A Review of States' Criteria and Procedures for Identifying Children with Learning Disabilities

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The purpose of this study was to investigate whether (a) states have altered their definitions and/or eligibility criteria for learning disabilities (LD) since the last review; (b) states have specified IQ cutoffs below which a child would not be eligible for LD services; (c) the types of methods states use to quantify an ability/achievement discrepancy vary; and (d) an increase in the number of children identified as LD is related to the method or criterion used to quantify an ability/achievement discrepancy. States' guidelines and/or information obtained from state directors of special education were analyzed for all states and the District of Columbia. Results of the review revealed that 40% of states had revised their guidelines between 1988 and 1990; 76% of the states specified a method for determining an ability/achievement discrepancy and the method recommended most frequently was the standard score comparison method. No significant differences were obtained between type of discrepancy method employed by a state and its yearly increase in LD. However, a significant relationship existed between magnitude of a state's ability/achievement criterion and its yearly increase in LD from 1987–88 to 1988–89. The review also revealed an increase in the number of states that specified an IQ cutoff below which a student would not qualify for LD services.

Since the implementation of P.L. 94-142 (The Education for All Handicapped Children Act), the number of children with learning disabilities (LD) who receive special educational services has increased from 782,095 (1977) to nearly 2 million (1989)—a 152% increase over a 13-year period (U.S. Department of Education, 1990). Prior to the 1983–84 school year, the mean increase in LD was approximately 14% per year. However, after the initial large increase, the number of children identified as having LD has stabilized and, since 1983–84, the average increase has been only 2.5% per year (U.S. Department of Education, 1990).

Increases in the number of children identified as LD have shown a great deal of variability among the states. For example, between 1976–77 and 1988–89, the number of children identified as LD in Mississippi increased by 863%, in Indiana by 611%, and in Alabama by 497% (U.S. Department of Education, 1990). In other states, the increases were less dramatic (e.g., Iowa, 32%; Maryland, 46%; and Utah, 33%)

Explanations have been sought for the 152% increase in the number of children identified as LD since the passage of P.L. 94-142, for the variability among the states, and for the much lower increases since 1983–84. One explanation for the initial increase is that low achieving children may be incorrectly identified as LD (Algozzine & Korinek, 1985; Epps, Ysseldyke, & Algozzine, 1985; Epps, Ysseldyke, & McGue, 1984; Ysseldyke, Algozzine, Shinn, & McGue, 1982). There may also be social acceptance of the LD classification and a lack of alternative programs for children with problems in the regular classroom (Algozzine & Korinek, 1985; Gelzheiser, 1987). Researchers have also proposed that there may be confusion over the definition of LD (Epps et al., 1985).

Other explanations have focused on variability among the states in criteria and procedures for diagnosing LD. Since a precise definition of LD was not provided in P.L. 94-142 nor by the U.S. Department of Education, it was left to the states to establish eligibility criteria and procedures for diagnosing LD. As a result, states have varied in their definitions, with some states even choosing not to specify criteria (Frankenberger & Harper, 1985, 1987; Utley, Lowitzer, & Baumeister, 1987). Because of variability in definitions among the states, some states may show greater increases in the number of children with LD than do other states.

Previous research (Frankenberger & Harper, 1987; McNutt, 1986) has shown that states rarely used to specify an IQ score below which a child would not be eligible for LD services. Failure to specify such a cutoff may have led to the increase in the number of low achieving children identified as LD. In fact, some low achieving children who previously would have been identified as mentally retarded began to be identified as LD. It is possible, therefore, that the low increase in the number of children identified as LD since 1983–84 has occurred because states established IQ score criteria.

Recent research has also shown that there is a trend among the states toward adoption of ability/achievement discrepancy criteria for identifying LD. For example, Frankenberger and Harper (1987) found that, in 1981–82, 33% of the states specified ability/achievement discrepancy criteria, whereas by 1985–86 the percentage had increased to 57%. A trend toward the use of ability/achievement discrepancy criteria may also account for the much lower rate of increase in the number of children identified as LD since 1983–84. Cone and Wilson (1981) analyzed the achievement discrepancy methods used by the states and found that they could be grouped into four categories: (1) deviation from grade level, (2) expectancy formula, (3) standard score comparison, and (4) regression analysis. The authors implied that the type of method used may influence the percentage of children who qualify for LD.

