

Responsiveness-to-Intervention Symposium

December 4-5, 2003 • Kansas City, Missouri

The National Research Center on Learning Disabilities, a collaborative project of staff at Vanderbilt University and the University of Kansas, sponsored this two-day symposium focusing on responsiveness-to-intervention (RTI) issues.

The symposium was made possible by the support of the U.S. Department of Education Office of Special Education Programs. Renee Bradley, Project Officer. Opinions expressed herein are those of the authors and do not necessarily represent the position of the U.S. Department of Education.

What if LD Identification Changed to Reflect Research Findings?

Daniel J. Reschly

Vanderbilt University

When citing materials presented during the symposium, please use the following: "Reschly, R. J.(2003, December). *What if LD Identification Changed to Reflect Research Findings?* Paper presented at the National Research Center on Learning Disabilities Responsiveness-to-Intervention Symposium, Kansas City, MO."

What if LD Identification Changed to Reflect Research Findings?

What if the identification of children with learning disabilities (LD) reflected research results over the last 25 years? What are the probable consequences of changes? Will children profit from the changes? Can professionals acquire the new skill sets involved with changes in LD identification and how will these changes affect job roles, satisfaction, and time allocations? Will LD continue as a viable diagnostic construct and will the infrastructure for services to children with significant achievement problems be enhanced or diminished?

Overview

Consequences of LD changes depend heavily, first, on what kinds of changes and, then, the support/incentives for professionals to acquire additional skill sets and, finally, on the results for children compared to current practices. That was easy. The rest of this paper will address (a) the general principles underlying possible changes, (b) the current conditions in LD policies, practices, and prevalence, (c) the alternatives to current practices, and (d) the supports needed for successful change. LD changes are not inevitable. It is not inconceivable that the current fundamentally flawed definitions, classification criteria, and interventions will prevail 25 years from now. In the interests of children, I believe the field needs to move expeditiously toward policies and practices that support effective interventions for children with achievement problems.

Before discussing changes and, in doing so, alienating about half of this audience, let me suggest a common ground for these discussions. First, all studies that I have read or conducted on children and youth with LD confirms virtually without any exceptions that all have significant achievement problems. The extreme LD critics on the politically left and right are wrong. There is an important reality represented by the 2.8 million children with LD in U.S. schools. There is no "fraud" in LD. On that I believe most will agree.

Underlying Principles for Change

I hope we can establish two additional areas of common agreement. Two principles should drive our decisions about changes in LD identification. First, scientific evidence should drive change in LD identification. Admittedly, research evidence always is an approximation to truth, representing conclusions with the most support given the current state of knowledge. Despite these limitations, I believe traditional tenets of western science and logical positivism are the best tools to determine LD identification and practices. Second, and this may be somewhat more controversial, change should be driven by an outcomes criterion (Reschly, 1979; Reschly & Ysseldyke, 2002). Simply stated, the outcomes criterion emphasizes the relationships between what we do in screening, diagnosis, classification, and intervention to identifiable results for children and youth. Practices clearly related to positive results should be expanded and those with weak or non-existent relationships to results should be avoided and abandoned.

The outcomes criterion is atheoretical and pragmatic. Any practice within ethical

Reschly, R. J.(2003, December). *What if LD Identification Changed to Reflect Research Findings?* Paper presented at the National Research Center on Learning Disabilities Responsiveness-to-Intervention Symposium, Kansas City, MO.

boundaries is acceptable if it produces significant benefits to students. Many other pragmatic criteria apply as well such as cost effectiveness. If these criteria are applied to LD, I believe that significant changes in screening, diagnosis, classification and intervention will occur in the next decade. If you agree with these 2 principles to guide decisions about the future, I think you will support changes in LD identification including definition and classification criteria.

Where are we now?

The most vulnerable feature in modern special education for persons with high incidence disabilities is insufficient documentation of positive benefits to children and youth. This is not a new problem, but it is an increasingly crucial challenge in the context of expanding federal and state accountability demands. The failure to document positive special education outcomes had a profound effect on overrepresentation litigation in the 1970-2000 period (Donovan & Cross, 2002; Reschly, Kicklighter, & McKee, 1998, Reschly & Bersoff, 1999) and continues to markedly influence OCR compliance monitoring and special education policy (IDEA, 1997, 1999 see 34 C.F.R. 300-755). Moreover, when positive outcomes are documented in LD, the magnitude is modest (Kavale & Forness, 1999, see pp. 1006-1008). The LD outcomes problem is unacceptable because many effective practices are not implemented routinely or widely (e.g., Gersten, Vaughn, Deshler, & Schiller; 1997). Outcomes will be better if changes in LD identification supported implementation of effective interventions.

Unscientific Policies and Practices in LD

Several unscientific practices that are prominent in current policies and practices are discussed in this section. Proposals for changes follow.

Unscientific Vestiges of Early LD: Processing Disorder

Perhaps the most obvious of the unscientific vestiges of early LD (1960-1980) is the emphasis on the processing component in LD definitions and, occasionally, LD classification criteria. Definitions of diagnostic constructs specify key dimensions and other conditions fundamental to its meaning. Classification criteria specify what characteristics must exist in order for persons to be eligible or ineligible for the diagnosis. A healthy diagnostic construct has consistent definitions and classification criteria. An unhealthy diagnostic construct has major inconsistent features across the definition and classification criteria. LD is an unhealthy diagnostic construct because key elements in definition and classification criteria are inconsistent and scientifically unvalidated (note, unvalidated, not necessarily, invalid).

Current LD policy is driven by a definition (IDEA, 1997, 1999) that focuses primary attention on psychological process disorders as the presumptive cause of inefficient learning in several academic domains. LD classification criteria (IDEA, 1997, 1999) do not mention psychological process disorders, instead placing primary attention on a severe discrepancy between academic achievement in specified areas and intellectual ability, a criterion that itself appears to be problematic. Critical elements of the definition and classification criteria are inconsistent. What should change?

If we apply our criteria for change, scientific evidence and outcomes for children, the broad consensus among researchers is that both must change. Neither psychological processes nor severe achievement-ability discrepancy has empirical support.

The names for the psychological processes have changed over the years as noted by Mann nearly 25 years ago,

Process training has always made the phoenix look like a bedraggled sparrow. You cannot kill it. It simply bides its time in exile after being dislodged by one of history's periodic attacks upon it and then returns, wearing disguises or carrying new *noms de plum*, as it were, but consisting of the same old ideas, doing business much in the same old ways. (Mann, 1979, p. 539),

Psychological processes, whether called modality preferences, psycholinguistic strengths-weaknesses, learning channels, hemisphere strengths, learning styles, or the more recent version, cognitive processes, can be used in LD for 3 purposes. In this analysis, I am referring to highly inferential assertions about internal child attributes based on psychometric profiles from standardized tests.

Processes in LD Identification. Some advocates argue that cognitive processes should be used in LD identification. In a few states today low achievers with cognitive processing weaknesses are diagnosed as LD while those without identifiable cognitive weaknesses are deemed ineligible. Many problems exist with this use and a full discussion would take more space than is available. But three well documented problems should pretty much lead to dismissal of cognitive processes as a consideration in LD identification. First, profile differences across cognitive tests are normal and not at all unusual. A high degree of variability across cognitive measures is typical of normal populations. There are many processing measures. Assessment across several measures nearly always identifies what could be regarded as a processing disorder in the majority of normal achievers. Any school or clinical psychologist can find a processing deficit in virtually every child, regardless of the child's school success. Processing deficits cannot, therefore, be a signifying feature of LD if nearly everyone has one or more of them regardless of achievement levels.

