Identification and Assessment of Students with Disabilities

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Abstract

Students with disabilities or suspected disabilities are evaluated by schools to determine whether they are eligible for special education services and, if eligible, to determine what services will be provided. In many states, the results of this evaluation also affect how much funding assistance the school will receive to meet the students’ special needs.

Special education classification is not uniform across states or regions. Students with identical characteristics can be diagnosed as disabled in one state but not in another and may be reclassified when they move across state or school district lines.

Most disabilities with a clear medical basis are recognized by the child’s physician or parents soon after birth or during the preschool years. In contrast, the majority of students with disabilities are initially referred for evaluation by their classroom teacher (or parents) because of severe and chronic achievement or behavioral problems.

There is evidence that the prevalence of some disabilities varies by age, the high-incidence disabilities such as learning disabilities and speech-language disabilities occur primarily at the mild level, the mild disabilities exist on broad continua in which there are no clear demarcations between those who have and those who do not have the disability, and even “mild” disabilities may constitute formidable barriers to academic progress and significantly limit career opportunities.

Problems with the current classification system include stigma to the child, low reliability, poor correlation between categorization and treatment, obsolete assumptions still in use in treatment, and disproportionate representation of minority students. Both African-American and Hispanic students are disproportionately represented in special education but in opposite directions. The disproportionately high number of African Americans in special education reflects the fact that more African-American students than white students are diagnosed with mild mental retardation. Though poverty, cultural bias, and inherent differences have been suggested as reasons for this disproportionate representation, there are no compelling data that fully explain the phenomenon.

In most states, classification of a student as disabled leads to increased funding from the state to the school district. This article suggests a revised funding system that weights four factors (number of deficits, degree of discrepancy, complexity of intervention, and intensity of intervention) in a regression equation that would yield a total amount of dollars available to support the special education of a particular student.
Identification of students for special education placement serves multiple purposes that have direct and indirect benefits as well as risks. In this article, current special education identification, classification, and assessment practices are described and evaluated in light of emerging concerns about their reliability, usefulness, and fairness. Alternatives to conventional practices are discussed.

Identification and Assessment

Purposes

The two main purposes of identification and assessment of students with disabilities are to determine whether they are eligible for special education services and, if they are eligible, to determine what those services will be.

Eligibility for special education services requires two findings: first, the student must meet the criteria for at least one of the thirteen disabilities recognized in the federal Individuals with Disabilities Education Act (IDEA) or the counterparts thereof in state law, and second, special education and/or related services must be required for the student to receive an appropriate education. It is true that some students are eligible for special education and/or related services but do not need them, while other students need the services but are not eligible according to federal or state classification criteria.

If the disability diagnosis and special education need are confirmed, the student then has certain important rights to individualized programming designed to improve educational performance and expand opportunities. These rights are established through several layers of legal requirements based on federal and state statutes, federal regulations, state rules, and state and federal litigation.

Chief among these rights are the requirements that eligible students with disabilities must receive an individualized educational program (IEP) based on needs identified in an individualized, full, and complete evaluation. The needs identified during the evaluation form the basis for the student’s personal and educational goals, the specially designed instruction and related services (for example, psychological consultation or physical therapy), and the methods to evaluate progress toward the student’s goals.

Current Practices

A number of comprehensive classification systems exist and influence, to varying degrees, classification in special education. There is, however, no official special education classification system that is used uniformly across states and regions. For statistical purposes, students are classified by their primary disability, though it is not unusual for a student to have disabilities in more than one category.

Federal and State Disability Categories

Thirteen disabilities are briefly defined in the federal IDEA regulations: autism, deaf-blindness, deafness, hearing impairment, mental retardation, multiple disabilities, orthopedic impairment, other health
impairment, serious emotional disturbance, learning disability, speech or language impairment, traumatic brain injury, and visual impairment. Federal law does not provide classification criteria for any of these disabilities except learning disability.1

These disability categories are based to varying degrees on eight dimensions of behavior or ability: intelligence, achievement, adaptive behavior, social behavior and emotional adjustment, communication/language, sensory status, motor skills, and health status.7 About 90% of the students who are found eligible for special education have disabilities that fall primarily within the first five of those dimensions.