The purpose of the present study was to investigate four of the issues identified above: (a) whether states have altered their definitions and/or eligibility criteria for LD since the last review, in 1986 (Frankenberger & Harper, 1987); (b) whether states have specified IQ cutoffs below which a child would not be eligible for LD services; (c) whether the types of methods states use to quantify an ability/achievement discrepancy vary; and (d) whether an increase in the number of children identified as LD is related to the method or criterion used to quantify an ability/achievement discrepancy.

METHOD

Participants

Fifty-one directors of special education from the 50 states and the District of Columbia provided information regarding their state's identification procedures for the placement of children in LD programs. Forty-four of the directors provided their state's written guidelines and seven provided information via telephone interviews.

Procedure

In December 1988, letters were sent to the directors of special education in each of the 50 State Departments of Education and the District of Columbia. All were asked to provide a copy of the guidelines currently used for identification and placement of children in LD programs. Of the 51 directors of special education contacted, 35 responded by mail. In February 1989, a second letter was sent to the 16 directors that had not responded to the first request. By April 1989, 44 states had provided their guidelines. In June 1989, telephone contacts were made with the remaining seven directors of special education. The directors were asked to provide the following information concerning their procedures for identification of LD: (a) the state's current definition of LD, (b) whether the state had specific IQ cutoffs, and (c) the state's ability/achievement discrepancy method. Twenty-three of the states that responded by mail had guidelines/criteria that were difficult to interpret because they appeared to include more than one method of quantifying an ability/achievement discrepancy. Therefore, during the remainder of 1989 and the first three months of 1990, telephone contacts were made to the directors for follow-up questioning, to clarify information that was difficult to interpret.

Noncategorical states (Colorado, Massachusetts, and South Dakota) were not included in the analysis. The guidelines related to LD and/or the telephone information obtained from the remaining 48 departments of special education were analyzed by the authors to determine whether they included (a) major components of the federal LD definition, (b) IQ limits above the range of mental retardation but below which a child could not be identified as LD, and (c) specific ability/achievement discrepancy criteria. The ability/discrepancy criteria were further analyzed to determine if they corresponded to one of the following methods: (a) deviation from grade level (e.g., achievement scores two grades below current grade level); (b) expectancy formula, for example, severe discrepancy grade level = CA(IQ/300 + .17) − 2.5; (c) standard score comparison (e.g., achievement scores two or more standard deviations lower than IQ scores); and (d) regression analysis (e.g., deviation below the regression line for achievement and IQ of at least 1.5 standard deviations) (Cone & Wilson, 1981).

RESULTS

Changes in Definitions and/or Eligibility Criteria

State departments of education continue to revise their definitions and/or eligibility criteria. In the current survey, 40% of the states' guidelines were rewritten and/or revised between 1988 and 1990. An additional 15% of the states indicated that their guidelines for LD would be revised in the near future. The LD criteria developed by some states were very thorough and comprehensive (e.g., Delaware) and others contained sections relating to LD but lacked specific eligibility criteria. Some states (e.g., Arkansas and Oklahoma) suggested a standard score comparison procedure but did not provide an ability/achievement discrepancy criterion.

Results of the present survey indicate significant changes in individual state definitions since 1981–82. In the 1989–90 survey, 51% of the states cited the federal definition mandated by P.L. 94-142 as their definition of LD. The remaining 49% of the states had definitions that varied from that definition.

Mercer, Hughes, and Mercer (1985) proposed a framework that divided the federal definition into the following components: (a) process/language, (b) academic, (c) neurological, and (d) exclusion. Apparently, variations from the federal definition have occurred in the process and neurological areas more frequently than in other areas. The process component of the federal definition involves the phrase, "a disorder in one or more of the basic psychological processes involved in understanding or using language." Eighty-eight percent of the states included the process/language component in their state definition. States that did not include the process component employed alternate descriptions of a child's learning problems. For example, Kansas stated, "SLD [specific learning disabilities] is manifested as a disorder in an individual's ability to receive, organize, or express information."

The academic component was included in all of the state definitions. For example, Pennsylvania stated that SLD was "a deficiency in the acquisition of basic learning skills, including but not limited to, the ability to reason, think, read, write, spell, or do mathematical calculations." Ninety-six percent of the states also included the exclusion component of the federal definition.

The neurological component of the federal definition implies the possibility of central nervous system dysfunction in some children with LD. It states, "The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia." Only 52% of the states included this component in their definitions. With the exception of the decrease in the percentage of states including the neurological component, the results of this review of state definitions are consistent with those of Mercer, King-Sears, and Mercer (1990).

