatment or intervention (Gresham, 2001). This approach would diagnose a child as having a learning disability if the child failed to respond to efforts at academic remediation. Response to treatment or intervention typically uses curriculum-based assessment (CBA) methodology. CBA is defined broadly as any testing strategy that uses the student's curriculum as a basis for informing decision making regarding the student's learning needs (Howell, Kurns, & Antil, 2002). Deno (1987) described CBA as "direct observation and recording of a student's performance in the local curriculum as the basis for gathering information to make instructional decisions" (p. 41). Three common features connect all CBA models (Fuchs & Deno, 1994). First, assessment is linked to the student's curriculum. Second, the student's progress in the curriculum is evaluated to determine instructional–intervention success. Third, information from the assessment is used to tailor instructional–intervention decisions to more appropriately suit the learning needs of the student (Shapiro & Derr, 1990).

In essence, CBA applies behavioral principles to chart a student's progress in the classroom. For instance, CBA requires the collection of baseline data, the implementation of an academic intervention, and then collection of postintervention data to determine effectiveness of the academic intervention. Were a child to fail to respond to such interventions, then proponents of a response to treatment diagnostic model would argue that the particular child should be classified as having a learning disability.

Unfortunately, response to treatment does not allow for uniformity of diagnosis and communication of the basic phenomenological characteristics of the condition across psychologists, systems, and states. This same problem obscures the proposed diagnostic approach offered by the roundtable report. Moreover, the roundtable report is sufficiently vague, hindering its ability to be debated, tested, and accepted, modified, or rejected.

We seek to fill this conceptual gap by offering a specific set of diagnostic criteria that will move the field of LD diagnosis toward establishing well-accepted diagnostic criteria. The stakes are large for children with LD and their families because the lack of clearly communicable and defensible criteria puts these same vulnerable children at risk for not having their problems recognized and addressed by society.

Proposed Solution: A National Definition and Diagnostic Approach That Is Adopted by Educational and Psychiatric Taxonomies

Fields central to diagnosis and treatment of LD would benefit from the codification of an objective, uniform, and nationally (and perhaps even internationally) based definition and diagnostic approach. This codification should be adopted by both the educational and psychiatric–clinical community and incorporated into their respective diagnostic nosology (e.g., *DSM* and IDEA guidelines) to allow for consistency of diagnosis. Such codification will also enhance communication and eliminate much of the idiosyncratic approaches to diagnosis undertaken both across and within states and between educational and clinical settings, a situation that the two previously discussed proposed alternatives cannot control. An overview of our diagnostic approach is provided below, followed by a more detailed description of each feature.

A *developmental learning delay* (new label here) represents substantially below average performance on one or more of the core academic achievement areas (e.g., basic reading skills, reading comprehension, mathematics reasoning, mathematics calculation, spelling, written expression, and oral language usage [receptive and expressive]). Identification of LD shall be based on a dual deficit in academic achievement as demonstrated by (a) a nationally norm-referenced measure of academic achievement (standard score about 85 or less reflecting performance one standard deviation below the mean) and (b) evidence of educational impairment (based on classroom grades, CBA, and teacher reports or ratings). There are conditions that may contribute to significantly below

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average performance on measures of achievement but that should receive a diagnosis other than LD (e.g., mental retardation, visual impairment). Developmental learning delay shall be diagnosed by age 18.

There are limitations to classification systems that need to be understood so that the classification systems are used responsibly. LD could be classified categorically, as discrete syndromes, dimensionally as continua, or some combination of the two. LD may very well represent a condition that exists on a continuum, although the diagnostic procedure we describe is more categorical in nature. Using a categorical diagnostic approach, professionals might overlook subthreshold or subclinical conditions, such as excluding from diagnosis a child who scores just above the cutoff point. Another limitation relates to the assignment of labels to children. Assignment of labels can have a deleterious impact by creating self-fulfilling prophecies and contributing to low self-images. Sociological literature extended to education indicates that other people's expectations can have a tremendous influence in shaping behavioral and academic performance (Jussim, Madon, & Chatman, 1994). However, even in the absence of formal codified labels, teachers, clinicians, and others label children anyway and often in more pejorative ways (Reynolds, 1979).

One significant criticism of uniform classification is that it overlooks idiographic aspects, instead favoring a nomothetic approach toward diagnosis (Beutler, Williams, Wakefield, & Entwistle, 1995; Seligman, 1996). There is a clear need for balance between idiographic and nomothetic distinctions, and we believe our proposed methodology achieves this balance. Although there may be problems with a uniformly adopted LD classification approach, the field should not abandon attempts at classification at the first few instances of problems. Efforts should focus on improving classification and educating researchers and practitioners on the limitations of a classification system so the approach can be used responsibly (Kamphaus & Frick, 1996). Our proposed model should be thought of as dynamic and evolving, rather than as static and reified.

