


[Learn About RTI](#) ▶

[What is RTI?](#)
[Research Support for RTI](#)
[LD Identification](#)
[Diversity and Disproportionality](#)
[Behavior Supports](#)
[RTI in Pre-Kindergarten](#)
[RTI in Secondary Schools](#)
[Get Started](#) ▶

[Include Essential Components](#) ▶

[Connect With Others](#) ▶

[Professional Learning](#) ▶

 [Get Email Updates](#)

Sign up to receive the RTI Action Network e-newsletter.

[Find Us on Facebook!](#)

Identifying Learning Disabilities in the Context of Response to Intervention: A Hybrid Model

by *Jack M. Fletcher, Ph.D., University of Houston*

[PRINT](#) | [EMAIL](#)
[SHARE](#)

The formal incorporation of Response-to-Intervention (RTI) models in the 2004 reauthorization of the Individuals with Disabilities in Education Act (IDEA 2004; USDOE, 2004) signals a major change in approaches that schools may use to identify students as eligible for special education in the learning disability (LD) category. School-based interdisciplinary teams must contend with these changes to identify children with LD, determine their eligibility for special education, and most importantly, develop effective intervention approaches. Reviewing the historical definitions of LD and articulating the scientific basis for the changes in identification and intervention introduced by IDEA 2004 may provide some insight into how the recent changes affect the accuracy and utility of diagnostic decision making in the area of LD.

Changes in IDEA: 1968 to 2004

Early Definitions

The definition of LD in federal statutes is widely acknowledged as vague and difficult to operationalize. Consider the opening sentence of the current statutory definition, which first appeared in 1968: "The term specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, speak, read, write, spell, or to do mathematical calculations..." (U.S. Office of Education, 1968).

In 1977, a single inclusionary criterion was added for each of the areas in which LD could occur, "... a severe discrepancy between achievement and intellectual ability in one or more of the areas: (1) oral expression; (2) listening comprehension; (3) written expression; (4) basic reading skill; (5) reading comprehension; (6) mathematics calculation; or (7) mathematic reasoning" (United States Office of Education, 1977, p. G1082). In addition, multiple exclusionary criteria that identified other disabilities were included from the statutory definition (e.g., sensory disorders, mental retardation, and conditions such as environmental, cultural, or economic disadvantage that may not be the primary cause of low achievement in identifying LD). Despite immediate concern about the reliability and validity of the IQ-discrepancy criterion (e.g., Shepard, 1980), for the next 30 years this definition shaped the identification approaches and practices implemented in schools. Psychiatric nomenclatures and decisions about eligibility for social services and disability accommodations were also derivatives of these approaches. The construct of LD became aligned with IQ-discrepancy to a point where contrary evidence and major measurement issues were not given serious consideration (Fletcher et al., 1998; Siegel, 1992; Stanovich, 1993).

IDEA 2004

The seven areas in which underachievement may occur were changed in IDEA 2004 to eight domains, essentially by adding reading fluency and

ADDITIONAL ARTICLES

[The Role of RTI in LD Identification](#)
[Position Statement on Determination of Specific Learning Disabilities](#)
[Making Decisions About Adequate Progress in Tier 2](#)

ADDITIONAL RESOURCES

[National Center for Learning Disabilities](#)
[National Research Center on Learning Disabilities](#)
[Response to Intervention - A Primer](#)
[RTI Talk: Response to Intervention and IDEA - LD Identification in the RTI Instruction Model](#)

changing mathematics reasoning to mathematics problem solving. The IDEA 2004 definition allows school districts to choose identification models that represent alternative inclusionary criteria, including a model based on RTI: "The child does not make sufficient progress to meet age or State-approved, grade-level standards in one or more of the [eight areas of achievement]...when using a process based on the child's response to scientific, research-based intervention." School districts may also select one of several discrepancy models, but that identification model must be consistent with State-adopted criteria. Based on the language in the statute, this means that a State must adopt criteria for an RTI model. A State may adopt criteria for a discrepancy model, but is not required to adopt a discrepancy, effectively precluding district selection of this type of model. A list of exclusionary criteria is provided in the statute that separately highlights limited English proficiency and drops the term cultural disadvantage.