Second, difference scores on cognitive or neuropsychological measures are unreliable due to the phenomenon of unreliability of difference scores. Briefly, if there is error in each score on which the difference is based, there is still more error in the difference between the scores. An instructive example was contributed Danielson and Bauer (1978) who pointed out that the reliability of the difference score between IQ and achievement was 0.5, if the correlation between the tests was 0.7, the reliability of the achievement measure was 0.8 and the reliability of the IQ score 0.9. The reliability of difference scores increases as the reliability of each of the scores on which they are based increases and as the correlation between IQ and achievement increases. I note that the internal consistency form of reliability, (an upward bound estimate of test score reliability) is typically used in estimations rather than stability coefficients that add the element of elapsed time. Stability is a more relevant kind of reliability since constancy at least over short periods of time is crucial to making diagnostic and resource allocation decisions.

Third, many of the alleged processes derived through interpretation of published tests do not conform to the test's empirically derived factor structure, making the existence of the alleged process ephemeral. Some might argue that "auditory processing" is an exception; however, is it more effective to administer an instrument like the Woodcock-Johnson Cognitive Battery and perhaps find an auditory processing weakness or to directly measure phonemic awareness and alphabetical principles in the context of reading? The latter is more direct, more closely related to

interventions, and less wasteful of time and resources. Greater emphasis on cognitive processing concepts has little potential for improving LD identification.

Training Cognitive Processes. Cognitive processes are sometimes advocated as targets for intervention. For example, Naglieri claims that training in "planning" improves mathematical computation performance with children with planning weaknesses (Naglieri & Das, 1997). The evidence is weak or disconfirmatory (e.g., Kroesbergen, Van Luit, & Naglieri, 2003; Naglieri & Johnson, 2000). Many similar claims have been made over the last 40 or more years, nearly always with the same result.

The pattern goes like this. Authors of tests measuring the "process du jure" claim positive evidence for gains in the processes and, occasionally, in achievement. Once these claims reach a certain level of prominence, other scholars subject the claims to further scrutiny, usually with better research methods, typically resulting in rejection of the claims and dismissal of yet another processing "innovation." As Mann (1979) noted, however, there always are new process test authors and new claims. Thorough reviews of the training of cognitive processes produced unequivocal conclusions across the last 2 generations of LD researchers (e. g., Hammill & Larsen, 1974; Kavale & Forness, 1999; Mann, 1979). Vaughn and Linan-Thompson (2003) stated these conclusions succinctly and well,

> "Although it may be accurate that many students with LD have underlying neurological and/or processing disorders, researchers and educators have been singularly unsuccessful at reliably identifying these difficulties and designing specific treatments to remediate them. (p. 141)
>
> "However, it is important to note that despite lack of support for process identification and treatment models, they continue to persist." P. 141).

Matching Teaching Methodology to Cognitive Process Strengths. A very attractive and old idea is to match teaching methodology to cognitive strengths. In the research literature the matching process is called "aptitude by treatment" interaction. Cognitive processes (aptitudes) are matched to treatments (teaching methods). The matching is justified by asserting that children with achievement problems will learn best if the method of teaching capitalizes on their processing strengths. The potential forms of matching are as varied as the cognitive processes themselves, but the most common match is to pair cognitive process (e.g., visual-auditory modality, simultaneous-successive processes, right-left hemisphere) to reading methodology with the first of the named process pairs assigned to whole language-whole word methods and the second to phonetic methods.

No substantial evidence supports these pairings, although they continue to be popular (Kavale & Forness, 1999). As Vaughn & Linan-Thompson (2003, p. 142) commented, "There is no empirical support for the use of modality-matched instruction or learning styles as a means to enhance outcomes for students with LD." Cronbach (1957), one of the originators of the concept of aptitude by treatment interactions, disavowed the construct in 1975, "Once we attend to interactions, we enter a hall of mirrors that extends to infinity." (Cronbach, 1975, p. 119).

The most common LD definition that focuses on LD as a disorder in psychological processes has misguided the field into emphases on concepts, assessments, and treatments that do not work. Cognitive

processes are not useful as a basis for LD identification, as targets for interventions, or in the design of treatments. It is time to change to LD identification models that are more reliable, valid, and treatment relevant.

Unscientific Vestiges of Early LD: Severe Discrepancy

The Bureau of Education for the Handicapped faced a dilemma in 1975. Congress mandated that they establish methods to limit LD prevalence and provide guidance to states on LD identification (Federal Register, 1976, 1977). If these criteria were not published in final form by January 1, 1978, what amounted to a 2% cap on LD prevalence would become permanent.

Although an LD definition that emphasized underlying process disorders was established in Federal requirements, research developments in the early to mid-1970s precluded using processing deficits as the basis for classification criteria. A series of scathing articles were published in the early to mid 1970s that severely criticized the use of processing assessment and LD treatments based on overcoming processing deficits (Hammill & Larsen, 1974, 1978; Mann, 1979; Newcomer, Larsen, & Hammill, 1975; Ysseldyke, 1973).

A proposed set of regulations to establish LD classification criteria emphasizing a discrepancy between academic achievement and intellectual ability was published in the Federal Register, November 29, 1976. The most controversial feature was the expectancy formula that would precisely define the nature and magnitude of the discrepancy. No mention of processing factors appeared in the proposed LD regulations or in the revisions eventually adopted. Sharp debate ensued and nearly 1000 mostly critical letters were submitted to the BEH ("Coming Face to Face," 1978; Danielson & Bauer, 1978; Federal Register, December 29, 1977). The field was virtually united in opposition to the expectancy formula due to technical and conceptual issues; however, relatively little discussion of the intellectual ability-achievement discrepancy criterion per se occurred at this time.

The final LD classification criteria without the expectancy formula were published just prior to the Congressional deadline (Federal Register, December 29, 1977; 34 C.F.R. 300.540-544). As noted previously, the LD classification criteria specified a severe discrepancy between ability and achievement in 1 or more of 7 achievement areas along with exclusion of other plausible causes. Absent was a discussion of, or guidance on, how the severe discrepancy would be determined or the magnitude of the discrepancy that would be "severe." As shown later, consistent discrepancy determination methods do not exist across the states or, in many instances, within states.

The subtle, but crucial change in what LD meant, from process disorder to unexplained low achievement (Federal Register, 1977) did not receive a lot of discussion in the literature in the late 1970s. An exception was an editorial in the Journal of Learning Disabilities, pointing out that the nearly unanimous outcry against the expectancy formula resulted in overlooking the conceptual shift in LD from psychological processes to unexplained underachievement (Senf, 1978).

The significant shift to severe discrepancy was an uneasy compromise that solved a political problem in the late 1970s. Little research was done on the possible consequences of the severe discrepancy and what was done indicated potentially significant problems with alternative determination methods, reliability, validity, and control of prevalence (Danielson & Bauer, 1978). Severe discrepancy was arguably a necessary expedient to solve a problem of concern to Congress in

1975 that had not been resolved by the LD field, how to identify LD and how to control prevalence. We struggle for answers to that question today, particularly since the solution adopted 25 years ago is fundamentally flawed from a basic measurement perspective (Shepard, 1980, 1983; Shepard & Smith 1983; Shepard, Smith, & Vojir, 1983).

Limited theoretical support for the severe discrepancy classification criterion existed in the mid-1970s (Rutter & Yule, 1975) who reported two groups of children with low reading achievement that varied in response to intervention, a group with ability consistent with achievement and another with ability higher than achievement. Subsequent research has largely disconfirmed the two group analysis (e.g., Fletcher at al., 2002; Francis, Shaywitz, Stuebing, Shaywitz, & Fletcher, 1996; Shaywitz, Escobar, Shaywitz, Fletcher, & Makush, 1992). Convincing data disconfirming the Shaywitz et al. conclusions have not been offered over the past decade.