Although all states must provide special education to all students with disabilities, states may or may not adopt the disability categories recognized in the federal regulations. In fact, there are significant differences across the states in the categorical designations, conceptual definitions, and classification criteria.8,9 These differences have their greatest impact on the students who will be described later as mildly disabled. It is entirely possible for students with identical characteristics to be diagnosed as disabled in one state, but not in another, or to have the categorical designation change with a move across state or school district lines.

The category of mental retardation (MR)10 illustrates the diverse classification practices in special education. The IDEA regulations define mental retardation as “significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior.”1 Mental retardation has been recognized as one of the disabilities for which special education was provided throughout this century.6,11 Despite the longevity and nearly universal recognition of this category, enormous differences exist among states in terminology, key dimensions (for example, some states do not include adaptive behavior in the conceptual definition), and classification criteria (for example, the intelligence quotient [IQ] “ceiling” for this category varies from 69 to 85). The variations in criteria have the most effect on the mild level of mental retardation. Similar variations among states exist for other disability categories, especially serious emotional disturbance (SED), learning disability (LD), and speech or language impairment (SP/L).

Medical and Social System Models
Historically, the special education classification system involved a mixture of medical and social system models of deviance.7–9 The least ambiguous disabilities are the clearly medical disabilities (such as visual impairment or orthopedic disabilities), often recognized by the child’s physician soon after birth or during the preschool years. In contrast, the disabilities defined by social system models represent behavior, intelligence, communication abilities, or other characteristics that deviate significantly from the norm, and which are generally diagnosed during the school years (see Table 1). The initial identification of a student with social system disabilities usually occurs because of a teacher-initiated referral of the child as a result of severe and chronic achievement or behavioral problems.7

In the social system model, the question of where to draw the line between normal and “significantly different” characteristics is somewhat subjective, and has properly been considered a matter within the discretion of local or state authorities. (See the article by Parrish and Chambers in this journal issue.) In addition, knowledge about the possible underlying physical causes of some social system disabilities (such as learning disabilities and attention-deficit disorder) is changing rapidly. There is research linking biological factors to mild disabilities such as learning disability, and in particular reading disabilities. (See the article by Lyon in this journal issue.) These links involve possible differences in brain functions among readers with and without disabilities as well as a possible genetic link to severe reading disabilities. The differences are, however, correlational as noted by a writer in a recent Science News and Comment.12 Further
research is needed to determine (1) if these biological correlates are replicated with new samples of students with learning disability; (2) whether the presence or absence of the correlates reliably distinguishes between those with and without learning disability; and (3) whether treatments work differently depending on the presence, amount, and kind of biological correlates. Until these questions are answered, little practical utility exists for the research on the biological correlates of learning disability.

Mental retardation is perhaps the clearest example of the mixture of medical and social system models. The current prevalence of mental retardation among school-age children and youth is 1.1%. Approximately one-half of these persons have moderate to severe disabilities (IQ below 55) characterized by identifiable anomalies (such as Down’s Syndrome) that are the cause of their significantly lower performance in adaptive behavior and intelligence. A second group of persons with mental retardation who typically perform at the mild level (IQ about 55 to 70 or 75) do not exhibit any biological anomalies that can be posited as the cause of their lower performance. Indeed, the etiology of this form of mental retardation has been called cultural-familial or psychosocial as a means of acknowledging that social system factors may be preeminent. Persons with mild mental retardation rather than moderate or severe mental retardation have markedly different levels and patterns of educational needs and adult adjustment. Unfortunately, the current classification system uses the same term to refer to both groups of persons, leading to frequent confusion over what mental retardation means and unnecessary stigmatization of persons with mild mental retardation.

The paucity of clear evidence of a medical basis for many disabilities and the fact that most disabilities are at the mild level (see later discussion) does not diminish the importance of early recognition of problems and the implementation of effective treatments. For example, problems with attaining literacy skills as reflected in very low reading achievement or poor behavioral competencies as reflected in aggressive behaviors often interfere significantly with normal development and seriously impair the individual’s opportunities to become a competent, self-supporting citizen.