While remaining cognizant of these limitations, there is a demonstrated need for a uniform LD diagnostic and definitional standard akin to that which is currently codified within IDEA and *DSM–IV* for mental retardation diagnosis. The following is a more detailed description of the salient features of our definition and diagnostic approach provided above.

Include a More Precise Operational Definition of LD

There is an abundance of generalized definitions of LD, but LD will need to be defined more specifically and perhaps even reconceptualized by incorporating a different label or name. The following are suggested aspects of a definition of LD. As indicated below, this new definition is linked directly to actual academic performance.

Delineate What Achievement Areas Will Be Incorporated Into the Definition and Diagnostic Approach

It will be important to specify the achievement areas that are to be included in the definition and diagnostic approach. Although IDEA and *DSM–IV* describe achievement areas (e.g., listening comprehension) on which a child might qualify for services, and these might account for a significant amount of the variance underlying learning difficulties, we propose that only core academic achievement abilities specifically taught in school ought to be included. Therefore, we propose that a child can qualify for services only when he or she is performing poorly in achievement areas that are directly linked to academic work in the schools. An exhaustive discussion of how to define these achievement areas is important and is discussed in Flanagan, Ortiz, Alfonso, and Mascolo (2002). For purposes of this article, we have instead delineated the academic achievement areas that are to be initially included in our taxonomy: (a) basic reading skills, (b) reading comprehension, (c) mathematics reasoning, (d) mathematics calculation, (e) spelling, (f) written expression, and (g) oral language usage (receptive and expressive).

Use a Definition and Diagnostic Approach Akin to IDEA and DSM–IV Approaches Toward Mental Retardation Diagnosis

Our proposed definition and diagnostic approach to LD will be aligned with that codified by IDEA and the *DSM–IV* for use in mental retardation classification. We propose the new diagnostic approach should incorporate a nationally based, ubiquitous classification methodology adopted by both the educational (e.g., IDEA) and clinical (e.g., *DSM*) communities. The following are six essential elements of our proposed diagnostic approach, the first two of which are considered the primary defining features.

1. Norm-referenced academic achievement test score more than one standard deviation below the mean (below standard score of about 85 on most tests in order to incorporate standard error of measurement). A diagnosis of LD will require a demonstrated deficit in an academic achievement area as measured by a valid and reliable norm-referenced test of achievement (e.g., Wechsler Individual Achievement Test, 2nd ed. [WIAT–II]; Woodcock–Johnson Test of Achievement, 3rd ed. [WJ–III]). Initially, an arbitrary cut score of 85 (standard deviation of 15; mean of 100) is proposed as one facet of diagnosis. The adoption of a cut score of 85 will set the cutoff at about the 17th percentile, suggesting that approximately 13%–15% of the school-age population would fulfill this criterion and possibly be eligible for services. The approximate 2%–4% differential from the 17% arbitrary cut score represents the exclusion of students who should receive a diagnosis for other conditions (e.g., blindness, deafness, mental retardation). Within the schools, the use of pre-referral strategies shall continue to be implemented, preferably incorporating the use of response to treatment and CBA methodology. Thus, the ultimate percentage of children who eventually qualify will likely be much smaller than the 13%–15% identified as potentially eligible.

Of utmost importance, the selection of a norm-referenced instrument shall be guided by test standards set forth by AERA, APA, and NCME (1999). Hence, when practitioners or researchers select an instrument for use, these individuals will have greater responsibility to examine the instrument's psychometric properties to ensure that it is a valid and reliable measure of the construct being assessed. Norm-referenced achievement tests are increasingly available in a variety of different forms (Kamphaus, 2001). Thus, there is a danger in selecting a test solely according to how it is marketed or according to superficial characteristics such as title. Current normative samples will be especially important.

2. Evidence of impairment in educational performance. The second requirement for a diagnosis of LD entails evidence of

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impairment in educational performance based on one of the following measures of performance in the child's academic setting: classroom grades, curriculum-based assessment, or teacher ratings of academic performance. Although it is harmful to adopt an idiosyncratic diagnostic approach, it is important to establish a classification system that is sensitive to the idiosyncratic profiles of children with LD. This second aspect of diagnosis allows for a more individualized approach. When a child's performance on classroom grades, teacher ratings, or CBA is deemed (based on actual classroom data or teacher's perception) to be at or below the 17th percentile for children in their local cohort, then this will serve as evidence of impairment in educational performance. The 17th percentile is selected as an arbitrary cutoff to be validated in future research.