> "This study allowed us to investigate the commonly held belief that dyslexia is a discrete diagnostic entity. Our data do not support this notion. Rather, they suggest that dyslexia occurs along a continuum that blends imperceptibly with normal reading ability. These results indicate that no distinct cutoff point exists to distinguish children with dyslexia clearly from children with normal reading ability; rather, the dyslexic children simply represent the lower portion of the continuum of reading capabilities." (, p. 148,)

Several good treatments of the inadequacies of the severe discrepancy classification criteria have appeared in the last decade (e.g., Fletcher et al., 2002; Gresham, 2002; Stage, Abbott, Jenkins, and Berninger, 2003; Steubing et al., 2002; Vellutino, Scanlon, & Lyon, 2000) and a number of learned societies or panels have advocated abandonment of the severe discrepancy (Bradley, Danielson, & Hallahan, 2002; Donovan & Cross, 2002; Learning Disabilities Roundtable, 2002; President's Commission on Excellence in Special Education, 2002). We see no reason to repeat these arguments or the efforts to refute them (e.g., Kavale, 2002; Scruggs & Mastropieri, 2002). At best, severe discrepancy is seen by its advocates as one marker of LD, often without specifically delineating other markers beyond the exclusion factors. We believe that the balance of the evidence shows that the severe discrepancy classification criteria are (a) unreliable (particularly in the sense of stability), (b) invalid (poor readers with higher IQs do not differ on relevant variables from those with IQs commensurate with reading levels), (c) easily undermined in practice by giving multiple tests, finding a score that is discrepant and ignoring disconfirming evidence, and (d) harmful because the severe discrepancy delays treatment from kindergarten or first grade when the symptoms of reading disability are first manifested to 3rd or 4th grade when reading problems are more severe, intervention more complex, and the school curriculum shifts to "reading to learn."

In order to avoid harm to children and to move toward LD classification criteria that are more reliable and valid we need to eliminate the severe discrepancy requirement. It does more harm than good.

Alternatives to the Traditional LD Definition and Severe Discrepancy

Alternatives to current LD practices have been advocated by several groups and professional associations in the last 5 years. These alternatives are described with particu-

lar emphasis on the most plausible alternative in current thought, response to intervention (RTI).

Change the LD Definition. Alternative LD definitions that do not emphasize ephemeral, underlying processes have been developed and should be considered. The 1988 LD definition by the National Joint Committee on Learning Disabilities is an example (Hammill, 1990). Although this definition has controversial elements, it clearly illustrates the development of an LD definition that is not framed in terms of discredited cognitive processes.

> "Learning disabilities is a general term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities. These disorders are intrinsic to the individual, presumed to be due to central nervous system dysfunction, and may occur across the life span. Problems in self-regulatory behaviors, social perception, and social interaction may exist with learning disabilities but do not by themselves constitute a learning disability. Although learning disabilities may occur concomitantly with other handicapping conditions (for example, sensory impairment, mental retardation, serious emotional disturbance) or with extrinsic influences (such as cultural differences, insufficient or inappropriate instruction), they are not the result of those conditions or influences." (Hammill, 1990, pp. 77)

Reconceptualize Disability and Learning Disability. The National Academy of Sciences Panel on Minority Overrepresentation considered the evidence for the traditional LD diagnostic construct and classification criteria, concluding that significant changes were needed in order to prevent harm to minority children and enhance the likelihood of effective general and special education interventions (Donovan & Cross, 2002). A key recommendation was to adopt a non-categorical approach to high incidence disabilities OR to change the criteria for LD. The LD researchers and the LD Roundtable participants also suggested changing the LD classification criteria (Bradley, et al., 2002, p. 791-806).

Alternative LD Classification Criteria. The alternative classification criteria focus on response to intervention (RTI); hence, the focus of this conference on RTI. The RTI criteria have the general requirements of multi-tiered interventions (See Tables 1 & 2) (Donovan & Cross, 2002). Children and youth would become eligible for special education through a multiple gating process that depends on 3 or 4 intervention tiers depending on how special and general education are defined. Tables 1 and 2 define the multiple tiers for academic achievement and behavior problems.

Table 1. Multi-tiered Academic Interventions

Academics: The tiers involve empirically-validated instruction, with tiers differentiated by intensity and measurement precision

Tiers	Treatment	Students
General Education	Instruction in general classrooms	All students
Standard Protocol Treatments	Small group tutoring (3-5 students)	About 20% of students at any time; groups of 3-5
Problem Solving	Individualized interventions in general education, intensive methods	About 5% of students at any time
Special Education IEP-based	Intensive instruction treatments, measured precisely with formative evaluation	About 12% of students over time across all disabilities

Table 2. Multi-tiered Behavioral Interventions

Behavior: The tiers involve empirically-validated behavioral interventions, with tiers differentiated by intensity and measurement precision

Tiers	Treatment	Students
General Education	School-wide Positive Behavior Supports	All students
Standard Protocol Treatments	Effective classroom organization and behavior management	All Students-Selective interventions with teachers depending on needs
Problem Solving	Targeted individual interventions in general education,	About 5% of students at any time
Special Education IEP-based	Intensive instruction treatments, measured precisely with formative evaluation	About 12% of students over time across all disabilities

Eligibility. The criteria for LD eligibility recommended by the National Academy of Sciences Panel would incorporate these elements (Donovan & Cross, 2002):

1. Demonstration of large differences between the child's performance and the performance of like age peers using local, state, and/or national norms in relevant domains (academic achievement, social/behavioral skills, and emotional regulation) using direct measures of performance in the natural setting, plus
2. Insufficient response to high quality instructional and behavioral interventions over multiple tiers that are differentiated by increasing intensity and measurement precision, and
3. Documented adverse impact on educational performance and
4. Documented need for special education (specially designed instruction) and/or related services in order for the child to obtain an appropriate education.
5. Exit criteria defined in terms of targets for improved performance.
6. Application of exclusion factors including screening for mental retardation (MR), emotional disturbance (ED), speech language disorders and other disabilities through screening measures or short-form assessments.
7.

Implications of Changes

What if? What if LD policies and practices were changed significantly to reflect scientific evidence on effective interventions for children and youth, AND the LD definition and classification criteria were formulated so that effective interventions were made more likely. What if?

1. What if well established principles of screening and instruction were implemented in preventive interventions, beginning in kindergarten?

Today there is little emphasis on early screening and prevention and much of the general education curriculum and instruction in basic skills areas do not reflect the results of scientific studies (Jenkins & O'Connor, 2002).

2. What if well established principles of instruction were implemented in special education instructional and behavioral change programs?

These principles are well established (e.g., Carnine, Silbert, & Kame'enui, 1997; Foorman, 1995; Fuchs & Fuchs, 1986; Kavale & Forness, 1999; Kame'enui & Carnine, 1998; Vaughn, Gersten, & Chard, 2000; Vaughn & Linan-Thompson, 2003). Many effective practices that make substantial differences in achievement outcomes for children and youth with disabilities are not used in preventive (Torgeson et al., 1999) or in most special education instructional programs (Vaughn & Linan-Thompson, 2003; Zigmond, 1997).

3. What if LD identification focused in instructionally relevant characteristics rather then hypothetical constructs with remote relationships to intervention?

In nearly all states LD identification focuses primarily on two factors: (a) Severe discrepancy between achievement and intellectual ability using norm-referenced tests of achievement and ability, and (b) Exclusion factors denoting other disability conditions and economic disadvantage, (Reschly, Hosp, & Schmied, 2003). Depending on the state, other factors may be required in LD identification such as (a) identification of a processing disorder and (b) average intellectual ability. The assessment to determine eligibility is dominated by standardized tests that provide general information about level of performance, but little guidance for the design, im-

plementation, and evaluation of instruction. It is as if school staffing teams are required by LD policies and practices to face one direction for identification and another for instructional intervention design. If the LD identification methods were reliable and valid, such bifurcation of effort might be tolerable, although inefficient. In fact, the variables critical to traditional LD identification have little relationship to instruction.

Instructionally relevant LD identification procedures have been developed and implemented successfully in several states and local districts (e.g., Barbour, 2002; Grimes, 2002; Marston, 2002). Several clearly documented effects have been established including, improved screening and early intervention, enhanced quality of prereferral interventions (Reschly & Starkweather, 1997), closer links between identification and IEP development, and improved special education programs. The programs cited above establish explicit links between LD identification and LD treatment.

4. What if the assessment used in LD identification was directly relevant to designing interventions, formative evaluation (goals, progress monitoring, and instructional changes), and evaluation of program effectiveness?