Distribution and Severity of Disabilities
In understanding the distribution and severity of disabilities, it is important to remember

Table 1

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Medical Model</th>
<th>Social System Model</th>
</tr>
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<tbody>
<tr>
<td>Definition of problem</td>
<td>Biological anomaly</td>
<td>Discrepancies between expected and observed behavior in a specific context</td>
</tr>
<tr>
<td>Focus of treatment</td>
<td>Focus on cause with purpose of curing or compensating for underlying problem</td>
<td>Eliminate symptoms through direct educational or behavioral interventions</td>
</tr>
<tr>
<td>Initial diagnosis</td>
<td>In preschool years by medical professionals</td>
<td>During school-age years by professionals in education or psychology</td>
</tr>
<tr>
<td>Incidence</td>
<td>Low (about 1% of school-age population)</td>
<td>High (about 9% of school-age population)</td>
</tr>
<tr>
<td>Prognosis</td>
<td>Life-long disabilities</td>
<td>Disabilities may be recognized officially only in school years</td>
</tr>
<tr>
<td>Cultural context</td>
<td>Cross-cultural</td>
<td>Arguably, culturally specific</td>
</tr>
<tr>
<td>Comprehensiveness</td>
<td>Usually affects performance in most roles in most contexts</td>
<td>May affect one or a few roles in a few or multiple contexts</td>
</tr>
</tbody>
</table>
that (1) the prevalence of disabilities varies by age and category, (2) the high-incidence disabilities such as learning disability and speech or language impairment occur primarily at the mild level, and (3) even “mild” disabilities may constitute formidable barriers to attaining adult goals such as a high-status career.

From the summary of disabilities by category for children ages 6–11 and 12–17 provided in Table 2, several trends are apparent. Learning disability is the most frequently occurring disability at both age intervals, a trend that is particularly prominent at the 12–17 age interval. The prevalence of speech and language disabilities declines substantially with increasing age. Also, although there are 13 categories, more than 90% of the children classified as disabled in school settings are accounted for by learning disability, speech or language impairment, mental retardation, and serious emotional disturbance. (See the Child Indicators article by Lewit and Baker in this journal issue for a discussion of changes in the prevalence of learning disability and mental retardation since the inception of Public Law 94–142.)

The severity of disabilities also varies within categories. Severity is influenced by (1) the size of the deficit in behavior or skills; (2) the number of areas in which there are deficits; and (3) the amount and kind of support needed to participate in daily activities such as learning, work, leisure, self-care, and mobility in the community. Persons with disabilities at a severe level typically have large deficits, often in two or more areas, that require extensive and consistent support. Persons with disabilities at the mild level typically have smaller deficits on the key dimensions, deficits in fewer areas, and can function without assistance in most of the normal daily activities.

Knowledge of the exact distribution of severity within disability categories is extremely limited. In broad terms, however, it appears that the majority of students diagnosed with learning disability and speech or language impairment have disabilities at the mild level. The level of disabilities in mental retardation and serious emotional disturbance can vary from mild to severe; however, at least half are at the mild level.17,18

As noted earlier, the distinction between disability and normal ability/behavior is somewhat arbitrary and subject to local preferences. In particular, the mild disabilities

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage of IDEA-Eligible Population</th>
<th>Percentage of Overall Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6–11</td>
<td>12–17</td>
</tr>
<tr>
<td>Learning disability</td>
<td>41%</td>
<td>63%</td>
</tr>
<tr>
<td>Speech or language impairment</td>
<td>37%</td>
<td>5%</td>
</tr>
<tr>
<td>Mental retardation</td>
<td>9%</td>
<td>13%</td>
</tr>
<tr>
<td>Seriously emotionally disturbed</td>
<td>6%</td>
<td>12%</td>
</tr>
<tr>
<td>Other*</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

*“Other” includes autism, deaf-blindness, deafness, hearing impairment, multiple disabilities, orthopedic impairment, other health impairment, traumatic brain injury, and visual impairment.