3. Exclusionary factors. There are conditions that may contribute to significantly below average performance on measures of achievement but that should receive a diagnosis other than LD (e.g., mental retardation; visual impairment). Furthermore, when a child exhibits conditions such as emotional disturbance or attention-deficit/hyperactivity disorder (ADHD), these conditions should not preclude that child from receiving services for learning difficulties. It is noted that these conditions often coexist with LD and might be used to explain reasons for the child's academic difficulty. However, they should not be used to deny a child services. Likewise, lack of educational opportunity should defer a diagnosis of LD, but remedial services should still be provided.

4. Alternative explanatory factors. There are other factors that, according to IDEA and the *DSM–IV,* could be used to exclude children from LD diagnosis (e.g., cultural or economic). According to our model, these factors shall be viewed as explanatory rather than as exclusionary.

5. Diagnosis by age 18. LD is a developmental phenomenon and first occurs in the developmental period. A child or adolescent is generally diagnosed by age 18 in order to receive a classification of LD. However, a child or adult may be diagnosed beyond this age period if there are data from the child's history to support such diagnosis. The course of LD may be lifelong, or the features may remit after some time.

6. Exit criteria. If at any point a child no longer demonstrates fulfillment of LD diagnostic criteria, then this child will no longer be considered learning disabled and the diagnosis will no longer be applicable. In the case of children, we propose that the assessment to exit from LD, and perhaps special education, may occur at any time. When assessing to exit, it will be important to be mindful of psychometric standards relative to retesting within a relatively short time period.

Omit From New Definition and Diagnosis

The following features are currently present in either the *DSM* or many educational definitions of LD. They shall be omitted from our proposed diagnostic definition.

Reference to an intelligence–achievement discrepancy approach. Intelligence tests for establishing an IQ–achievement discrepancy model for LD diagnosis will be eliminated. This practice has not been fruitful, and the time has arrived to eliminate their use for this purpose (Aaron, 1997; Sternberg & Grigorenko, 2002). Intelligence testing will continue to be necessary to rule out and differentiate LD from mental retardation.

Exclusionary clause. As mentioned, the previous reference to social, cultural, or educational factors that might exclude a diagnosis of LD will not be used to deny children services. It may be appropriate to include a discussion of these factors and how they might affect a child's academic performance; however, they should not be used to deny a child services. There may be one exception. If the term *learning disability* is to be retained, lack of educational opportunity must remain as an exclusion—if one has not been exposed to instruction in a content area such as reading, the inability to read remains a problem and is clearly an academic deficiency requiring remediation, but it is not a diagnosable disorder. Without this exclusion, the term learning *disability* should be supplanted by the term developmental learning *deficiency* or *delay.*

Processing deficits. The presence of cognitive processing deficits will not be a required element for the diagnosis of LD. Instead, the traditional processing deficit areas of attention, auditory processing, and sensorimotor development (among others) will be considered explanatory. This stricture is consistent with all precedents from diagnostic practice in that diagnosis is often silent with regard to etiology. Although knowledge of causation is desirable, it is not necessary for the diagnosis of mental retardation, ADHD, cancer, and schizophrenia, among other conditions. The requirement to identify processing deficits of unknown relationship to impairment or etiology should therefore be cast off as a requirement of diagnosis but not for remedial planning.

Implications for Intelligence Testing and CBA Methodology

The adoption of our proposed approach to LD classification has implications for intelligence testing and CBA methodology. Intelligence testing will no longer be used for LD diagnosis, with the exception of ruling out mental retardation. The removal of ability testing will virtually eliminate the practice of diagnosing a child with "gifted LD." Second, this model will capture and provide services to the so-called slow learners who currently fall through the cracks because they do not manifest a discrepancy under the present diagnostic system. Clearly, the elimination of intelligence testing from LD diagnosis will represent a dramatic shift in the use of intelligence tests. Nonetheless, neither the utility of intelligence tests nor their limitations should be overlooked (see Dombrowski, 2003). Intelligence tests have considerable utility when used for assessing a child's cognitive abilities, but they should not be used for LD diagnosis (Naglieri & Reardon, 1993).