Finally, in perhaps the most significant change, IDEA 2004 provides an additional inclusionary criterion that must be assessed regardless of the identification model employed:

To ensure that underachievement in a child suspected of having a specific learning disability is not due to lack of appropriate instruction in reading or math, the group must consider, as part of the evaluation...(1) Data that demonstrate that prior to, or as a part of, the referral process, the child was provided appropriate instruction in regular education settings, delivered by qualified personnel; and (2) Data-based documentation of repeated assessments of achievement at reasonable intervals, reflecting formal assessment of student progress during instruction, which was provided to the child's parents.

RTI is an inclusionary criterion under IDEA 2004

One way to understand the changes in the 1977 and IDEA 2004 regulations is to consider the nature of the inclusionary criteria. Although all versions of the IDEA legislation have required multiple assessments and multiple criteria for identification of any child with a disability, the 1977 regulations clearly led many districts to emphasize identification models based on IQ-achievement discrepancy, focusing on a set of psychometric test scores that were often used as a gate-keeping mechanism for LD eligibility determination. Thus, the 1977 regulations used a single inclusionary criterion (IQ-discrepancy) and required consideration of the exclusionary criteria. Although subsequent reauthorizations of IDEA added as an exclusion the expectation that low achievement was not due to inadequate instruction, the IDEA 2004 statute and the regulations require assessment of this criterion, so that it represents an *inclusion* criterion. In addition, RTI models and some of the discrepancy models that do not use a discrepancy with IQ require that the areas of potential low achievement be assessed, so that low achievement is another inclusionary criterion. Finally, IDEA 2004 requires consideration of factors that might indicate that low achievement is due to factors that do not represent LD (i.e., the exclusions). Making RTI an inclusion criterion represents a significant advancement in diagnostic decision making for LD.

Scientific basis for IDEA 2004

There is a strong scientific basis for the identification (Fletcher et al., 2007) and intervention (Fletcher & Vaughn, in press) components of IDEA 2004. The scientific basis has evolved through several decades of research on classification that evaluates hypothetical definitions of LD. The various models embedded in IDEA 2004 represent not only different approaches to definition and identification, but also different classifications of LD and, most importantly, different conceptualizations that produce the hypothetical definitions. Before considering these models, however, consider the essence of any classification of LD and why LD can be difficult to define.

What is LD?

Classifications and definitions of LD date back to the beginning of the last century and are inherently tied to older notions of organically based behavior disorders, minimal brain injury, and minimal brain dysfunction as well as the notion of dyslexia. In the 1960s, researchers, clinicians, and parents began to recognize that when all children with behavior and achievement problems were lumped together, the group was heterogeneous and amorphous, which ruled out concepts such as minimal brain dysfunction. Instead, there was a branching off of children whose primary problem was behavioral (now called Attention-Deficit/Hyperactivity Disorder [ADHD]) and children whose primary problem was achievement. Although the term dyslexia had been available since the beginning of the century and popularized by the work of Samuel Orton, not all children with achievement problems had reading difficulties. Thus, in the early 1960s, a group of researchers, clinicians, and parents used the term *learning disabilities*. As Kirk (1963) stated:

I have used the term "learning disabilities" to describe a group of children who have disorders in the development of language, speech, reading, and associated communication skills needed for social interaction. In this group, I do not include children who have sensory handicaps such as blindness, because we have methods of managing and training the deaf and blind. I also excluded from this group children who have generalized mental retardation (pp. 2–3).

LD cannot be defined solely by exclusion

The focus of Kirk's (1963) definition, and others like it was on attributes that must be excluded (Hammill, 1993). Early definitions of LD were criticized for this emphasis on identification by exclusion (Ross, 1976; Rutter, 1978). In a critique of these definitions, Ross (1976) stated:

Stripped of clauses which specify what a learning disability is not, this definition is circular, for it states, in essence, that a learning disability is an inability to learn. It is a reflection of the rudimentary state of knowledge in this field that every definition in current use has its focus on what the condition is not, leaving what it is unspecified and thus ambiguous. (p. 11)

In a review of the World Federation of Neurology definition of *dyslexia*, Rutter (1978) indicated that "if all the known causes of reading disability can be ruled out, the unknown (in the form of dyslexia) should be invoked." (p. 9).

