

## States' Eligibility Guidelines for Mental Retardation: An Update and Consideration of Part Scores and Unreliability of IQs

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*Abstract: Mental retardation (MR) has traditionally been defined as a disorder in intellectual and adaptive functioning beginning in the developmental period. Guided by a federal definition of MR described in the Individuals with Disabilities Education Act, it is the responsibility of each of the United States to describe eligibility guidelines for special education services. The purpose of this study was to examine eligibility guidelines for MR for the 50 states and the District of Columbia. This study examined the terms used to describe MR, the use of classification levels, the cutoff scores, and the adaptive behavior considerations for each state. In addition, this study examined guidelines for consideration of intelligence test part scores and consideration of the unreliability of IQs through consideration of the standard error of measurement ( $SE_M$ ) or an IQ range. As found in previous studies, results revealed great variation in the specific eligibility guidelines for MR from state to state. The greatest variation appeared to be across the adaptive behavior considerations. Approximately 20% of states (10) recommend consideration of intelligence test part scores, and approximately 39% of states (20) recommend attention to unreliability of IQs through consideration of the  $SE_M$  or an IQ range.*

Individuals with mental retardation (MR) have been described in literature and historical documents for many centuries. Since around 1900, definitions of MR in the United States have included three general aspects: deficits in intellectual functioning, impaired functioning in the daily environment, and onset during the developmental period (Sheerenberger, 1983). Although these three criteria have been included in nearly all recent definitions of MR proposed by professional organizations (e.g., American Association on Mental Retardation [AAMR], 2002; American Psychiatric Association [APA], 2000), the specific criteria within each domain have been more variable across organizations and over time.

Deficits in intellectual functioning are usually defined by poor performance on norm-referenced intelligence tests via IQs. IQs are

often considered reflections of general intelligence, which represents intelligence as a single, global factor (Jensen, 1998). Research has established the predictive validity of IQs on various outcomes, such as academic achievement and adaptation to environmental demands (Brody, 1997; Neisser et al., 1996). The use of IQs to determine deficient intellectual functioning has been included in most definitions of MR across professional groups since the American Association on Mental Retardation (AAMR) first specified the use of intelligence tests in its 1959 definition of MR. Most current definitions adopted by professional organizations set the upper IQ cutoff for MR at two or more standard deviations below the population mean (i.e., IQs of 70 or below; AAMR, 2002; APA, 2000). Moreover, because some degree of measurement error is inherent in obtained IQs, many professional organizations now include an IQ range (e.g., IQs below 70 to 75) or specify that the standard error of measurement ( $SE_M$ ) be considered rather than a strict IQ cutoff criterion.

Whereas IQs have long been used to satisfy the intellectual deficit criterion for MR, there

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has been less agreement across professional organizations as to how adaptive behavior deficits should be evidenced. Adaptive behavior generally refers to the capacity to meet one's daily functional needs based on the individual's age and the culture in which the individual lives. To determine deficient adaptive functioning, some definitions specify the use of global adaptive behavior composite scores, others specify the use of scores reflecting adaptive *domains* (e.g., conceptual, social, and practical; AAMR, 2002), and others specify the use of scores reflecting adaptive behavior *skill areas* (e.g., self-care and community participation; APA, 2000). However, some definitions do not define requirements for deficient adaptive functioning. To best evaluate an individual's adaptive functioning from an ecological perspective, most professional organizations specify that the individual's adaptive functioning be assessed in multiple settings to ascertain the pervasiveness of deficient functioning.

#### *Mental Retardation in the Educational Setting*

The Individuals with Disabilities Act (IDEA; P.L. 108-446, 2004) guarantees a free and appropriate public education to all students. Consistent with the educational focus of impact on academic functioning, IDEA defines MR as "significantly subaverage general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period, that adversely affects a child's educational performance" (National Archives and Records Administration, 2005, p. 35836). Although the federal definition provides a general framework for determining eligibility for special education services under the MR category, states are permitted to refine eligibility guidelines and to operationalize deficient functioning.