CBA methodology will play an increasingly important role in LD intervention and possibly in diagnosis. CBA is useful for monitoring academic progress and thus is congruent with IDEA requirements to individualize children's intervention plans (Deno, Fuchs, Martson, & Shinn, 2001; Fuchs & Shinn, 1989; Shapiro, 1990; Shinn, 1998). CBA may also play a role in our new LD diagnostic approach, particularly when there is need to consider environmental and contextual variables, such as performance within a local cohort. If local norms are derived and this derivation is consistent with APA, AERA, and NCME test standards, then CBA results can be used to document academic impairment in the same way that poor grade performance might be used. Although there are advocates of CBA or curriculum-based measurement models for diagnosis, these models do not provide for communication and uniformity of the diagnostic methodology within and

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between school districts, clinics, and states. As a result, norm-referenced achievement measures are required, along with the recognition that the utility of CBA models may lie in treatment response and not as a primary defining feature of diagnosis. Norm-referenced scores, rather than alternative assessment results such as CBA, must be used as a primary defining feature of LD diagnosis in order to have the diagnosis perform its most basic function—communication of a common phenomenology of a disorder (Blashfield, 1993). We propose that it is unnecessary to diagnose if it does not at least contribute to communication among treatment providers and within the research community. Communication among professionals is one of the most important functions of classification and diagnosis (Kamphaus & Frick, 2002). Classification does not always lead to cure. Classification does communicate the phenomenological characteristics of the disorder to others interested in treatment and research. It provides a framework within which researchers can attempt to determine etiology and effective treatment for a condition.

Implications for Research, Practice, and Policy

The current practice of LD classification through the use of a discrepancy model is disconnected from current research and may be thought of as anachronistic by serving to perpetuate poor practice in both educational and clinical settings. Our newly proposed LD diagnostic model attempts to rectify some of these difficulties. There are implications of adopting our diagnostic model for practice, policy, and research. The following are just a few.

Ensure That Research Guides Classification Policy and Practice

Current research should guide practice and policy in both educational and psychiatric settings. Thus, the LD classification approach that we propose appears defensible from an empirical, practical, and logical perspective. Our proposed diagnostic taxonomy should not be rigidly and unequivocally reified until there has been an accumulation of evidence substantiating its diagnostic validity. Rather, it should be viewed as a dynamic, evolving process. In this respect, the field of LD ought not hastily adopt and then entrench policy based on just a few studies. The Isle of Wight study (Rutter & Yule, 1975; Rutter 1989) was one of few studies that supported a discrepancy approach to classification, yet its early appearance significantly influenced the establishment of a discrepancy notion as the standard for classification. A preponderance of subsequent studies has criticized the diagnostic validity of the discrepancy approach (e.g., Aaron, 1997; Sternberg & Grigorenko, 2002).

Unfortunately, there seems to be an inherent conflict between the goals of science to innovate and change and those of legislation and regulation of practice to promote uniformity, predictability, and equity. The current LD discrepancy approach was codified, in part, to meet these latter objectives. Hence, the IDEA and *DSM* LD classification approach is antiquated and represents "state-of-the-art" scientific thinking from the 1970s. The approach to LD diagnosis that we propose attempts to meet both needs by creating guidelines that promote standards for diagnostic practice, such as ensuring equal access to services by eliminating bias and limiting the size of the population to a reasonable level that does not qualify all children for services. This approach also allows for the accountability of each state to report the results of its identification process to the federal government. Following these reports, state or federally sponsored agencies might use statistical techniques such as receiver operating curve (ROC) analysis to determine whether or not the current identification practices are empirically defensible. An outcome of this analysis might indicate, for instance, that there is need for a change in an aspect of the diagnostic approach, such as the proposed cut score of 85. Finally, we do recognize that some allowance may be made for differences in educational classification criteria across states as is the case with mental retardation cut scores. Like mental retardation, however, the classification decision should still be grounded in norm-referenced measures with widely publicized evidence of reliability and validity in order to enhance communication and research efforts.

In adopting a new LD diagnostic approach, it will be important to take a lesson from history. The LD definitions and diagnostic procedures that we adopt tomorrow should be based on more than a handful of investigations, and, more than that, they should be viewed not as best practices but as the current standard of practice that will be reviewed and revised at least every 5 to 10 years, as is currently the case with a mental retardation diagnosis where the American Association on Mental Retardation studies the latest science and releases diagnostic standard recommendations on an 8 to 10 year schedule.