The essence of the LD construct is the idea that low achievement is "unexpected," representing people who struggle to learn to read, write, or do math despite the absence of conditions that typically interfere with success. This is why early attempts to identify LD focused on the exclusion of known causes of low achievement. Unfortunately, this approach to the measurement of unexpected underachievement has not been successful because the resultant LD subgroup is still heterogeneous. Since unexpected underachievement is a construct that cannot be directly observed, much like IQ or ADHD, it should not be defined independently of how it is measured. When the approach to measurement is to simply eliminate known causes, the definition is empty and imprecise.

LD must be defined with inclusionary characteristics

Since it is not sufficient to define LD solely by excluding known causes of low achievement, we need inclusionary criteria that specify the presence of LD. An immediately apparent inclusionary criterion is low achievement. Indeed, it must be established that the person with LD has low academic achievement in some area. But not just any form of low achievement captures the unexpected nature of underachievement in LD. Even measuring achievement and assessing the exclusions is not really a satisfactory approach, partly because the exclusions themselves may be difficult to assess. Obviously, children may have other disabilities, such as a sensory disorder or mental retardation that have their own place in a classification of low achievement (or childhood disorders) and can be assessed based on inclusionary characteristics. However, other exclusionary criteria co-occur with LD, which makes it difficult to assess

their causal significance. For example, these are behavioral and emotional difficulties (e.g., ADHD, anxiety, depression) often present in conjunction with LD and may be a consequence of the adjustment difficulties associated with poor school performance. Other definitional exclusions have not held up well in objective research, such as the assumption that economically disadvantaged children or children with minority language proficiency cannot have LD. Poverty and language can lead to different kinds of underachievement, but poverty or language status per se is not contraindicative of LD.

Inclusionary markers of unexpected underachievement

In the past 20 years, several additional inclusionary characteristics have been proposed as markers of unexpected underachievement. These include IQ-achievement discrepancy, as epitomized in the 1977 federal regulatory definition; discrepancies among different domains of cognitive functions (i.e., unexpected underachievement signaled by a pattern of strengths and weaknesses apparent when "psychological processes" are assessed); and instructional response.

Before reviewing these markers, let's assume agreement that the default model in research is a classification based on absolute low achievement. Researchers usually compare students who meet and do not meet certain cut points for absolute low achievement and infrequently invoke other criteria, other than some kind of IQ cut point. This model is reflected in IDEA 2004 as a chronological age discrepancy model (i.e., "a pattern of strengths and weaknesses in performance, achievement, or both, relative to age"). Low-achievement models have a considerable evidence-base that reflects the extent to which these models are used in research and generate predictable differences in a variety of dimensions. For example, in groups of children who read above and below the 20th percentile, assessments of cognitive skills, intervention response, and neurobiological correlates (brains and genes; Grigorenko, 2005; Schlaggar & McCandliss, 2007) can reliably differentiate achievement subgroups. The problem is that this kind of research has not incorporated additional inclusionary criteria that would indicate "unexpectedness," much less represented the type of child identified with a strict application of different IDEA regulations. Nonetheless, low achievement is a necessary, if not sufficient, part of any definition of LD. An identification model based solely on absolute low achievement should not be emulated in districts trying to identify LD because it will not adequately comply with IDEA 2004. For example, how would intervention response be measured? The other markers that follow have been proposed as additional inclusionary criteria.

Aptitude-achievement discrepancy. Although early studies suggested that a significant discrepancy between IQ and achievement demarcated unexpected underachievement (Rutter & Yule, 1975), this hypothesis has not held up. In the most extensive studies involving children with LD, comparisons of groups defined as IQ-discrepant and nondiscrepant poor readers do not show meaningful differences in prognosis, cognitive skills related to the reading process (e.g., phonological awareness), or instructional response once definitional variability is accounted for in the models (Stuebing et al., 2002). Unlike Rutter and Yule (1975), these studies generally exclude children with mental retardation and brain injuries, which accounted for the "poor reader" group in that study. There are also major psychometric problems attributable to the small measurement error of IQ and achievement tests, the fact that math and reading scores are normally distributed in the population, and other factors that make most testing models based on a single assessment unreliable for identifying LD (Francis et al., 2005; Shepard, 1980; Stuebing et al., 2002).