Specification of IQ Cutoffs

Fourteen (29%) of the states (Alabama, Georgia, Hawaii, Indiana, Iowa, Kentucky, Nebraska, New Mexico, Ohio, Pennsylvania, Texas, Utah, Washington, and Wisconsin) and the District of Columbia required that children diagnosed as LD have IQ scores in the average range. However, eight of the states did not define *average*. Six of the states (Alabama, Iowa, Kentucky, Nebraska, Ohio, and Wisconsin) and the District of Columbia specified that IQ cutoff scores for LD placement be above the range of mental retardation. However, the particular IQ cutoffs varied among the states. For example, Wisconsin specified an IQ

cutoff score above 90 for multiple-score IQ tests, Ohio specified an IQ score above 80, and the District of Columbia required an IQ score above 77 for LD placement.

Types of Ability/Achievement Discrepancy Methods

The ability/achievement discrepancy methods employed by states in 1981–82 and 1985–86 are presented in Table 1. The ability/achievement discrepancy methods were grouped according to Cone and Wilson's (1981) categories.

In the present study, it was necessary to add an additional ability/achievement discrepancy method. This is an extension of the standard score discrepancy method, which takes into account statistical regression between intelligence and achievement tests. It was most frequently referred to as the "regressed standard score method." This method was alluded to by Cone and Wilson (1981), but it was not included as a separate category and did not appear in state guidelines during the previous surveys. Results of the 1989–90 survey are presented in Table 2.

Of the 48 states and Washington, DC, 11 (23%) did not recommend a discrepancy method. Of the remaining states, 20 (54%) recommended the standard score method. Eight (22%) of the states recommended the regressed standard score procedure. A regression formula was recommended by seven (19%) additional states. The remaining states recommended either the expectancy formula ($n = 4$; 11%) or deviation from grade ($n = 2$). New York recommended a 50% discrepancy but did not specify the method to determine it.

States that employed a particular method showed variability in the amount of discrepancy they required to qualify for LD services. For example, states that used a standard score discrepancy method defined a significant discrepancy as a difference between ability and achievement of: (a) 1 SD (6 states), (b) 1.3 SD (2 states), (c) 1.5 SD (7 states), (d) 1.75 SD (1 state), and (e) 2 SD (3 states).

Relationship Between Discrepancy Method and Increases in LD

An ANOVA using percentage increases in states' LD populations from 1976–77 to 1988–89 (U.S. Department of Education, 1990) was completed for the following: (a) states with no ability/achievement discrepancy criteria, (b) states that implemented ability/achievement discrepancy criteria after 1981–82 (after the first survey), and (c) states with ability/achievement criteria from 1981–82 until the present. Results of the analysis are presented in Table 3.

An ANOVA was conducted to determine whether increases in states' LD populations were related to the type of ability/achievement discrepancy method employed. Percentage changes in states' LD populations from 1987–88 to 1988–89 were employed in the analysis (U.S. Department of Education, 1990). The following 1988–89 ability/achievement discrepancy methods were included in the analysis: (a) expectancy formula, (b) standard score comparison, (c) standard score with regression, and (d) regression analysis. The deviation from grade level method was excluded from the analysis because it was employed infrequently. States that suggested more than one method were also excluded from the analysis. A nonsignificant F value was obtained, even though the mean increases in states employing the standard score with regression and regression analysis methods tended to be lower than those of states using the other methods. Results of the analysis are presented in Table 4.

Table 1
Ability/Achievement Discrepancy Procedures Employed by States in 1981–82 and 1985–86[a]

Deviation from grade level	Expectancy formula	Standard score comparison	Regression analysis
1981–82			
Georgia	New York	Colorado	Iowa[b]
Minnesota	Wisconsin	Florida	
South Dakota		Iowa[b]	
Utah		Louisiana	
		Nevada	
		New Mexico	
		Ohio	
		Tennessee	
		Texas	
		Vermont	
1985–86			
Iowa[b]	Alabama	California	Iowa[b]
Nevada[b]	Arkansas	Connecticut	Kansas[b]
Oregon	Idaho[b]	Florida	Minnesota
Utah[b]	Kentucky	Georgia	Montana
	Mississippi	Idaho[b]	Vermont
	Nevada[b]	Iowa[b]	Washington
	New Mexico	Kansas[b]	
	New York	Louisiana	
	Pennsylvania	Missouri	
	Utah[b]	North Carolina	
	Wisconsin	Ohio	
	Wyoming	Texas	

[a]Frankenberger and Harper (1987). [b]States that specified more than one type of procedure.