The information generated now in LD identification has little application to establishing instructional goals, formative evaluation, or evaluation of programs. Confidence that the same children and youth identified now as LD will continue to be identified with RTI is increased by studying current eligibility determination processes. Teacher referral is the most important step in current eligibility determination. Findings indicate that 90% of students referred by teachers are evaluated for special education and 70% are found eligible (Ysseldyke, Vanderwood, & Shriner, 1997). Results from many studies suggest that the use of direct measures in natural settings using peer comparisons identify the "right" kids and that the information from this approach to LD identification is directly relevant to improving instructional outcomes (Reschly & Starkweather, 1997).

5. What if response to intervention (RTI) is used as a major component of LD identification?

Although more research is needed, RTI has the advantage of determining degree of need and the complexity of the learning problem through the child's actual responses to high quality interventions. The results of the intervention may prevent LD identification or, if insufficient gains are made, these same results are useful in LD identification and designing more intensive interventions in special education. Perhaps most important, the direct assessments of skills used in identification are useful in designing, monitoring, changing, and evaluating interventions.

6. What if the focus in initial placement staffings that include parents and teachers was on graphs reflecting instructional interventions and peer comparisons using direct measures rather than psychometric profiles from standardized tests?

We think there would be a stronger emphasis by all participants on what can be done to improve academic skills, behavior, or emotional regulation rather than a search for alleged causes and correlates. Moreover, it is much more likely that exiting special education and exit criteria will be discussed by the participants.

7. What if annual review teams and parents focused on gains related to explicitly defined skills and competencies rather than irrelevant severe discrepancies, ephemeral processes, and standardized achievement tests whose score scales are not designed to measure change?

Annual reviews might then focus on improving the effectiveness of special education programs rather than continued eligibility. Changes might be made in programs that are ineffective and more children would meet goals and exit special education.

8. What if we could reliably document the positive benefits of special education programs, showing greater gains than in general education, improved rates of passing consequential tests, exit from special education for more students, and improved school completion?

We believe that better student outcomes will be produced by adoption of problem solving approaches and LD identification methods related to effective instruction. Indeed, at least one state (NY) has achieved better outcomes through establishing goals, monitoring progress, and evaluating outcomes (Gloeckler testimony, President's Commission on Excellence in Special Education, February 25, 2002, Hearing in Houston, TX). The general approach to effecting change at the individual and systems levels is the same. The essential steps are identifying differences between current conditions and goals, assessing current status, establishing challenging goals, implementing scientifically based interventions, monitoring progress, changing interventions when goals are not met, and evaluating outcomes.

Consequences of LD Identification Changes

In this final section, consequences of LD identification changes are discussed including the questions established by the symposium organizers. Data are discussed where possible.

1. Are psychologists, diagnosticians, and teachers ready for changes in LD identification?

Generally, a great deal of change will be necessary in the roles of psychologists and diagnosticians. Less change in teachers' roles has occurred in SEAs and LEAs implementing RTI in LD identification. Changes in instructions will be prompted by the availability of graphs, direct measures that can be used frequently, comparisons of progress to goals, and expectations for instructional changes when progress does not meet goals. Changes in LD identification will enhance progress toward improving general and special education interventions.

Continuing education for diagnosticians, psychologists, special education directors, and others will be necessary for effective implementation of RTI in LD identification. The general parameters of that continuing education have been discussed and validated (Reschly & Grimes, 1991). Continuing education in critical areas and implementation of RTI will be markedly enhanced by "manualized" supports for practitioners that prompt, guide, and support implementation of functional assessment, standard protocol treatments, progress monitoring, effective instructional principles, and effective behavior change principles. Manualized or protocol-based assessment and treatments exist today in medicine, psychology, and education. One example is the development of standardized, norm-referenced tests. The manualized supports are increasingly available in curriculum based measurement and other areas (Good & Kaminski, 1996, 2003; Kratochwill & Bergan, 1990). RTI implementation will be enhanced by manualized assessments and treatment protocols.

Continuing education is a must for all of us. I like this perspective.

> "I have saved my course notes from graduate school. With the exception of statistics, almost everything I was

taught no longer is true." Bardon, (1981, p. 202).

My corollary is that I did not do that well in statistics. The continuing education needs are considerable and should not be underestimated. We also should not underestimate, however, the attractiveness of adopting practices that make a documented difference in the achievement, behavior, and emotional regulation of children and youth.

2. Do professional roles change as a result of RTI-based LD identification?

I have a data-based answer that applies to school psychologists and diagnosticians. My experience is that relatively little change in teachers' roles is necessary, other than increased emphasis on scientifically-based instruction.

Changes in school psychology practices are summarized in Figures 2, 3, 4, and 5. The comparisons are between Iowa school psychologists from the Heartland Area Education Agency (N=65) and a nationally representative sample of school psychologists (N=1054). The Heartland response rate was 100%. The national response rate was 74%. Changes in roles and assessment are quite dramatic. The Iowa sample was comparable or perhaps a bit better on dimensions of job satisfaction.

Roles changed in terms of the amount of time devoted to assessment for special education eligibility determination (less in RTI) (see Figure 2), amount of time devoted to direct intervention and problem solving consultation (more in RTI), kinds of assessment (see Figure 3), and kinds of educational assessment (see Figure 4). School psychologists in RTI focus on assessment that is relevant to interventions with markedly less assessment using ability tests, visual-motor measures, and projectives. Behavior observation by school psychologists using systematic observation methods occurs much more frequently in RTI. Assessment of academic skills is dominated by curriculum-based measurement (CBM) and curriculum-based evaluation (CBE) (Howell & Nolet, 2000). Both CBM and CBE are directly related to academic interventions. Systematic behavior observations are devoted to assessing academic learning opportunities and students' enabling/disabling behaviors related to learning and positive classroom behaviors. Direct measures are used to define problems, assess degree of need, determine progress toward goals, determine changes in programs, and evaluate outcomes. The dramatic assessment differences in traditional and RTI illustrate effectively the relative focus on determining LD eligibility through cognitive processes and severe discrepancy on one hand and functional, intervention-related measures useful for identification and interventions on the other.

The history and current data on RTI implementation in IA, MN, IL, and SC clearly indicate that identification can be accomplished with assessment procedures that are related to interventions. The outcomes of those interventions, in turn, are the basis for subsequent decisions about eligibility, programming, and special education continuation/exit.

Figure 2. Current Roles of School Psychologists in the U.S. and Iowa: Hours per Week

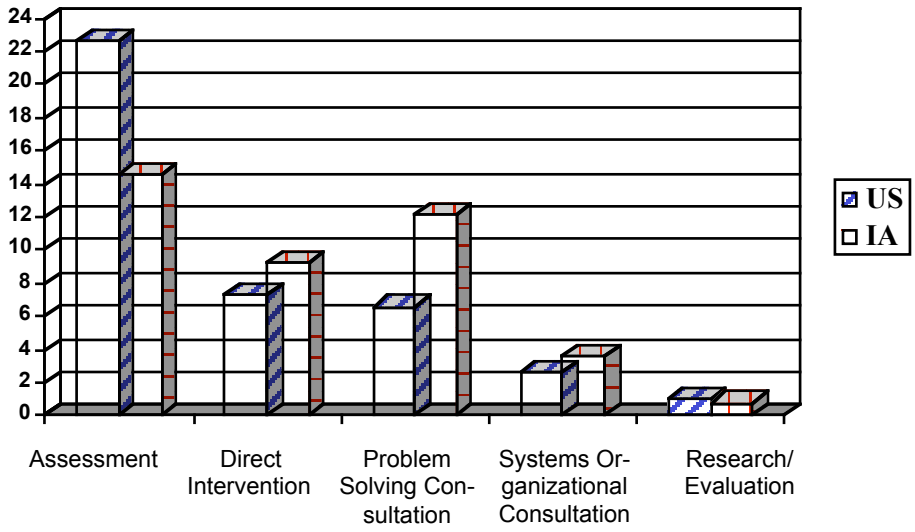
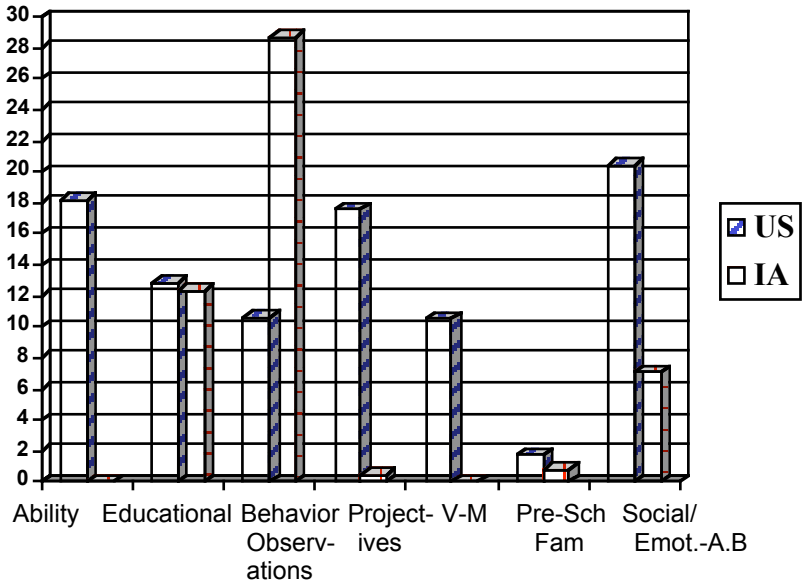