Cognitive skills. Another proposed marker of unexpected underachievement is uneven development of cognitive skills such as phonological awareness, rapid naming, and working memory. To some extent, this position is based on the IDEA statutory definition, which

associates LD with "a disorder of psychological processes." A person might be identified as having LD if they showed low achievement and strengths in some aspects of cognitive processing.

This model is not encouraged by IDEA 2004, and no provisions are made for it in the regulations. In fact, IDEA has never made routine assessment of cognitive processing part of the regulations because of the absence of evidence that these assessments provide unique information for identification and treatment planning—despite the routine use of these forms of testing in assessments of LD. First, such assessments should not be used to identify children as having LD in the absence of evidence of low achievement. Thus, a child who has poor performance on a phonological awareness test, but average reading, is likely a false positive error (Torgesen, 2002). *Underachievement* is unexpected in LD and poor test performance on a measure of cognitive or neuropsychological functioning should not be taken as evidence of LD unless it is linked to the achievement domain. It is also important to remember that poor performance on measures of academic achievement is most assuredly evidence of a cognitive deficit. There are few cognitive skills about which more is known than, for example, word recognition (Schlaggar & McCandliss, 2007).

Altogether, once achievement is assessed, what value do assessments of cognitive processes add to what we know about the person, given that achievement and cognitive processes are correlated? Individuals with basic reading problems (e.g., difficulties with word recognition) reliably display problems on tests of phonological processing. The assessment of phonological processing abilities therefore adds little to treatment planning or identification that is not indicated by assessing word reading skills. Phonological processing does relate to word reading, and because it does predict LD in this domain, it should be assessed in children who have not had formal reading instruction. However, once the child has exposure to instruction, measuring word reading is sufficient. The presence of a phonological processing deficit does not establish that the word reading problem is unique since phonological processing and word reading are related across age, language, and social class. The time and expense involved in identifying LD can be reduced by focusing on the academic domains in which LD is known to occur.

Finally, cognitive assessment is justified by some because of the belief that the presence of a cognitive deficit affirms that the achievement deficit is biological in origin (Hale, Naglieri, Kaufman, & Kavale, 2004). To continue the word reading analogy, even economically disadvantaged children with word reading problems respond positively to explicit reading instruction, show phonological processing problems, and even fail to activate the temporoparietal areas of the left hemisphere in a functional neuroimaging studies (Schlaggar & McCandliss, 2007). There is little evidence that the presence of a cognitive deficit indicates that the achievement deficit has a neurobiological origin.

Instructional response. Most definitions indicate that LD should not be identified in the absence of adequate instruction. A major problem identified repeatedly in recent consensus reports is that children are identified and placed in special education under the LD category when core instructional programs are not adequate for many children (Donovan & Cross, 2002). Instructional response can only be reliably measured by assessing growth in academic skills in relation to instruction, which includes assessments of the quality of the instruction (Stecker, Fuchs, & Fuchs, 2005). Thus, inadequate response to quality instruction can be used to identify individuals for whom instruction is adequate, but who are hard to teach (Fuchs & Fuchs, 1998; Vaughn & Fuchs, 2003). People are identified as LD when they demonstrate low achievement AND intractability (limited positive response) to appropriate instruction. As such, when instructional response is formally assessed, it represents an *inclusionary* criterion that helps

identify LD. The provision in IDEA 2004 requiring that instructional response be assessed in any individual for whom LD is a consideration is essential not only for ensuring that children who lack adequate instruction are not identified as LD, but also for preserving the scientific validity of the construct. *What stronger evidence can there be of unexpected underachievement than inadequate response to quality instruction?*

A Hybrid Model for LD Identification

One component of IDEA 2004 that is often puzzling is a provision that allows States and districts to use other alternative research-based procedures for determining whether a child has a specific learning disability. In fact, the research reviewed here suggests that all states should adopt an alternative model. This was explicitly addressed by a consensus group of researchers convened by the US Department of Education Office of Special Education Programs after the LD Summit held in 2001 (Bradley et al., 2002). This group suggested three primary criteria, the first two of which are clearly inclusionary (Bradley et al., p. 798):

1. Student demonstrates low achievement.
2. There is insufficient response to effective, research-based interventions. A systematic plan for assessing change in performance must be established prior to intervention.
3. Exclusion factors such as mental retardation, sensory deficits, serious emotional disturbance, language minority children (where lack of proficiency in English accounts for measured achievement deficits), and lack of opportunity to learn should be considered.