Table 2

exist on broad continua in which there are no clear demarcations between those who have and those who do not have the disability. Yet, special education eligibility is a dichotomous decision: the student either is or is not eligible for services. In many states, a point or two on discrepancy scores (intended to measure the discrepancy between a student’s ability and achievement) can determine whether or not several thousand additional dollars are spent on the child’s education. Such momentous decisions are not supported by our knowledge of the distribution curve. One of the key findings in the National Institute of Child Health and Human Development (NICHD)–funded studies on learning disabilities (see the article by Lyon in this journal issue) involves the impossibility of clearly differentiating between dyslexia (a common learning disability) and low achievement in reading: “This study allowed us to investigate the commonly held belief that dyslexia is a discrete diagnostic entity. Our data do not support this notion. Rather, they suggest that dyslexia occurs along a continuum that blends imperceptibly with normal reading ability. These results indicate that no distinct cutoff point exists to clearly distinguish children with dyslexia from children with normal reading ability; rather, the dyslexic children simply represent the lower portion of the continuum of reading capabilities.”19

Finally, the generalizations that a disability such as learning disability nearly always is mild and that, as adults, persons with learning disability usually are not officially recognized as disabled does not mean that mild disabilities are trivial or that they magically disappear at age 18 or 21. In fact, students with learning disability are seriously impaired in one of the most important developmental tasks in a technologically complex society: acquiring literacy skills and using those skills to master bodies of knowledge. Poor reading skills in particular constitute formidable barriers to both education and occupational attainment and significantly limit adult career opportunities (see the article by Wagner in this journal issue).

**Of all disability categories, mild learning disability may be the most difficult to diagnose.**

Of all disability categories, mild learning disability may be the most difficult to diagnose. Yet, given the prevalence of this diagnosis, it is crucial that the process be examined. Eligibility for learning disability typically involves teacher or parent referral because of concerns about achievement lagging behind the child’s apparent intelligence or measured IQ. The evaluation typically includes observation in the regular classroom, review of the child’s educational history including past test scores, assessment with standardized tests of achievement and intellectual functioning, determination if there are any discrepancies between achievement and intellectual ability, and elimination of other possible causes of the learning problem (for example, sensory deficits).
In recent years increasing concern has been expressed regarding the dominance of standardized tests at the expense of assessment that is related to interventions in evaluations for learning disability and mild mental retardation. The administration of a comprehensive, individually administered IQ test and one or more standardized, individually administered achievement tests nearly always dominates the learning disability eligibility process. Such testing is virtually mandated by federal guidelines to establish a “severe discrepancy between achievement and intellectual ability.”

Problems
Problems with the current classification system were recognized at least 20 years ago in the large, federally-funded exceptional child classification project. Prevalent problems include stigma to the child, poor reliability for traditional categories, poor relation of categorization to treatment, obsolete assumptions still in use in treatment, and disproportionate representation of minority students.

Stigma
The degree to which lifelong, permanent negative effects of classification (labeling) occur is disputed. Certainly, the more extreme claims made in the late 1960s, such as that labels create deviant behavior rather than vice-versa, are heard less often now. Nevertheless, the common names used for students with mild disabilities have negative connotations. An earlier, now classic, review reported that there is widespread misunderstanding of the meanings of traditional classifications by both professionals and the lay public; and the bearers of labels find the classification uncomfortable and, very often, objectionable. Concerns about the effects of classification on individuals have led to calls for the elimination of the common classification categories.

Although this literature is complex, one conservative conclusion is that categorical classification should be used as sparingly as possible and, when used, should focus on skills rather than on presumed internal attributes of the individual. Current reforms that emphasize classification based on the specific skill deficits (low reading decoding skills) and the services needed (tutoring in phonological awareness) rather than presumed internal attributes may lessen the negative connotations.

Reliability
Current diagnoses using traditional categories are frequently unreliable. Although it is virtually impossible for a student performing at the average level or above to be classified as learning disabled or mildly mentally retarded, differentiating between these categories or between these categories and other classifications such as slow learner, economically disadvantaged, and at risk for poor educational outcomes is often difficult. The reasons for this difficulty include (1) overlapping characteristics among students in these categories, (2) variations in teacher tolerance for student diversity (see the article by Hocutt in this journal issue), (3) differences in screening and placement practices among districts, and (4) variations in the quality of assessment measures used by professionals.