Figure 3: School Psychology Assessment: Times per Month



Reschly, R. J.(2003, December). *What if LD Identification Changed to Reflect Research Findings?* Paper presented at the National Research Center on Learning Disabilities Responsiveness-to-Intervention Symposium, Kansas City, MO.

Figure 4: Assessment of Educational Skills: Times per Month: U.S. and Iowa

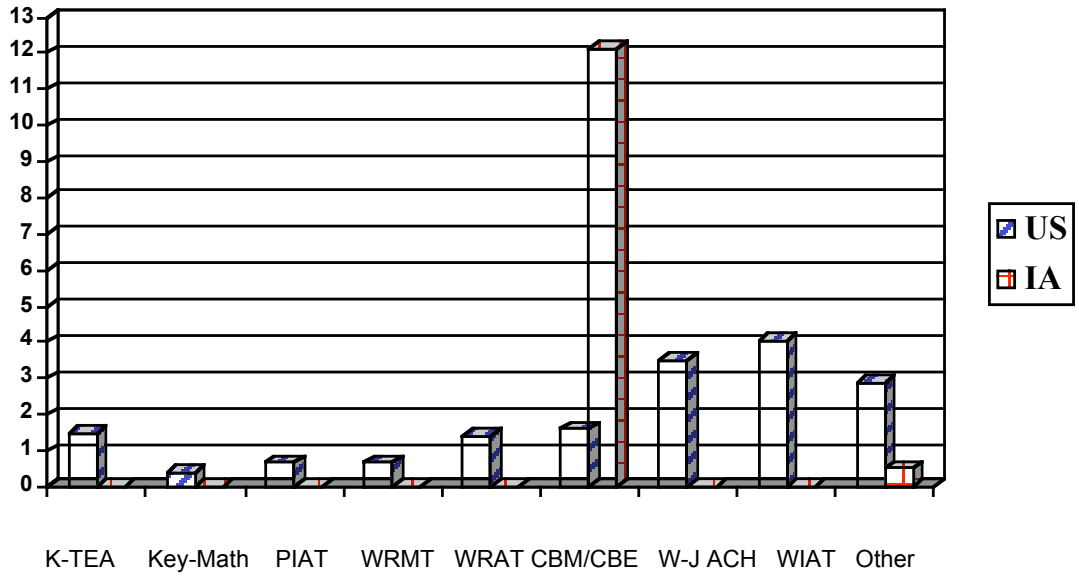
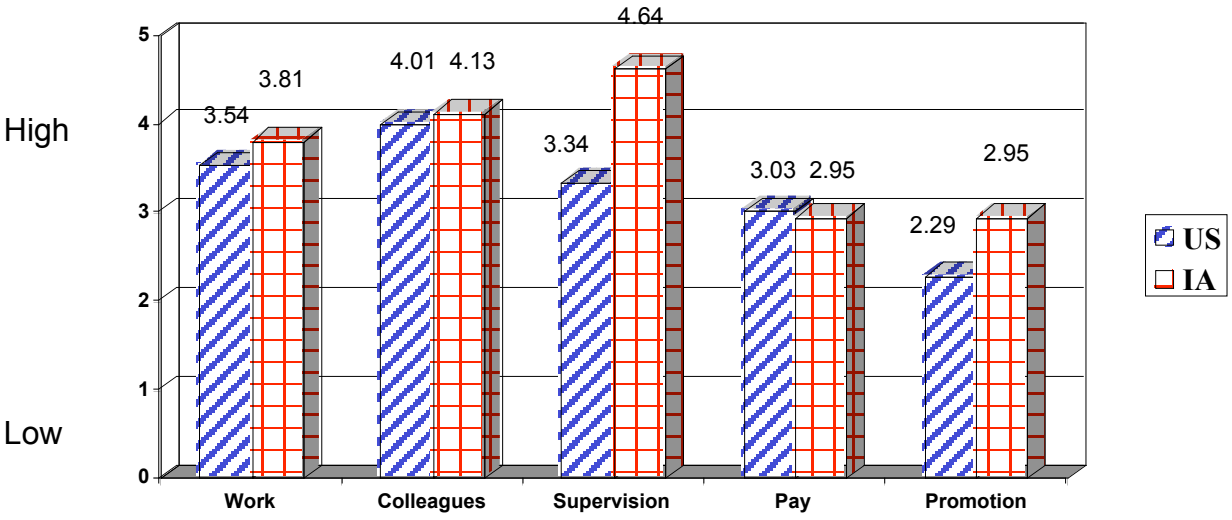
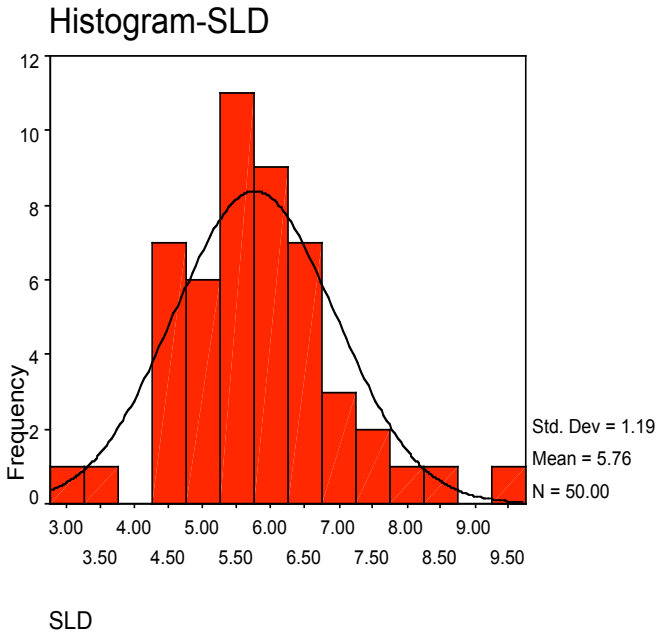


Figure 5: School Psychologists' Job Satisfaction
in the U.S. and Iowa



Reschly, R. J.(2003, December). *What if LD Identification Changed to Reflect Research Findings?* Paper presented at the National Research Center on Learning Disabilities Responsiveness-to-Intervention Symposium, Kansas City, MO.