#### *Purpose of the Study*

Previous studies examining differences across states' eligibility criteria for MR under IDEA have found significant variations in terms (e.g., *mental retardation* and *mental disability*), use of classification levels (e.g., *mild*, *moderate*, and *severe*), IQ cutoff scores, and adaptive be-

havior consideration and specified criterion (Denning, Chamberlain, & Polloway, 2000; Frakenberger, 1984; Frakenberger & Fronzaglio, 1991; Utley, Lowitzer, & Baumeister, 1987). This study was designed to provide an updated examination of states' guidelines and to investigate two issues that have not received much attention in previous surveys.

Despite the historical reliance on IQs in MR definitions, researchers and advocates often assert that the over-reliance on a single score ignores the complexity of abilities (Daniel, 1997; Horn & Noll, 1997). Research and theories focused on cognitive abilities indicate that important information about an individual's specific cognitive abilities may be overlooked if the focus is on only a single score, an IQ. Based on this reasoning, test authors and publishers have drawn increasingly on theories describing specific cognitive abilities during test development to develop composite-based part scores representing these abilities (Alfonso, Flanagan, & Radwan, 2005). Recent guidelines for the assessment and diagnosis of MR have also placed greater emphasis on part scores. For example, the Social Security Administration (SSA) released new guidelines in 2002 for disability determination for MR that allow certain part scores to be used in place of the IQ in the diagnosis of MR when there is reason to doubt the validity of the IQ (National Research Council [NRC], 2002). With the increasing emphasis on theory-based test development and interpretation, as well as the introduction of the SSA guidelines for MR eligibility that allow use of part scores in certain situations, this study investigates the prevalence of intelligence test part score consideration.

It is well known that some degree of measurement error is inherent in obtained IQs, and many professional organizations specify that a range of scores (e.g., 70 to 75) or the  $SE_M$  be considered in determining deficient intellectual functioning. However, the federal definition of MR under IDEA provides no indication that such measurement error be considered in determining eligibility for MR. Therefore, this study examines the use of score ranges or the  $SE_M$  in determining deficient intellectual functioning across states.

## Method

### Procedure

The first author developed a spreadsheet to record data from states' eligibility guidelines based on a review of similar studies (e.g., Denning et al., 2000; Utley et al., 1987). Items included the following: state, year guidelines were last published, term used, whether levels of MR were specified, the IQ threshold, the practices for identifying adaptive behavior deficits, and whether adaptive behavior requirements should be evident across multiple settings. In addition, two items were added to determine whether states included consideration of intelligence test part scores and consideration of either the  $SE_M$  or a score range around IQs.

Through an iterative process, the first and third authors initially obtained eligibility guidelines from the Department of Education websites for the 50 states and the District of Columbia. (Hereafter, for the sake of simplicity, the District of Columbia is referred to as a state.) Next, all state Departments of Education were contacted via telephone, e-mail, or both to confirm that the guidelines posted on their websites were currently used for establishing eligibility for MR. Guidelines were confirmed for 48 states during the period from September to December 2005, and all guidelines (including California, Maine, and Texas) were confirmed by May 2006. Data from the guidelines were then entered into the spreadsheet by the first author. To ensure accuracy in data recording, the third author first reviewed guidelines from a random selection of 20 states (39%) and independently coded the data. Across all items, there was 97.4% agreement. Although these estimates of inter-rater agreement indicate a high level of consistency in coding, most of the disagreements between coders occurred with the three items devoted to adaptive behavior assessment. For these three items, there was only 95.0% percent agreement. After criteria for these items were further developed, the first author again coded data for these three items for all 51 states, and the third author independently coded another random selection of 20 states. Percentage agreement across these three items was 98.3%. Across both rounds of cod-

ing, disagreements were evaluated and resolved by consensus.

## Results

Table 1 summarizes the eligibility criteria for MR for the 51 states that were obtained by reviewing the official documents including the states' guidelines. Overall, 53% of states use the term *mental retardation* to describe the condition, 12% use the term *mental disability*, and 6% use the term *intellectual disability*. Other terms used by two or fewer states include *cognitive delay*, *cognitive disability*, *cognitive impairment*, *cognitively impaired*, *developmental cognitive disability*, *intellectual impairment*, *learning impairment/delay in learning*, *mental handicap*, *mentally disabled*, *mentally handicapped*, and *significant limited intellectual capacity*. Of the 51 states, 18 differentiated MR according to level of impairment or degree of severity based on IQs. Most states used the terms *mild*, *moderate*, and *severe/profound*, and three used the terms *educable MR*, *trainable MR*, and *severe/profound*.