Relationship Between Discrepancy Criteria and Increases in LD

As discussed above, states demonstrated variability in the particular discrepancy criteria they employed. These varying criteria may have affected the annual percentage increase in a state's LD population. For example, a state that employed a 2-standard-deviation ability/achievement discrepancy criterion may expect a smaller annual increase than a state with a 1-standard-deviation criterion. Therefore, a regression analysis was completed comparing states' discrepancy criteria with annual percentage increases (1987–88 to 1988–89) in their LD populations. Results of this analysis are presented in Table 5. Ability/achievement criteria are presented

Table 2
Ability/Achievement Discrepancy Procedures Employed by States in 1989-90

Deviation from grade level	Expectancy formula	Standard score comparison	Standard score with regression	Regression analysis
HI	WI	AL	AZ	KS[a]
DC[a]	DC[a]	AR	DE	KY[a]
	ID	CA	IA	MN
	NV	CT	MD	MO
		FL	UT	MT
		GA	VT	RI[a]
		KS	WA	WY
		KY[a]	WV	
		LA		
		ME		
		MS		
		NE		
		NM		
		NC		
		ND		
		OH		
		OK		
		RI[a]		
		TN		
		TX		

[a]States that specified more than one type of procedure.

Table 3
Mean Percentage Increase in States' LD Populations From 1976-77 to 1988-89[a] (U.S. Department of Education, 1990)

No criteria		Criteria delineated after 1981-82		Criteria delineated before 1981-82	
AK	46	OR	124	GA	63
AZ	69	AL	497	MN	63
DE	38	AR	356	UT	34
IL	86	KY	193	NY	363
IN	611	MS	863	WI	63
ME	53	PA	305	FL	159
MD	46	WY	67	IA	33
MI	139	CA	223	LA	135
NH	224	ID	88	NV	89
NJ	145	CT	56	NM	134
OK	90	KS	100	OH	130
RI	171	MO	105	TX	244
SC	151	NC	162	VT	155
VA	209	MT	181		
WV	232	WA	246		
		TN	41		
		HI	34		
		NE	132		
		ND	125		
Mean	154		205.16		128.08
SD	138.18		192.75		88.8

[a]U.S. Department of Education (1990). $F(2,44) = 1.00$; $p > .05$.

for states that employed the standard score comparison and the standard score with regression procedures. States that specified different standard score discrepancies for different ages (Alabama, Florida, and New Mexico) were excluded from the analysis. In addition, states that employed expectancy formulae and regression analysis procedures delineated methods for quantifying a severe discrepancy that were too diverse for comparison.

The analysis revealed a significant relationship between the size of the ability/achievement discrepancy and the annual percentage increase in a state's LD population. The regression equation relating the size of the ability/achievement discrepancy with predicted annual percentage increase in LD population is also presented in Table 5.

DISCUSSION

After the implementation of P.L. 94-142, states appeared to be moving in the direction of adopting LD definitions that were consistent with the federal definition (Frankenberger & Harper, 1987; McNutt, 1986; Mercer et al., 1985; Mercer et al., 1990). Mercer et al. (1985) stated that 72% of the states employed definitions that were similar to the federal definition. States that varied from P.L. 94-142 did so in wording but not in the essential components included in the definition (McNutt, 1986; Mercer et al., 1985).

Since 1985, there has been a decrease in the number of states that employ the federal definition. Currently, 49% of the states employ definitions that vary to some extent from the federal definition. The variations contain many of the components of the federal definition but range from including slight changes in wording to including changes in main components of the definition. In the present study, 48% of the states report an omission of the neurological component of the federal definition; however, all states included the academic component in their definitions of LD. According to Siegel (1988), the field of LD needs a more meaningful and logical operational definition. She suggested that the general concept of LD should be abandoned for a "domain-specific concept" that limits learning disabilities to the specific areas of reading, spelling, arithmetic, and writing, because these are school-related skills that represent expected areas of achievement for all school-age children.