Researchers have noted the diagnosis of dyslexia is not stable for children in the elementary grade levels. The instability from year to year further aggravates the reliability of the diagnosis of dyslexia, an important subcategory of learning disability.

Relation of Classification to Treatment
A disability category is useful to the degree that it is related to the determination of treatment, to treatment outcome, and/or to prevention. The information needed to determine whether or not a student is eligible to be classified as learning disabled, mildly mentally retarded, or seriously emotionally disturbed typically does not relate closely to treatment decisions regarding individual goals, objectives, monitoring of interventions, or evaluating outcomes. Furthermore, considerable evidence now suggests that the educational interventions provided to students in the different disability categories are more alike than different. Effective
Identification and Assessment of Students with Disabilities

Instructional programming utilizes the same principles and often the same procedures (intensive individual instruction, along with close monitoring and feedback) regardless of whether the student is classified as learning disabled, mildly mentally retarded, seriously emotionally disturbed, a slow learner, or educationally disadvantaged.30

Another criterion for usefulness is relation to prognosis or outcomes. The research has indicated that traditional categories do not have a demonstrable relationship to specific outcomes or to prognoses.30–32

**Obsolete Assumption: Homogeneous, Segregated Groups**

A subtle, but important, premise of the current categorical system is that students must be classified into categories so that homogeneous groups can be formed. The efficacy of programming by handicapping condition has been questioned since the 1960s and continues to be a subject of concern with regard to the current categorical system.23,29,31–33 Many education agencies and practitioners are moving away from the assumption that student services can be determined by category; it is time for the categorical system to reflect this change in practice.

**Obsolete Assumption: Aptitude by Treatment Interaction**

Perhaps the most widely accepted traditional assumption is that special intervention techniques, instructional methods, and instructional materials must be carefully matched to precisely diagnosed learning styles or processes. The underlying assumption in this matching process was that of an aptitude by treatment interaction (ATI).34 The ATI evidence, however, has been uniformly negative in special education applications using disability categories, modality preferences, learning styles, cognitive processing, or neuropsychologically “intact” areas.31,33,35–38 The process- or style-matching justification for the current categorical system has little empirical support.

**Disproportionate Minority Placement**

One of the most controversial aspects of the current system is the disproportionate placement of minority students in various categories of disability. Recent data regarding the participation of various groups of students in special education programs are summarized in Table 3. The data are subject to differing interpretations; however, the principal conclusions are (1) both African-American and Hispanic students are disproportionately represented in special education but in opposite directions, and (2) the disproportionately high number of African Americans in special education reflects the fact that more black students than white students are categorized as having mild mental retardation. Regardless of the actual proportions, there is widespread belief that special education has been used as a dumping ground for minority students.39

Commonly suggested causes of disproportionate minority representation in special education include (1) poverty, (2) discrimination or cultural bias in referral and assessment, and (3) unique factors related directly to race or ethnicity. Wagner’s40 analyses implicated poverty as the principal reason African-American students are over-represented in special education. A similar conclusion was published by Reschly41 in an analysis of a large sample of African-American and white students in Delaware who were classified as learning disabled. However, other studies have produced different results, and it cannot be assumed that poverty is the only, or primary, causative agent. Other factors, such as the increased prevalence of low birth weight among African Americans,42 should also be considered.

**Considerable evidence now suggests that the educational interventions provided to students in the different disability categories are more alike than different.**

**Positive Features of the Current Classification System**

The current categorical system has served as (1) a rallying point for advocacy groups seeking support for programs, (2) the structure for passage of legislation, and (3) the basis for allocation of monies to establish educational services for students with disabilities. The monumental progress made over the past 30 years has occurred within the confines of the present categorical system.
### Table 3

**Comparison of Ethnic Representation in Three Categories of Disabilities Based on a 1990 Survey by the Office of Civil Rights**