Encourage Research on Cognitive Abilities of Students With LD

One of the strengths of cognitive abilities profile research relates to its potential as a primary preventive measure for younger children who are at risk for learning difficulties but who might be overlooked until Grades 2 through 4 (Siegel, 1999; Stanovich & Siegel, 1994) when the cumulative effects of learning problems reach diagnostic significance. Although past profile research using the Wechsler scales has not yielded a distinct LD profile, Siegel (1999) reported the possible existence of LD profiles using more contemporary approaches to assessment. In fact, Siegel (1999) noted in one profile the existence of language-based problems that underlie difficulties in learning to read, write, and spell. A second LD profile that seems to be emerging is characterized as an arithmetic–writing disability. These individuals generally have solid oral language skills but have difficulty with memory and visual processing. Thus, continued LD profile research may uncover cognitive patterns that will be useful for both identification and remediation of difficulties. It is doubtful this will occur at the level of individual subtest scores (see review in Reynolds & Kamphaus, 2003, Chapter 1); instead, it is more likely to occur across composite scores and strong measures of consistently identified constructs.

Moreover, learning difficulties, like other conditions, may lie along a developmental continuum. Perhaps children who experience an early onset of language-based difficulty will have a different learning pathway than those who experience learning difficulties at a later stage, say eighth grade? This will need further investigation, as there may be possible distinctions with early onset learning delay versus later onset learning delay.

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Implications for Practice

Child-oriented practitioners and mental health training programs will now have an even greater responsibility to understand the strengths and limitations of contemporary assessment approaches (e.g., norm referenced and CBA; Dombrowski, 2003). This requirement will mean that trainers should become well versed not only in contemporary theories of cognitive–achievement assessment and interpretation, but also in the philosophy behind alternative approaches (e.g., CBA) toward assessment and intervention. Alternative approaches have attained a high level of advocacy among some in the field of school psychology, and research has increasingly established its effectiveness in enhancing student learning (Shinn, 1998).

Engender a Shift to a New Label: Developmental Learning Delay or Academic Underachievement

In adopting our definition and diagnostic approach, the education and mental health profession might benefit from changing how they conceptualize LD. As one suggestion for engendering a cognitive shift, we propose a new label for the construct: preferably *developmental learning delay* or possibly *developmental academic underachievement.* This change of label might help to engender a cognitive shift away from the defunct conceptualization of LD that is linked to intelligence.

Use Empirically Validated or Promising Academic Interventions

Those who provide services to children should also understand the need to select interventions that have been documented as effective or promising. According to the academic effectiveness literature, the most effective strategies include mnemonic strategies, academic behavior modification, and reading comprehension instruction, among others (Hallahan et al., 1999). One should select the most effective academic intervention, regardless of what assessment approach was used to determine need for intervention. Effective academic intervention is not the sole domain of one assessment approach or another, and no matter what assessment approach is selected, practical (and ethical) considerations suggest the selection of the most effective intervention approach. There are numerous academic curriculum–intervention packages available that boast effectiveness in ameliorating children's academic difficulties. Much of this evidence may be based on anecdote or, even worse, rhetoric. Therefore, those who regularly work within school settings have a responsibility to inform the system of proven intervention practices for a particular condition.

Conclusion

There is an abundance of research that calls for the abandonment of the discrepancy approach to LD classification. Recent roundtable reports and articles have indicated the need for a new diagnostic approach. Unfortunately, recommendations for classification emerging out of these initiatives are comprehensive yet vague. Although most recommend abandoning the discrepancy model, they do not address the residual problems with the lack of articulation of a consistent and uniform diagnostic approach that will better define the children who qualify for services. Thus, the psychological, educational, and medical communities are left with the same problems that they have faced for over 30 years.

We propose a solution to these problems by outlining a diagnostic approach that seems defensible from empirical and logical perspectives. It is consistent across the two major classification systems used in the diagnosis of children and calls for a unified diagnostic approach similar to that used with mental retardation diagnosis.

In totality, our proposal is parsimonious. When a student, during the developmental period (i.e., up to age 18 years), evidences educational impairment in basic academics taught in the classroom (e.g., as assessed by teacher grading, ratings, or CBA performance) that goes unresolved via the school or teacher's attempts at remediation, assess core academic achievement deficits with standardized and validated measures of these same constructs (e.g., WIAT–II; WJ–III tests of achievement). If achievement scores are low (e.g., < 85) and are not explainable by mental retardation or other limited factors noted above, then the classification of a learning difficulty (developmental learning delay) is warranted. Our diagnostic criteria attempt to free LD diagnosis from many of the conceptual misunderstandings and untenable measurement assumptions of the past. We await reactions to this proposal for diagnostic changes and a new term of designation (e.g., developmental learning delay).

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Received May 7, 2003
Revision received December 23, 2003
Accepted March 12, 2004 ■

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