The number of states specifying IQ cutoffs has increased over the past 9 years;

Table 4
Mean Percentage Change in States' LD Populations From 1987-88 to 1988-89 for Each Ability/Achievement Discrepancy Method[a]

Expectancy formula		Standard score comparison		Standard score with regression		Regression analysis	
WI	.81	AL	8.68	AZ	2.45	MN	−2.96
ID	3.23	AR	1.44	DE	−3.68	MO	4.98
NV	4.40	CA	5.10	IA	1.98	MT	2.80
		CT	.85	MD	−4.50	WY	−.67
		FL	8.79	UT	2.04		
		GA	−.23	VT	1.76		
		LA	.39	WA	2.35		
		ME	4.77	WV	−2.74		
		MS	1.34				
		NE	1.70				
		NM	6.06				
		NC	5.55				
		ND	1.44				
		OH	−.03				
		OK	2.86				
		TN	13.21				
		TX	3.93				
Mean	2.81		3.87		−.04		1.04
SD	1.49		3.61		2.83		3.06

[a]U.S. Department of Education (1990). $F(3,28) = 2.62$; $p \geq .05$.

Table 5
Mean Percentage Change in States' LD Populations From 1987-88 to 1988-89 for Particular Ability/Achievement Discrepancy Criteria[a]

1.0 *SD*		1.3 *SD*		1.5 *SD*		1.75 *SD*		2.0 *SD*	
IA	1.98	NE	1.70	CA	5.10	WV	−2.74	MN	−2.96
MS	1.34	GA	−.23	CT	.85			ND	1.44
NC	5.55			MD	−4.50			OH	−.03
TN	13.21			LA	.39				
TX	3.93			ME	4.77				
KY	1.01			VT	1.76				
				WA	2.35				
Mean	4.503		.735		1.531		−2.74		−5.17
SD	4.199		.965		2.978				1.829

[a]U.S. Department of Education (1990). $r(17) = -.503$; $p < .05$; $Y' = 9.52 - 5.438\ x$; $S_{est\ y} = 3.401$.

more states currently employ IQ cutoffs below which a child would not qualify for services. In 1981-82, three of the states (19%) that specified LD guidelines employed an IQ cutoff above the range of mental retardation. In 1985-86, only one state (4%) maintained an IQ cutoff (Frankenberger & Harper, 1987). In the present study, six states and the District of Columbia identified an IQ cutoff score above the MR range in their LD eligibility criteria. Perhaps some states have implemented IQ cutoffs as a reaction to suggestions that LD is largely a category for low achieving children (Algozzine & Korinek, 1985; Epps et al., 1984, 1985; Epps et al., 1984; Ysseldyke et al., 1982), or perhaps states are employing IQ cutoffs to limit the population of children who may qualify for LD services.

The percentage of states specifying ability/achievement discrepancy criteria has increased over the past 9 years. Morris (1988) said one of the most common uses of various discrepancy criteria was to control the number of students eligible for services. The notion of a discrepancy between ability and achievement is central to the distinction between LD and underachievement and between LD and MR. Over the past 9 years, the number of states including an ability/achievement discrepancy component in their criteria has increased from 16 in 1981-82 to 28 in 1985-86 to 37 in 1989-90. It is also clear that states are moving toward more sophisticated methods of quantifying an ability/achievement discrepancy. Several states are currently employing the standard score with regression or regression analysis methods.

Frankenberger and Harper (1987) suggested that researchers focus on the relationship between the growth of the LD population within a state and the type of ability/achievement discrepancy criteria, if any, the state employs. In the present study, attempts were made to answer this question. Although states that employed ability/achievement criteria before 1981-82 had mean percentage increases that were smaller than those of the other groups (no criteria, and criteria implemented after 1981-82), the differences were nonsignificant. Perhaps one reason for the lack of significance was the large variability among states in their increases in the LD population from 1976-77 to 1988-89. Changes in the LD population for states ranged from 32% to 863% over this time period.

The increases in states' LD populations from 1987-88 to 1988-89 were employed to compare the effects of different types of ability/achievement discrepancy methods. States employing the standard score with regression and regression analysis methods tended to have smaller mean increases than those using either expectancy formulae or standard score comparison. However, the results of this analysis were nonsignificant.

A study conducted by the General Accounting Office (GAO) of the U.S. Department of Education found no relationship between type of ability/achievement method and increases in states' LD population. The GAO studied the procedures employed by the states of California, New York, Wisconsin, and Georgia. Wisconsin and Georgia have shown a gradual decrease in the number of students identified as LD since 1986-87, while California and New York have reported con-

tinual increases since 1976–77. The reviewers found that the four states employed different methods of determining a discrepancy between ability and achievement but found no relationship between the type of ability/achievement discrepancy method employed by an individual state and changes in its LD population over time.