<table>
<thead>
<tr>
<th>Disability</th>
<th>Of All African-American Students, Percentage Who Have Been Given This Diagnosis</th>
<th>Of All Hispanic Students, Percentage Who Have Been Given This Diagnosis</th>
<th>Of All White Students, Percentage Who Have Been Given This Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild mental retardation</td>
<td>2.1%</td>
<td>0.6%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Learning disability</td>
<td>5.0%</td>
<td>4.7%</td>
<td>5.0%</td>
</tr>
<tr>
<td>Serious emotional disturbance</td>
<td>0.9%</td>
<td>0.3%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Total</td>
<td>8.0%</td>
<td>5.6%</td>
<td>6.5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Of the total (disabled and nondisabled) student population in 1990 OCR survey, percentage from each ethnic group</th>
<th>African American</th>
<th>Hispanic</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Of students with Mild Mental Retardation, percentage from each ethnic group</td>
<td>16%</td>
<td>12%</td>
<td>68%</td>
</tr>
<tr>
<td>Of students with Learning Disabilities, percentage from each ethnic group</td>
<td>35%</td>
<td>8%</td>
<td>56%</td>
</tr>
<tr>
<td>Of students with Serious Emotional Disturbance, percentage from each ethnic group</td>
<td>17%</td>
<td>11%</td>
<td>70%</td>
</tr>
<tr>
<td>Of students with Mild Mental Retardation, percentage from each ethnic group</td>
<td>21%</td>
<td>6%</td>
<td>71%</td>
</tr>
</tbody>
</table>

Efforts to reform the classification system need to provide plausible alternatives that ensure the continued social and political support for programs needed by students with disabilities.

**Alternatives to the Current System**

The overall goal of the special education disability classification system should be to enhance the quality of interventions and improve outcomes for children and youth with disabilities. At the same time, the categories used should be as free as possible of negative connotations, recognizing that no disability classification system will be totally free of negative connotations. This section recommends the development of systems organized around the supports and services needed by children and youth, with further designation, if needed, of the dimensions of behavior in which supports and services are provided.24,43

**Dimensional, Not Typological**

Classification systems should be based on dimensions of behavior (reading, social conduct, and the like) rather than on typologies of persons. Typologies involving dichotomies such as disabled–nondisabled, retarded–not retarded, and learning disabled–not learning disabled are never accurate reflections of the diversity of student aptitudes and achievement. As discussed earlier, students vary on broad continua by fine gradations. However, dichotomous decisions are imposed by the current classification system.

Current eligibility rules require educators to decide that virtually identical students have very different educational needs. These decisions are inaccurate. What is needed is a classification system that reflects the reality of student differences. A classification system based on broad dimensions with fine gradations would allow accurate description of the status of students without imposing false, either–or dichotomies.

In the meantime, there is some merit to the position taken by advocates for the learning disabled, calling for preservation of the full continuum of services. For the student diagnosed with mild learning disability, the school district, in combination with the parents, might be best advised to experiment with intense interventions (for example, temporary or long-term placement in a separate classroom), limited intervention (for example, small-group tutoring two or three times a week), or simply a wait-and-see approach (for example, no changes at school but intensive tutoring support from parents at home) based upon the family’s preferences, the student’s motivation, and the results of intervention. When the degree of disability can be measured but response to treatment cannot be predicted, the best choice may be to offer multiple treatment options.

**Functional, Not Etiological**

The current classification system is based primarily on etiology or presumed internal attributes of individuals. These etiological formulations are not useful in that they are not closely related to treatment.

For the vast majority of students now classified as mildly disabled, functional classification will mean emphasis on skills related to the school academic curriculum and to essential social competencies.
Attempts to use functional classification criteria and programming have been successful and represent enormous promise for improving the current delivery system.\textsuperscript{44–47} This trend is by no means universal, nor even present in a majority of school districts. Important barriers in the forms of funding mechanisms and disability eligibility criteria exist in most states. However, these impediments have been placed under careful scrutiny in recent policy papers\textsuperscript{43} sponsored by the Federal Office of Special Education Programs.