Figure 6. Distribution of State SLD Prevalence



3. Will LD prevalence vary markedly if RTI is implemented?

LD prevalence already varies by a factor of 3 times in the U.S. (KY =2.76% vs. RI at 9.46%) (See Figure 6). Moreover, LD prevalence within states varies markedly now. It is unlikely that these differences will become greater. LD prevalence differences have been difficult to explain. No satisfactory explanations have appeared in the literature. For example, in a recent analysis, we determined the number of points required by the states with explicit requirements (N=30) in order for a student with an IQ of 100 to meet the severe discrepancy requirement. The range was 15 to 30. The correlation between the number of points required and LD prevalence should be negative (requiring larger discrepancies should produce low prevalence). In fact, the correlation between the stringency of states' severe discrepancy requirements and prevalence was not statistically significant.

LEAs and SEAs implementing RTI do not have large increases or decreases in the proportion of students in special education or in LD. There is no reason to believe that RTI will markedly increase or decrease LD prevalence.

4. Will differences be exacerbated between children and youth with LD in SEAs and LEAs?

First, different groups of students with LD vary differ significantly today. It is unlikely that these differences will become larger with RTI than they are now. Enormous

variations in children and youth with LD exist across LEAs within the same state (Gottlieb Alter, & Gottlieb, 1999; Gottlieb, Alter, Gottlieb, and Wishner, 1994; Peterson & Shinn, 2002). Some studies suggest that these differences between LD groups are closely related to LEA achievement levels. Gottlieb et al. reported that the LD students in a suburban New York City district would be slightly above average achievers in New York City and, therefore, unlikely to be referred to special education. Peterson and Shinn reached a similar conclusion. Findings from studies in southern California also suggest that levels of classroom and local school attendance center achievement significantly affect the characteristics of children and youth identified as LD (Bocian, Beebe, MacMillan, & Gresham, 1999; Gresham, MacMillan, & Bocian, 1998; MacMillan, Gresham, & Bocian, 1998). Traditional LD is in part a function of where you are and the performance levels of peers.

5. Who is responsible to ensure that the procedures are implemented fully and with fidelity in special education or general education?

In places with RTI LD identification procedures in place, the personnel responsible for implementing procedures in the traditional system are responsible for implementing procedures in the RTI system. No additional or new personnel are required. RTI has been implemented without additional resources or new kinds of personnel. Professional roles and activities do change as noted previously.

6. Is it impossible to implement RTI as an LD identification method with good fidelity?

This is a challenge. Others have suggested significant barriers to implementation (Fuchs, Mock, Morgan, & Young, 2003). Implementation fidelity, however, is not a problem unique to RTI.

Significant continuing education is necessary to do RTI well (Upah & Tilly, 2002). Implementation fidelity is a significant problem; however, before dismissing RTI because it is difficult to implement, it is essential to consider the considerable benefits of closer links between LD identification and treatment. Moreover, implementation problems are rife in current LD identification policies and practices.

Significant proportions of students diagnosed as LD and placed in special education currently do not meet the existing LD classification criteria established by the states. In several studies as many as 50% of all students in LD programs do NOT meet the existing classification criteria (Bocian et al., 1999; Gottlieb et al. 1994; Kavale & Reece, 1992; MacMillan et al., 1998; Norman & Zigmond, 1980; Shepard, 1980; Shepard, 1983, Shepard & Smith, 1983; Shepard, Smith, & Vojir, 1983; Smith, Coleman, Dokecki, & Davis, 1977). Consistency of decision making from school to school is an enormous problem in the current system that has existed at least since the mid-1970s. The current system has failed on this criterion.

The question is, Will children be served more effectively if we devote resources to ensuring that practitioners apply more rigorously current LD criteria by focusing on better compliance with discrepancy criteria and processing disorders? Or does it make more sense in terms of outcomes of children and youth to focus on overcoming RTI implementation problems so that closer ties are established between LD identification and LD treatment. Finding the "right" kids is not the primary special education challenge. Doing something with them that changes academic and behavioral trajectories, increases competencies, and expands opportunities is the real challenge. RTI is more closely related to improving special education.

7. How will LD identification be accomplished at the middle and high school levels where a significant proportion of students with LD are identified now?

First, some of the identification of students with LD at the high school level is questionable in that it appears to be motivated by gaining more time on the SAT and ACT college aptitude tests rather than a need or desire for specially designed instruction. Many of the parents and students seeking accommodations on high stakes tests do NOT want special education IEPs and special education programs, per se. These students do not need special education because they are earning good grades in school subjects and do not need specially designed instruction. They want accommodations on tests, usually more time, not special education.

These students are by definition not eligible for LD under the legal auspices of IDEA or state special education statutes. Special education eligibility requires documented adverse impact of the disability on educational performance and need for special education (IDEA, 1997, 1999). These students may be eligible for Section 504 accommodations and should be evaluated in relation to those requirements.

The standard RTI criteria are relevant to middle and high school students. The RTI criteria, low performance related to peers in (a) relevant domain(s), insufficient response to high quality interventions, documented adverse impact on classroom performance, and documented need for special education, are equally applicable at the middle and high school levels. It is important to note, however, that documentation of both adverse impact and need for special education are crucial to LD decision making regardless of the system used.

8. How will LD be differentiated from other education disabilities if a cognitive measure is not used as part of the assessment?

For some, this distinction is not important (President's Commission on Excellence in Special Education, 2002, see p. 20; Tilly, Reschly, & Grimes, 1999). For many others the distinction is very important. I suspect that most states will retain LD as a diagnostic category and will not adopt a non-categorical approach to identification of high incidence disabilities.

The principal issue for people strongly committed to the LD diagnostic construct is making sure that a clear distinction exists between LD and mental retardation (MR). The LD researcher group suggested screening for adaptive behavior and intellectual ability to rule out MR (Bradley et al., 2002). Simple and time efficient methods exist to accomplish that distinction. The overwhelming majority of states are likely to retain the traditional high incidence categories such as LD, MR, and ED. Retention of traditional high incidence categories is not a barrier to implementation of RTI.

9. Will LD still mean average ability?

The answer depends at least in part on what is regarded as average ability. States typically do not operationalize what is meant by average other than to require that ability must be above the level of MR (Reschly et al, 2003). Studies over the last 25 years of students in LD programs leads to at least some skepticism about the average ability assumption. Early studies suggested that the average IQ of students with LD was in the mid to high 80s, suggesting that over half were below average if average is defined as by the IQ range of 90-110 (Norman & Zigmond, 1980; Smith et al, 1977). More recent studies yield similar results. The average IQ of students in LD programs is about 2/3 SD below the population average. The National Longitudinal

Transition Study (U.S. Department of Education, 1992) reported a mean of 87.1. Smith et al. reported a mean of 87.1. The highest reported IQ mean was 96.5 (Kavale & Reece, 1992); however the mean IQ of the student population in that state was 112. The assumption of average ability has not been implemented effectively in the traditional system where half or more of all students in LD have IQs below the average IQ range of 90-110. There is no reason to expect the average IQs of children and youth identified with LD will be even more below average with implementation of RTI.

10. Will LD still mean unexpected low achievement?

This core concept of LD can be retained by considering non-IQ indices to establish expectations. Other approaches to establish expectations for achievement include (a) Unexpected low learning rate even with high quality interventions, (b) Unexpected low performance in a specific academic skill or subject area compared to performance in other areas, (c) Unexpected low performance in relation to age/grade level norms, and (d) Unexpected low performance in relation to other possible explanations such as MR, ED, sensory impairment, and inadequate opportunity to learn.

11. Is it premature to move away from the severe discrepancy approach to identification of LD?

This question can be best answered with a question, Is it ever premature to move away from a method that causes harm? At the very least, we must move away from the use of severe discrepancy in the first 3 grades. Severe discrepancy causes harm at those ages.

I think it is premature to mandate immediate elimination of severe discrepancy in every SEA and LEA. It is time to encourage and support the development and implementation of alternatives to severe discrepancy and processing disorder conceptions of LD. Models exist (Reschly, Tilly, & Grimes, 1999). Some places are using alternative methods without any identifiable harm and tangible benefits to children and youth with achievement problems. There is no reason to believe that RTI methods cause harm or deprive students of legal protections and interventions that they need.