### Intellectual Deficit Criterion

To satisfy the intellectual deficit criterion, the majority of states (59%) use an IQ cutoff of at least two *SDs* below the normative mean (or standard scores of 70 or below). Approximately 6% of states require an IQs to be below two *SDs* (or standard scores below 70), and one state uses an IQ cutoff of at least one and a half *SDs* below the normative mean (or scores approximately 78 and below). However, 22% of states' guidelines contained only the federal definition of MR without specific eligibility criteria and one state (Iowa) uses a noncategorical approach and does not provide eligibility criteria specific to MR. As noted in Table 1, two states' guidelines include exceptions to their IQ cutoff criterion. Nebraska guidelines specify that students may be eligible for special education services for MR based on either (a) an IQ  $\geq 2$  *SDs* below the normative mean with commensurate (not specified) deficits in adaptive functioning or (b) an IQ  $\leq 80$  with significant deficits in one or more adaptive skill or achievement areas (defined as standard scores  $\geq 2$  *SDs* below the normative mean). Wisconsin guidelines require students initially being considered for

**TABLE 1**

**Eligibility Guidelines for Mental Retardation across States**

<i>State</i>	<i>Year</i>	<i>Term</i>	<i>Levels</i>	<i>IQ</i>	<i>Score range</i>	<i>IQ part scores</i>	<i>AB Score</i>	<i>AB criterion</i>	<i>Multiple AB settings</i>
Alabama	2005	Mental Retardation	N	≥ 2 SD	N	N	Either composite or 2 domains/skill areas	≥ 2 SD	Measured in 2 distinct settings (criterion met in 1)
Alaska	2005	Mental Retardation	N	≥ 2 SD	N	N	NS	NS	NS
Arizona	2003	Mental Retardation	Y	≥ 2 SD	N	N	NS	≥ 2 SD	NS
Arkansas	2004	Mental Retardation	N	≤ 70-75	Y	N	Domains/skill area (2)	NS	Measured in 1 setting; optionally measured in multiple settings
California	2005	Mental Retardation	N	FED	N	N	NS	NS	NS
Colorado	2005	Significant Limited Intellectual Capacity	N	> 2 SD	N	N	NS	NS	NS
Connecticut	2000	Intellectual Disability	N	≥ 2 SD	Y	Y	Domains/skill area (majority)	≥ 1.5 SD	Measured in 2 distinct settings
Delaware	2004	Mental Disability	Y	≤ 70	Y	N	Domains/skill area (2)	NS	NS
District of Columbia	1997	Mental Retardation	Y	FED	N	N	NS	NS	NS
Florida	2005	Mentally Handicapped	Y	≥ 2 SD	Y	Y	NS	NS	NS
Georgia	2002	Intellectual Disability	Y	≤ 70 <sup>1</sup>	Y	N	NS	NS	Measured in 2 distinct settings
Hawaii	2000	Mental Retardation	N	≥ 2 SD	N	N	Domains/skill area (2)	NS	NS
Idaho	2005	Cognitive Impairment	N	< 70	Y	N	Domains/skill area (2)	NS	NS
Illinois	2003	Mental Retardation	N	FED	N	N	NS	NS	NS
Indiana	2002	Mental Disability	Y	≥ 2 SD	N	N	NS	NS	NS
Iowa	2005	N/A	-	-	-	-	NA	NA	NA
Kansas	2001	Mental Retardation	N	≥ 2 SD	N	N	Domains/skill area (2)	NS	NS
Kentucky	2000	Mental Disability	Y	≥ 2 SD	N	N	NS	≥ 2 SD	NS
Louisiana	2004	Mental Disability	Y	≥ 2 SD	N	N	Both composite and domains/skill area (2)	NS	NS
Maine	2003	Mental Retardation	N	FED	N	N	NS	NS	NS
Maryland	2005	Mental Retardation	N	FED	N	N	NS	NS	NS

TABLE 1—(Continued)