Thus, identifying children with LD, whether as part of the process stipulated in IDEA (2004), a clinic outside of school, or in research, requires the presence of low achievement and inadequate response to instruction as inclusionary criteria. This is true whether the overarching identification model stems from an RTI process or from some type of psychometric model. Only if an achievement deficit is present and the student demonstrates intractability in response to quality instruction can we be sure that the low achievement is unexpected. IQ-achievement discrepancy and discrepancies across cognitive domains do not provide this assurance.

In addition, low achievement and poor treatment response may be due to other disabilities, such as a sensory problem, mental retardation, or another pervasive disturbance of cognition. These disorders have their own set of identification criteria and require interventions that address a much more pervasive impairment of adaptation that contrasts with the narrow impairment in adaptive skills that should characterize LD. Contextual factors that interfere with achievement, such as limited English proficiency (based on an assessment of achievement in English and the minority language whenever possible), co-occurring behavioral problems, and economic disadvantage should be considered, but it is important to emphasize that the chief consideration should be intractability in instructional response because objective criteria for distinguishing unexpected low achievement in children with behavioral difficulties and economic disadvantage are not presently available.

Comprehensive evaluation

A common mantra of RTI critics is that proponents of RTI models believe that RTI alone is sufficient evidence for identification of LD. IDEA 2004 requires that children suspected of having LD receive a comprehensive evaluation that incorporates all three sets of criteria identified above. This type of evaluation is appropriately mandated by IDEA 2004 regardless of the identification model that is adopted. In an RTI model, IDEA 2004 is invoked at a point when the child has not been comprehensively assessed, and many factors other than LD may explain low achievement. This is widely recognized in actual implementations of RTI and the notion that there are RTI advocates who use RTI as a single criterion can only be described as a myth (Jimerson, Burns, & VanDerHeyden, 2007). The difference

between a model used in RTI and a traditional identification model may be that in RTI models, the evaluation is aligned with IDEA 2004 as a comprehensive data gathering process, not a mandated approach to assessment that represents a battery of the same tests with every child.

Firmly establishing low achievement should be part of most comprehensive evaluations because progress monitoring data assessing instructional response may not be feasible in each of the eight domains (e.g., reading comprehension). At the same time, there is no point in assessing all eight domains of IDEA if the nature of the achievement problem is easily established. Why complete extensive assessments of reading comprehension and written expression in children who have problems with word recognition and spelling? This component of the hybrid model can be operationalized by using norm-referenced assessments of academic achievement, which should be brief and based on hypotheses about the nature of academic impairment (Fletcher et al., 2007). In addition, it is helpful to verify the nature of the academic impairments to avoid an identification based on single approach (Fletcher et al., 2007).

To assess intervention response, the quality of the core instructional program must be documented with assessments of progress. This assessment is easily accomplished in an RTI model because of its reliance on curriculum-based probe assessments of growth in reading, math, and spelling. However, not all domains of achievement can be measured with probe assessments (e.g., reading comprehension), which makes assessment using norm-referenced tests important.

Finally, if the concerns that lead to referral involve other disabilities, the assessor should be prepared to assess the child more comprehensively. These assessments could include IQ and adaptive behavior required for mental retardation, as well as assessments for autism and pervasive developmental disorders, limited English proficiency, and speech and language. Behavior rating scales from parents and teachers should be completed routinely as screening measures for comorbid disorders (e.g., ADHD) and other contextual factors that may explain low achievement. They certainly also need to be considered in formulating a treatment plan. The point is, not every child needs to be assessed for every potential problem; in an RTI model, there will be hypotheses about the basis for the achievement problem that will lead to assessments specific to the child and to an intervention plan that is individualized.