12. Will RTI as a method of LD identification strengthen or diminish services to students with LD, strengthen or diminish LD as a viable diagnostic construct, strengthen or diminish the LD infrastructure of parent and professionals organizations, and strengthen or diminish special education?

There will be different answers to these questions across the participants at this symposium. My answer is that changing to RTI as the LD identification method is part of addressing the fundamental problem in special education and LD policies and practices, the outcomes problem. Current LD identification methods are not supported by scientific evidence and they are not linked to the interventions needed by children and youth. LD as a diagnostic entity, LD parent and professional associations, and special education in general will be strengthened if there are links between identification and treatment and if treatment programs are more effective. The greatest threat to special education and LD is not RTI; rather, it is undocumented outcomes and persistence of practices unrelated to effective interventions. Failure to improve outcomes IS an enormous threat to the entire LD and special education infrastructure.

LD identification through RTI has the enormous advantage of establishing links between identification and treatment. RTI establishes several of the basic elements known to be closely related to effective treatment including direct measures, graphing, formative evaluation, etc. Traditional LD

identification sends children to special education with psychometric profiles that are irrelevant to effective treatment and likely cause harm by distracting teachers and others from focusing on variables that do make a difference in effective interventions. It is time for change.

Summary

The case for the use of a particular methodology must be made by its advocates. The case for traditional LD concepts of cognitive processing deficits and severe discrepancy is not supported by documented benefits for children and youth. In fact, these conceptions cause harm by delaying treatment, wasting resources in the collection of data that are irrelevant to treatment, and focusing attention on variables unrelated to effective treatment. Alternatives that answer more effectively the continuing special education question of documented benefits to children and youth need to be established, implemented, evaluated, and disseminated widely through continuing education and changes in LD policies and practices.

References

Barbour, B. (2002). Best practices in promoting educational reform at a school district level. In A. Thomas and J. Grimes (Eds.), *Best practices in school psychology* (4th Ed.) (pp. 293-300). Bethesda, MD: National Association of School Psychologists.

Bardon, J. I. (1981). A personalized account of the development and status of school psychology. *Journal of School Psychology, 19,* 199-210.

Bocian, K. M., Beebe, M. E., MacMillan, D. L., & Gresham, F. M. (1999). Competing paradigms in learning disabilities classification by schools and the variations in meaning of discrepant achievement. *Learning Disabilities Research and Practice, 14,* 1-14.

Bradley, R., Danielson, L., & Hallahan, D. P. (2002). Specific learning disabilities: Building consensus for identification and classification. In R. Bradley, L. Danielson, & D. P. Hallahan (Eds.) *Identification of learning disabilities: Research to practice* (pp. 791-804). Mahwah, NJ: Lawrence Erlbaum.

Carnine, D. W., Silbert, J., & Kame'enui, E. J. (1997). *Direct Instruction Reading* (3rd Ed.). Upper Saddle River, NJ: Prentice Hall.

Coming face to face with the impersonal numbers game. Editors interview with the late Daniel Ringelheim. (1978). *Journal of Learning Disabilities, 11,* 60-66.

Cronbach, L. J. (1957). The two disciplines of scientific psychology. *American Psychologist, 12,* 671-684.

Cronbach, L. J. (1975). Beyond the two disciplines of scientific psychology. *American Psychologist, 30,* 116-127.

Danielson, L. C., & Bauer, J. N. (1978). A formula-based classification of learning disabled children: An examination of the issues. *Journal of Learning Disabilities, 11,* 163-176.

Donovan, M. S., & Cross, C. T. (2002). *Minority students in special and gifted education.* Washington, DC: National Academy Press.

Reschly, R. J.(2003, December). *What if LD Identification Changed to Reflect Research Findings?* Paper presented at the National Research Center on Learning Disabilities Responsiveness-to-Intervention Symposium, Kansas City, MO.

cation. Washington, DC: National Academy Press.

Federal Register (1976). Assistance to states for education of handicapped children: Notice of proposed rulemaking. November 29, 41(230), pp. 52404-52407.

Federal Register (1977). Procedures for evaluating specific learning disabilities. December 29, 42(250), pp. 65082-65085.

Fletcher, J. M., Lyon, G. R., Barnes, M., Stuebing, K. K., Francis, D. J., Olson, R. K., & Shaywitz, S. E. (2002). Classification of Learning Disabilities: An evidence-based evaluation. In R. Bradley, L. Danielson, & D. P. Hallahan (Eds.) *Identification of learning disabilities: Research to practice* (pp. 185-250). Mahwah, NJ: Lawrence Erlbaum.

Foorman, B. R. (1995). Research on the great debate: Code-oriented versus whole-language approaches to reading instruction. *School Psychology Review, 24,* 376-392.

Francis, D. J., Shaywitz, S. E., Stuebing, K. K., Shaywitz, B. A., & Fletcher, J. M. (1996). Developmental lag versus deficit models of reading disability: A longitudinal individual growth curves analysis. *Journal of Educational Psychology, 88,* 3-17.

Fuchs, L. S., & Fuchs, D. (1986). Effects of systematic formative evaluation: A meta-analysis. *Exceptional Children, 53,* 199-208.

Fuchs, D., Mock, D., Morgan, P. L., & Young, C. L. (2003). Responsiveness-to-intervention: Definitions, evidence, and implications for the learning disabilities construct. *Learning Disabilities: Research and Practice, 18,* 157-171.

Gersten, R., Vaughn, S., Deshler, D., & Schiller, E. (1997). What we know about using research findings: Implications for improving special education practice. *Journal of Learning Disabilities, 30,* 466-476.

Gloeckler, L. (2002). *Testimony to the President's Commission on Excellence in Special Education,* February 25, 2002, Houston, TX. Available at http://www.ed.gov/inits/commissionsboards/whspecialeducation/meetings.html

Good, R.H., & R.A. Kaminski (1996). Assessment for instructional decisions: Toward a proactive/prevention model of decision-making for early literacy skills. *School Psychology Quarterly, 11,* 326-336.

Good, R.H., & R.A. Kaminski (2003). *Dynamic Indicators of Early Basic Literacy Skills.* Longmont, CO: Sopris West.

Gottlieb, J., Alter, M., & Gottlieb, B. W. (1999). General education placement for special education students in urban school s. In M. J. Coutinho & A. C. Repp (Eds.), *Inclusion: The integration of students with disabilities.* Belmont, CA: Wadsworth Publishing Co.

Gottlieb, J., Alter, M. Gottlieb, B., & Wishner, J. (1994). Special education in urban America: It's not justifiable for many. *Journal of Special Education, 27,* 453-465.

Gresham, F. M. (2002). Responsiveness to intervention: An alternative approach to the identification of learning disabilities. In R. Bradley, L. Danielson, & D. P. Hallahan (Eds.) *Identification of learning disabilities: Research to practice* (pp. 467-519). Mahwah, NJ: Lawrence Erlbaum.

Gresham, F. M., MacMillan, D. L., & Bocian, K. M. (1998). Agreement between school study team decisions and authoritative definitions in classification of students at-risk for mild disabilities. *School Psychology Quarterly, 13,* 181-191.

Grimes, J. (2002). Responsiveness to interventions: The next step in special education

identification, service, and exiting decision making. In R. Bradley, L. Danielson, & D. P. Hallahan (Eds.) *Identification of learning disabilities: Research to practice* (pp. 531-547). Mahwah, NJ: Lawrence Erlbaum.

Hammill, D. D. (1990). On defining learning disabilities: An emerging consensus. *Journal of Learning Disabilities, 23,* 74-84.

Hammill, D., & Larsen, S. (1974). The effectiveness of psycholinguistic training. *Exceptional Children, 41,* 5-14.

Hammill, D., & Larsen, S. (1978). The effectiveness of psycholinguistic training: A reaffirmation of position. *Exceptional Children, 44,* 402-414.

Howell, K. & Nolet, V. (2000). *Curriculum-based evaluation: Teaching and decision making* (3rd Ed.). Atlanta, GA: Wadsworth.