State	Year	Term	Levels	IQ	Score range	IQ part scores	AB Score	AB criterion	Multiple AB settings
Massachusetts		Intellectual Impairment	N	NS	N	N	NS	NS	Considered in multiple settings
Michigan	2002	Cognitive Impairment	Y	$\geq 2 SD$	N <sup>2</sup>	N	NS	NS	NS
Minnesota	2005	Developmental Cognitive Disability	Y	$\geq 2 SD$	Y	Y	Both composite and domains/skill areas (4)	Composite $\leq 15^{\text{th}}$ %tile; documentation of needs in 4 of 7 domains	Measured in 2 distinct settings
Mississippi	2003	Mental Retardation	Y	$\geq 2 SD$	Y	Y	Both composite and domains/skill areas	<i>Vineland</i> : Composite $\geq 2 SD$ , all domains $\leq 85$ ; <i>ABS:School:2</i> : Part One Factor	Considered in multiple settings
Missouri	2005	Mental Retardation	N	$\geq 2 SD$	N	N	NS	Scores $\geq 2 SD$ : must justify scores above this	NS
Montana	2004	Cognitive Delay	N	$\geq 2 SD$	Y	N	NS		NS
Nebraska	2004	Mental Handicap	Y	$\geq 2 SD$ or $\leq 80$	N	Y	Domains/skill area (1)	$\geq 2 SD$ (if using IQ $\leq 80$ criterion)	Optionally measured in at least 2 distinct settings
Nevada	2000	Mental Retardation	Y	$\geq 2 SD$	N	Y	Domains/skill area (2)	NS	NS
New Hampshire	2002	Mental Retardation	N	FED	N	N	NS	NS	NS
New Jersey	2003	Cognitively Impaired	Y	$\geq 2 SD$	N	N	NS	NS	Considered in multiple settings
New Mexico	2005	Mental Retardation	N	$\leq 70$	Y	N	Either composite or domains/skill area (1)	$\geq 2 SD$	NS
New York	2004	Mental Retardation	N	FED	N	N	NS	NS	NS
North Carolina	2004	mentally Disabled	Y	$< 70$	Y	N	NS	NS	NS
North Dakota	1999	Mental Retardation	Y	$\leq 70$	Y	N	NS	NS	NS
Ohio	2002	Cognitive Disability	N	$\leq 70$	Y	N	Domains/skill area (2)	NS	NS

TABLE 1—(Continued)

State	Year	Term	Levels	IQ	Score range	IQ part scores	AB Score	AB criterion	Multiple AB settings
Oklahoma	2002	Mental Retardation	Y	≥ 2 SD	Y	Y	NS	NS	Considered in multiple settings
Oregon	2004	Mental Retardation	N	≥ 2 SD	N	N	NS	NS	NS
Pennsylvania	2001	Mental Retardation	N	FED	N	N	NS	NS	Optionally considered in multiple settings
Rhode Island	2000	Mental Retardation	N	FED	N	N	NS	NS	NS
South Carolina	2002	Mental Disability	Y	≥ 2 SD on both V/NV	Y	Y	Composite	≥ 2 SD	Measured in 1 setting
South Dakota	2004	Mental Retardation	N	≥ 2 SD	Y	N	NS	NS	NS
Tennessee	2003	Mental Retardation	N	≥ 2 SD	Y	N	Composite	≥ 2 SD	Measured in multiple settings
Texas	2002	Mental Retardation	N	≥ 2 SD	N	N	NS	NS	NS
Utah	2003	Intellectual Disability	N	≥ 2 SD	N <sup>2</sup>	Y	NS	NS	Measured in multiple settings
Vermont	2003	Learning Impairment/ Delay in Learning	N	≥ 1.5 SD	N	N	NS	NS	NS
Virginia	2002	Mental Retardation	N	FED	N	N	NS	NS	NS
Washington	2002	Mental Retardation	N	FED	N	N	NS	NS	NS
West Virginia	2005	Mentally Impaired	N	≤ 70	Y	N	Domains/skill area (2)	NS	NS
Wisconsin	2002	Cognitive Disability	N	≥ 2 SD or ≥ 1 SD	Y	N	Domains/skill area (2)	≥ 2 SD	NS
Wyoming	1999	Mental Disability	N	≥ 2 SD	Y	Y	NS	NS	NS

Note: AB = adaptive behavior, FED = federal definition only, NS = not specified.