**Multidimensional**
All professionals and parents realize that students with disabilities are complex human beings with a wide range of assets and limitations. Unfortunately, the current classification system suggests that persons with disabilities are different from the norm on one or two salient dimensions such as intelligence or achievement. The focus on one or two dimensions rather than on the broad range of assets and limitations often leads to undesirable restrictions of programming to those dimensions. For example, although it is well known that a significant proportion of students with learning disability have difficulties with social skills, or that the adult adjustment of persons with mild mental retardation will be determined to a greater degree by social rather than by academic competencies, current educational programs often ignore the vital areas of social skills and social competencies.\textsuperscript{48}

**Reliable Technology**
Over the past 20 years, a reliable technology has been developed for direct measurement of student behavior in natural settings.\textsuperscript{46,49–50} When an assessment reveals reliable and precise information about a student’s deviations from the average on relevant dimensions, this information can be used in measuring the effectiveness of interventions (for example, assessment of current status in relation to target objectives, monitoring progress, and evaluating outcomes). Such detailed data on the degree of student variance from the norm could also be used in allocating services to students with the greatest needs, but it should be noted that this approach may encourage the assignment of limited resources primarily to students with the more severe behavioral problems, giving a lower priority to early intervention for students whose problems are not yet extreme.

**Knowledge Based on Effective Intervention**
Clearly, there is a body of knowledge related to the effectiveness of instructional interventions. Classification systems that focus on functional dimensions of behavior will facilitate the application of that knowledge base. In contrast, a classification system that focuses on presumed etiology, or on factors such as underlying neuropsychological processes or learning modalities that have no relationship to treatment outcomes, interferes with the provision of effective treatment.

**Components of a Proposed Funding System**
One of the critical purposes of the current classification system involves funding. Classification of a student as disabled produces markedly greater educational resources. A variety of bases for funding additional services have been discussed for many years. (See the article by Parrish and Chambers in this journal issue.) The funding system suggested below is consistent with the system reforms described in this article.

**Number of Deficits**
The number of deficits exhibited by the student could be one of the bases for generation of additional monies. Students with significant discrepancies over greater numbers of functional dimensions typically require more special education services, as well as services of greater complexity or intensity. However, such a determination should not be written in stone. Students with a smaller number of deficits but with persistent problems likely to influence their future employment and other adult goals may benefit from intensive services.

**Degree of Discrepancy**
A second funding variable could be the degree of discrepancy on each of the
dimensions in which deficits exist. Larger discrepancies typically indicate greater need, requiring greater resources for effective intervention. At the same time, this should not be used as a justification for giving low priority to early intervention for students whose deviations from the norm are not yet great.

**Complexity of Intervention**

The complexity dimension involves at least two components: the skills or competencies of professionals who work with students and the need for special equipment or special environments to carry out effective interventions. For example, an intervention with a student exhibiting what now could be called a behavior disorder might involve the addition of a classroom aide over a period of several weeks during certain periods of the day for the purpose of implementing and monitoring a behavioral intervention. The cost of this intervention may be considerably less than an intervention that requires a fully certified teacher with a master’s degree working with a very small group of students over the entire year.

**Intensity of Intervention**

Intervention intensity includes at least two components: the amount of time required to carry out an intervention over a typical school day and the length of the intervention. Interventions requiring greater intensity should receive more resources than interventions requiring less intensity.

On the other hand, such changes should be accompanied by evaluation of the revised system. The current system has been criticized for spending a substantial amount of special education’s resources on evaluation. Would the revised system proposed here require more or fewer resources for evaluation of students? Would it give adequate priority to prevention and early intervention efforts? Would it create unintended incentives to classify students in certain ways? These questions should be addressed by those who implement revised funding and evaluation systems.

**Conclusions**

Classification reform in special education has been discussed for at least two decades. Intractable problems in the current classification structure shape the delivery system and detract from the implementation of effective interventions for children and youth with learning and behavior problems. Changes are needed to focus attention on effective interventions and evaluation of outcomes.

The current knowledge base and assessment technology supports the development of a classification system based on functional dimensions of behavior and oriented toward effective educational programming. Application of the available knowledge base and assessment technology is needed to further the goal of improving the outcomes of educational interventions for children and youth.


10. The federal IDEA statute and regulations continue to use the term “mental retardation,” although many professionals, clients, and families have long preferred the term “developmental disability,” and state statutes may use terms such as “mental disability” or “significantly limited intellectual capacity.”


20. See note no. 8, Mercer, J.