If the student is evaluated outside of an RTI model, evidence that an identified disorder leads to adaptive impairment (i.e., educational need) must also be considered since disability determination always has these two prongs. In an RTI model, adaptive impairment is determined first (i.e., evidence that the child does not achieve at grade level despite quality instruction) and the establishment of eligibility involves determining the basis for this intractability. In other identification models, the assessment of adaptive impairment may be subjective and partly responsible for the confusion that abounds when an interdisciplinary team denies eligibility despite a diagnosed disorder that sometimes, but not always, interferes with school performance. Just having a disorder is not sufficient to identify the disorder as a disability.

Conclusions

Although RTI models have been implemented in many schools and districts over the past 20 years (Jimerson et al., 2007), there are still issues that require further attention. In the identification area, it is likely that instructional response represents a continuous distribution with no natural breaks. As such, using fixed cut points to indicate inadequate response is no better than setting fixed discrepancy scores. It is important to conceptualize identification of LD as requiring multiple criteria and to resist formula-based decision making. Using confidence intervals that express

formal progress monitoring and other test scores as a range incorporating the measurement error of the tests will help with this issue, but decision making must go beyond test scores. Thus, evaluations of the reliability and validity of decisions made by interdisciplinary teams is needed. More research is needed on the characteristics of students who do not respond well to intervention since we have not really had the opportunity to study this subgroup from cognitive, interventional, and neurobiological perspectives.

Implementing RTI models may take several years, so districts that move in this direction should plan for gradual change. Careful appraisals should be made of available resources so that they can be redirected in the coordinated service delivery approach that represents an RTI model (Fletcher & Vaughn, in press). Implementation also requires close collaboration between general education and special education. RTI is not viable solely as a special education initiative or as a method for identification of LD.

RTI models are worth the effort required for implementation. They are designed to enhance academic and behavioral outcomes in all students. Although identification is a by-product of RTI models, IDEA 2004 provides schools and parents with considerable flexibility in determining how to conduct a comprehensive evaluation. An implicit consequence is permission to prioritize decisions about intervention and reduce the expense associated with eligibility determination since these resources can potentially be used for intervention. Regardless of the identification model, multiple criteria as assessed in a comprehensive evaluation are required. The ultimate determination of eligibility for special education and a classification of LD is therefore an expert judgment that precludes the use of statistical formulae that have characterized decision making in IDEA in the past.

RTI models advance identification and intervention by linking these two domains. They also align with the historical emphasis on unexpected underachievement, providing a basis for operationalizing unexpectedness in terms of intractability in response to quality efforts at instruction. Without an assessment of instructional response, the construct of LD is empty and we have no basis for differentiating children whose underachievement is due to LD versus a host of other factors, including inadequate instruction.

References

- Bradley, R., Danielson, L. E., & Hallahan, D. P. (2002). *Identification of learning disabilities: Research to practice*. Mahwah, NJ: Erlbaum.
- Donovan, M. S., & Cross, C. T. (2002). *Minority students in special and gifted education*. National Research Council. Committee on Minority Representation in Special Education. Division of Behavioral and Social Sciences and Education. Washington, DC: National Academies Press.
- Fletcher, J. M., Francis, D. J., Shaywitz, S. E., Lyon, G. R., Foorman, B. R., Stuebing, K. K., et al. (1998). Intelligent testing and the discrepancy model for children with learning disabilities. *Learning Disabilities Research and Practice*, 13, 186–203.
- Fletcher, J. M., Lyon, G. R., Fuchs, L. S., & Barnes, M. A. (2007). *Learning disabilities: From identification to intervention*. New York: Guilford.
- Fletcher, J.M., & Vaughn, S. R. (in press). Response to intervention: Preventing and remediating academic difficulties. *Child Development Perspectives*.
- Francis, D. J., Fletcher, J. M., Stuebing, K. K., Lyon, G. R., Shaywitz, B. A., & Shaywitz, S. E. (2005). Psychometric approaches to the identification of LD: IQ and achievement scores are not sufficient. *Journal of Learning Disabilities*, 38(2), 98–108.
- Fuchs, L. S., & Fuchs, D. (1998). Treatment validity: A unifying concept for reconceptualizing the identification of learning disabilities. *Learning Disabilities Research & Practice*, 13, 204–219.
- Grigorenko, E. L. (2005). A conservative meta-analysis of linkage and linkage-association studies of developmental dyslexia. *Scientific Studies of Reading*, 9, 285–316.
- Hale, J. B., Naglieri, J. A., Kaufman, A. S., & Kavale, K. A. (2004). Specific learning disability classification in the new Individuals with Disabilities in Education Act: The danger of good ideas. *The School Psychologist*, 6–13, 29.
- Hammill, D. D. (1993). A brief look at the learning disabilities movement in the United States. *Journal of Learning Disabilities*, 26(5), 295–310.
- Jimerson, S. R., Burns, M. K., & VanDerHeyden, A. M. (Eds.) (2007). *The handbook of response to intervention: The science and practice of assessment and intervention*. New York, NY: Springer.