A significant relationship between states' ability/achievement criteria and percentage increase in their LD populations was obtained. In other words, states that required larger discrepancies between ability and achievement tend to have smaller annual increases in their LD populations. In fact, states may be able to modify their annual increases by making changes in the particular discrepancy criteria they employ. The effect of proposed changes in criteria may be estimated from the regression equation presented in Table 5. In addition, the significant relationship between discrepancy criteria and annual increase in a state's LD population indicates that districts and multidisciplinary teams within districts tend to follow state guidelines when identifying children with LD. The obtained relationship would be unlikely if assessment information had little impact on whether a child qualified for LD services, as Epps et al. (1984) implied.

As was the case in 1987, a great deal of variability is currently evident in states' requirements and procedures for diagnosing LD. However, it appears that a trend is emerging to limit the LD label to those children who demonstrate normal intelligence and significant discrepancies between ability and achievement. In addition, there seems to be a trend to omit the neurological component of the federal definition from state definitions of LD. Future studies should determine the relationship between the use of IQ cutoffs and the change in a state's LD population. More research will also be necessary to determine the relationship between the type of ability/achievement discrepancy method employed by a state and the change in that state's LD population over time. In addition, future studies should focus on the relationship between the magnitude of states' ability/achievement discrepancy criteria and their annual increase in LD. Future research may also focus on the relationship between state guidelines and district- and school-level practices.

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REFERENCES

Algozzine, B., & Korinek, L. (1985). Where is special education for students with high prevalence handicaps going? Exceptional Children, 51, 388–394.

Cone, T.E., & Wilson, L.R. (1981). Quantifying a severe discrepancy: A critical analysis. Learning Disability Quarterly, 4, 163–174.

Epps, S., Ysseldyke, J., & Algozzine, B. (1985). An analysis of the conceptual framework underlying definitions of learning disabilities. Journal of School Psychology, 23, 133–144.

Epps, S., Ysseldyke, J., & McGue, M. (1984). "I know when I see one"—Differentiating LD and non-LD students. Learning Disability Quarterly, 7, 89–101.

Frankenberger, W., & Harper, J. (1985). Variations in multidisciplinary team composition for identifying learning disabled children. The Mental Retardation & Learning Disability Bulletin, 13, 40–48.

Frankenberger, W., & Harper, J. (1987). States' criteria and procedures for identifying learning disabled children: A comparison of 1981–82 and 1985–86 guidelines. Journal of Learning Disabilities, 20, 118–121.

Gelzheiser, L. (1987). Reducing the number of students identified as learning disabled: A question of practice, philosophy, or policy? Exceptional Children, 54, 145–150.

McNutt, G. (1986). The status of learning disabilities in the states: Consensus or controversy? Journal of Learning Disabilities, 19, 12–16.

Mercer, C., Hughes, C., & Mercer, A. (1985). Learning disabilities definitions used by state education departments. Learning Disability Quarterly, 8, 45–55.

Mercer, C., King-Sears, P., & Mercer, A. (1990). Learning disabilities definitions and criteria used by state education departments. Learning Disability Quarterly, 13, 141–152.

Morris, R. (1988). Classification of learning disabilities: Old problems and new approaches. Journal of Consulting and Clinical Psychology, 56, 789–794.

Public Law 94-142. Education for All Handicapped Children Act. Ninety-fourth Congress of the United States, Report No. 94-168, June, 1975.

Siegel, L. (1988). Definitional and theoretical issues and research on learning disabilities. Journal of Learning Disabilities, 21, 264–266.

U.S. Department of Education. (1990). To assure the free appropriate public education of all handicapped children: Twelfth annual report to Congress on the implementation of The Education of the Handicapped Act. Washington, DC: Author.

Utley, C., Lowitzer, A., & Baumeister, A. (1987). A comparison of the AAMD's definitions, eligibility criteria, and classification schemes with state departments of education guidelines. Education and Training in Mental Retardation, 22(1), 35–43.

Ysseldyke, J., Algozzine, B., Shinn, M., & McGue, M. (1982). Similarities and differences between low achievers and students labeled learning disabled. The Journal of Special Education, 16, 73–85.