<sup>1</sup> Under Georgia guidelines, more than one formal measure of intelligence is required.

<sup>2</sup> According to Michigan guidelines, IQs at or below approximately 2 SD satisfy the intellectual deficiency criterion. Similarly, Utah guidelines stated that IQs should “generally” be less than or equal to 2 SD below the mean. However, because the guidelines do not define “approximately” or “generally” the score ranges were coded as N.

eligibility to exhibit an IQ two or more *SDs* below the normative mean, but the guidelines allow continued eligibility for students who, upon reevaluation, exhibit IQs between one and two *SDs* below the normative mean if the student is expected to exhibit intellectual deficits indefinitely. Approximately 39% of state guidelines specify consideration of measurement error using either an IQ range (e.g., 70 to 75) or the  $SE_M$  (and associated ranges) surrounding IQs in determining the intellectual deficit criterion.

Most states specify the use of a comprehensive intelligence test battery, which typically yield both an IQ and part scores, but approximately 20% of states (10 states) mention the use of part scores in the MR definition or require school-based multidisciplinary teams to consider part scores in eligibility determination. Most states with provisions for the use of part scores do not allow the use of a part score in isolation to satisfy the intellectual deficit criterion but require consideration of part scores in eligibility decisions. For example, some guidelines require that profiles of part scores be within the deficient range, some specify a cutoff criterion for part scores, and some require examination of part scores and further investigation of a student's abilities if there are discrepancies between part scores. However, only one state (South Carolina) requires normative deficiencies to be evidenced in part scores rather than an IQ.

#### *Deficient Adaptive Functioning Criterion*

Procedures for determining adaptive behavior deficiencies vary greatly across states. The majority of states (63%) do not specify whether composite scores reflecting global adaptive functioning or scores reflecting adaptive behavior domains or skill areas be used to establish deficient functioning. Among states whose guidelines specify the necessary scores, two states specify the use of adaptive behavior composites reflecting overall adaptive functioning, 11 states specify the use of scores for adaptive behavior domains or skill areas, three states require that both composites and domains or skill areas be used, and two states allow for either composite scores or domains or skill areas to be used. Most states (77%) do not include a specific score criterion for defi-

cient functioning, 16% require scores of least 2 *SDs* below the normative mean, and 2% require scores of at least 1.5 *SDs* below the normative mean. In contrast, 2% of states require deficient adaptive functioning to be based on separate criteria for the adaptive behavior composite and the adaptive behavior domains or skill areas. Although the diagnostic criteria outlined by most professional groups specify that adaptive skill deficits be evidenced across settings, only six states (12%) require adaptive functioning to be measured in multiple settings, and only four additional states specify that adaptive functioning be considered in multiple settings. (We coded the following two instances as indicating that adaptive behaviors were considered in multiple settings: descriptions that indicated only considerations of or informal observations of behaviors in non-school settings and descriptions of ratings completed by a single rater to describe behaviors in school and other settings.) In contrast, two states (4%) specify procedures for measuring adaptive functioning in one setting, and 37 states (73%) do not address the settings in which adaptive functioning be measured.

#### **Discussion**

This study provided an updated summary of states' guidelines and investigated two issues that have not received much attention in previous reviews of state guidelines. In a manner almost identical to Denning et al (2000), we found the term *mental retardation* is used by approximately half the states to describe the condition and that *mental handicap* is used by approximately 12% of states. In contrast, fewer states than reported in Denning et al. now require differentiating levels of MR according to degree of impairment or severity based on IQs. We found that only 18 states in our study require these levels, whereas Denning et al. reported 27 states. Perhaps this decreased prevalence was influenced by criticisms, such as that by Wehmeyer (2003), noting that the focus on labels related to levels of impairment lowers expectations by encouraging educational placements and interventions based on perceived global impairment rather than on individual needs.

States require consideration of IQs with an

upper cutoff ranging from a low of 69 to a high of 80 for initial evaluations and a high of 85 for re-evaluations. Approximately 39% of state guidelines specify consideration of measurement error using either an IQ range or the  $SE_M$  (and associated ranges) surrounding IQs in determining the intellectual deficit criterion. This percentage is only slightly higher than that reported by Utley et al. (1987), which was 36%.