Kirk, S. A. (1963). Behavioral diagnosis and remediation of learning disabilities. Proceedings of the annual meeting of the Conference on Exploration into the Problems of the Perceptually Handicapped Child: Vol. 1. Evanston, IL.

Ross, A. D. (1976). *Psychological aspects of learning disabilities and reading disorders*. New York: McGraw-Hill, 1976.

Rutter, M. (1978). Prevalence and types of dyslexia. In A. L. Benton and D. Pearl (Eds.), *Dyslexia: An Appraisal of Current Knowledge* (pp. 3–28). New York: Oxford University Press.

Rutter, M., & Yule W. (1975). The concept of specific reading retardation. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 16(3), 181–197.

Schlaggar, B. L., & McCandliss, B.D. (2007). Development of neural systems for reading. *Annual Review of Neuroscience*, 9, 642–654.

Shepard, L. (1980). An evaluation of the regression discrepancy method for identifying children with learning disabilities. *Journal of Special Education*, 14, 79–91.

Siegel, L. S. (1992). An evaluation of the discrepancy definition of dyslexia. *Journal of Learning Disabilities*, 25(10), 618–629.

Stanovich, K. E. (1991). Discrepancy definitions of reading disability: Has intelligence led us astray? *Reading Research Quarterly*, 26, 7–29.

Stecker, P. M., Fuchs, L. S., & Fuchs, D. (2005). Using curriculum-based measurement to improve student achievement: Review of research. *Psychology in the Schools*, 42(8), 795–819.

Stuebing, K. K., Fletcher, J. M., LeDoux, J. M., Lyon, G. R., Shaywitz, S. E., & Shaywitz, B. A. (2002). Validity of IQ-discrepancy classifications of reading disabilities: A meta-analysis. *American Educational Research Journal*, 39(2), 469–518.

Torgesen, J. K. (2002). Empirical and theoretical support for direct diagnosis of learning disabilities by assessment of intrinsic processing weaknesses. In R. Bradley, L. Danielson, & D. Hallahan (Eds.), *Identification of learning disabilities: Research to practice* (pp. 565–650). Mahwah, NJ: Erlbaum.

U.S. Department of Education (2004). Individuals with Disabilities Education Improvement Act of 2004, Pub. L. No. 108-446 § 1400 *et seq.*

U.S. Office of Education. (1968). *First annual report of the National Advisory Committee on Handicapped Children*. Washington, DC: U.S. Department of Health, Education and Welfare.

U.S. Office of Education. (1977). Assistance to states for education for handicapped children: Procedures for evaluating specific learning disabilities. *Federal Register*, 42, G1082–G1085.

Vaughn, S., & Fuchs, L. S. (2003). Redefining learning disabilities as inadequate response to instruction: The promise and potential problems. *Learning Disabilities Research & Practice*, 18(3), 137–146.

The development of this article was supported in part by a grant from the National Institute for Child Health and Human Development, 1 P50 HD052117, Texas Center for Learning Disabilities.

[BACK TO TOP](#)

 [PRINT](#) |  [EMAIL](#)

 [SHARE](#)

Presented by:  **National Center for Learning Disabilities**



The RTI Action Network is made possible by the generous support of the Cisco Foundation.

Founding Partners: AFT, IRA, NAESP, NASDSE, NASP, NASSP, and NEA

[Privacy Policy](#) | [Copyright](#) | [Feedback](#) | [RSS](#) | [Sitemap](#)

The National Center for Learning Disabilities, Inc., is a not-for-profit, tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code. All contributions are tax-deductible to the extent permitted by law.



Meets all 20 of the Standards for Charity Accountability.