Effects of recent theory-based test development and interpretation and the SSA guidelines (NRC, 2002) focusing on composite-based part scores do not appear to be far reaching as of yet. For example, fewer than one-fifth of states make reference to part scores, and only one state requires normative deficiencies to be evidenced in part scores rather than in IQs. Furthermore, when states guidelines made reference to part scores, they were most often to those scores that are not based on recent theories of intelligence (e.g., Verbal IQ and Performance IQ; Alfonso et al., 2005; Kaufman & Lichtenberger, 2005; Wechsler, 2003).

Across the eligibility guidelines, there was little consistency (a) in the descriptions of which adaptive behavior scores (i.e., composites or domains/skill areas) were required for identification and (b) in the criteria used to judged adaptive behaviors as deficits (e.g.,  $\leq 70$ ). If there was any consistency in these areas, it was revealed in the majority of state guidelines omitting descriptions of which adaptive behavior scores are required and in the majority of state guidelines failing to specify the criterion indicating adaptive behavior deficits. However, in general, a few more states (five more) now appear to list specific practices recommended for adaptive behavior assessment than they did about eight years ago (cf. Denning et al., 2000). It is required that those making judgments about special education eligibility for children suspected of having MR consider foremost educational impairment because of the risk of identifying "6-hour retarded children" whose deficits are not apparent across settings (President's Committee on Mental Retardation, 1969). Thus, it was quite unexpected that well less than one-tenth of the states require adaptive functioning to be measured in multiple settings. Despite this serious limitation across the states, perhaps it

is beneficial to acknowledge that progress in this area appears to have been made across almost two decades. Our review revealed that all states but one (Nebraska) require the presence of adaptive behavior skill deficits for identification of mental retardation, whereas Utley et al. (1987) and Frakenberger and Fronzaglio (1991) revealed that only approximately two-thirds of states require the presence of adaptive behavior skill deficits.

#### *Advantage and Limitations*

The accessibility of information from the World Wide Web allowed us direct access to the eligibility guidelines for MR from most every state. Therefore, unlike previous research, state department administrators were not surveyed by paper-and-pencil methods. With careful contact and follow-up by phone to such individuals to ensure that we had accessed the most recent versions of these guidelines, limitations of our approach to data collection are minimal. As with all such research, we anticipate that there have been changes to the eligibility guidelines since we obtained the information summarized in this manuscript. Similarly, it is possible that our coding of the information found in the state guidelines does not match perfectly with the manner in which the guidelines are interpreted by those within states. For example, it is likely that our interpretation of the wording in the guidelines often led us to conclude that specific criteria were not specified well enough to code as something other than "not specified," when those using the guidelines may have interpreted the wording in the guidelines differently. Thus, despite relatively high levels of inter-rater agreement in our study, the coding may not reflect actual practices in the field.

#### *Conclusion*

Psychologists and other professionals involved in assessment of children with or expected to have MR should be not only (a) well informed about their state's and neighboring states' eligibility criteria but also (b) knowledgeable about best practices in the use and interpretation of intelligence tests and adaptive behavior assessment instruments. Our results reveal that some notable variations exist in the eligi-

bility guidelines for MR from state to state. Variations include the terms used to describe this exceptionality, the criterion used to identify an intellectual deficit, and the scores and criteria used to identify adaptive behavior deficiencies. Despite the finding that few states require that adaptive behavior deficits be apparent in more than one setting, psychologists and other professionals should continue to follow best practices by ensuring that such deficits are considered from an ecological perspective through assessment in multiple settings. Similarly, despite what is known about inconsistencies in measurement due to random influences on test performance, fewer than half of states recommend attention to unreliability of IQs through use of  $SE_M$  and associated score ranges. Although some psychologists and other professionals may place emphasis on part scores that are theoretically based and reliable measures from recently published intelligence tests, less than a quarter of states recommend consideration of them during eligibility. We urge those conducting such assessments and policy makers to consider best practices and advancements in theory and measurement of intelligence and adaptive behaviors during upcoming revisions to their state guidelines for MR.

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