Individuals with Disabilities Education Act, (1997, 1999). 20 U. S. C. 1400 et. Seq. (Statute). 34 C.F.R. 300 (Regulations)

Jenkins, J. R., & O'Connor, R. E. (2002). Early identification and intervention for young children. In R. Bradley, L. Danielson, & D. P. Hallahan (Eds.) *Identification of learning disabilities: Research to practice* (pp. 99-149). Mahwah, NJ: Lawrence Erlbaum.

Kame'enui, E. J., & Carnine, D. W. (1998). *Effective Teaching Strategies That Accommodate Diverse Learners*. Upper Saddle River, NJ: Prentice Hall.

Kavale, K. A. (2002). Discrepancy models in the identification of learning disability. In R. Bradley, L. Danielson, & D. P. Hallahan, (Eds.), *Identification of learning disabilities: Research to practice* (pp. 369-426. Mahwah, NJ: Lawrence Erlbaum.

Kavale, K. A., & Forness, S. R. (1999). Effectiveness of special education. In C. R. Reynolds & T. B. Gutkin (Eds.) *The handbook of school psychology (3rd Ed.)* (pp. 984-1024). New York: Wiley.

Kavale, K. A., & Reese, J. H. (1992). The character of learning disabilities: An Iowa profile. *Learning Disability Quarterly, 15,* 74-94.

Kratochwill, T. R., & Bergan, J. R. (1990). *Behavioral consultation in applied settings: An individual guide.* New York: Plenum.

Kroesbergen, E. H., Van Luit, J. E. H., & Naglieri, J. A. (2003). Mathematical learning difficulties and PASS cognitive processes. *Journal of Learning Disabilities, 36,* 574-582.

Learning Disabilities Roundtable (2002). *Specific learning disabilities: Finding common ground.* Washington DC: U.S. Department of Education, Office of Special Education Programs, Office of Innovation and Development.

MacMillan, D. L., Gresham, F. L., & Bocian, K. M. (1998). Discrepancy between definitions of learning disabilities and school practices: An empirical investigation. *Journal of Learning Disabilities, 31,* 314-326.

Mann, L. (1979). *On the trail of process.* New York: Grune & Stratton.

Marston, D. (2002). A functional and intervention-based assessment approach to establishing discrepancy for students with learning disabilities. In R. Bradley, L. Danielson, & D. P. Hallahan (Eds.) *Identification of learning disabilities: Research to practice* (pp. 437-447). Mahwah, NJ: Lawrence Erlbaum.

Naglieri, J. A., & Das, J. P. (1997). *Cognitive Assessment System interpretative handbook.* Itasca, IL: Riverside.

Naglieri, J. A., & Johnson, D. (2000). Effectiveness of a cognitive strategy intervention in improving arithmetic computation

based on the PASS theory. *Journal of Learning Disabilities, 33,* 591-597.

Norman, C. A., & Zigmond, N. (1980). Characteristics of children labeled and served as learning disabled in school systems affiliated with child service demonstration centers. *Journal of Learning Disabilities, 9,* 542-547.

Newcomer, R., Larsen, S., & Hammill, D. (1975). A response to Minskoff. *Exceptional Children, 42,* 144-148.

Peterson, K. M. H., & Shinn, M. R. (2002). Severe discrepancy models: Which best explains school identification practices for learning disabilities? *School Psychology Review, 31,* 459-476.

Presidents Commission on Excellence in Special Education (2002). A New Era: Revitalizing Special Education for Children and their Families. Washington DC: U.S. Department of Education, Author. http://www.ed.gov/inits/commissionsboards/whspecialeducation/index.html

Reschly, D. J. (1979). Nonbiased assessment. In G. Phye & D. Reschly (Eds.), *School Psychology: Perspectives and issues* (pp. 215-253). New York: Academic Press.

Reschly, D. J., & Bersoff, D. N. (1999). Law and school psychology. In C. R. Reynolds & T. B. Gutkin (Eds.), *The handbook of school psychology* (3rd Ed.) (pp. 1077-1112). New York: John Wiley Inc.

Reschly, D. J., & Grimes, J. P. (1991). State department and university cooperation: Evaluation of continuing education in consultation and curriculum based assessment. *School Psychology Review, 20,* 519-526.

Reschly, D. J., Hosp, J. L., & Schmied, C. M. (2003). *And miles to go ….. State SLD Requirements and Authoritative Recommendations.* Nashville, TN: National Research Center on Learning Disabilities. Available at www.nrcld.org

Reschly, D. J., Kicklighter, R. H., & McKee, P. (1988). Recent placement litigation, Part III: Analysis of differences in Larry P., Marshall, and S-I and implications for future practices. *School Psychology Review, 17,* 37-48.

Reschly, D. J., & Starkweather, A. R. (1997). *Evaluation of an alternative special education assessment and classification program in the Minneapolis Public Schools.* Minneapolis, MN.

Reschly, D. J., Tilly, W. D. III., & Grimes, J. P. (Eds.) (1999). *Special education in transition: Functional assessment and noncategorical programming.* Longmont, CO: Sopris West

Reschly, D. J., & Ysseldyke, J. E. (2002). Paradigm shift: The past is not the future. In A. Thomas & J. Grimes (Eds.) *Best practices in school psychology IV* (4th Ed.) (pp. 3-20). Bethesda, MD: National Association of School Psychologists.

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

Scruggs, T. E., & Mastropieri, M. A. (2002). On babies and bathwater: Addressing the problems of identification of learning disabilities. *Learning Disability Quarterly, 25,* 155-167

Senf, G. M. (1978). Implications of the final procedures for evaluating specific learning disabilities. *Journal of Learning Disabilities, 11,* 124-126.

Shaywitz, S. E., Escobar, M. D., Shaywitz, B. A., Fletcher, J. M., & Makush, R. (1992). Distribution and temporal stability of dyslexia in an epidemiological sample of 414 children followed longitudinally. *New England Journal of Medicine, 326,* 145-150.

Shepard, L. A. (1980). An evaluation of the regression discrepancy method for identi-

fying children with learning disabilities. *Journal of Special Education, 14,* 79-91.

Shepard, L. A. (1983). The role of measurement in educational policy: Lessons from the identification of learning disabilities. *Educational Measurement: Issues and Practices, 2,* 4-8.

Shepard, L. A., & Smith, M. L. (1983). An evaluation of the identification of learning disabled students in Colorado. *Learning Disability Quarterly, 6,* 115-127.

Shepard, L. A., Smith, M. L., & Vojir, C. P. (1983). Characteristics of pupils identified as learning disabled. *American Educational Research Journal, 20,* 309-331.

Smith, M. D., Coleman, J. C., Dokecki, P. R., & Davis, E. E. (1977). Intellectual characteristics of school labeled learning disabled children. *Exceptional Children, 43,* 352-357.

Stage, S. A., Abbott, R. D., Jenkins, J. R., & Berninger, V. W. (2003). Predicting response to early reading intervention from verbal IQ, reading-related language abilities, attention ratings, and verbal IQ-word reading discrepancy: Failure to validate discrepancy method. *Journal of Learning Disabilities, 36,* 24-33.

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,* 469-518.

Tilly, W. D. III. (2002). Overview of problem solving. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology IV* (pp. 21-36). Bethesda MD: National Association of School Psychologists.

Tilly, W. D. III., Reschly, D. J., & Grimes, J. P. (1999). Disability determination in problem solving systems: Conceptual foundations and critical components. In D. J. Reschly, W. D. Tilly III., & J. P. Grimes (Eds.), *Special education in transition: Functional assessment and noncategorical programming* (pp. 285-321). Longmont, CO: Sopris West.

Torgesen, J. L., Wagner, R. K., Rashotte, C. A., Rose, E., Lindamood, P., Conway, T., & Garvan, C. (1999). Preventing reading failure in young children with phonological processing disabilities: Group and individual responses to instruction. *Journal of Educational Psychology, 91,* 579-593

United States Department of Education (1992).*Fourteenth Annual Report to Congress on the Implementation of the Education of the Individuals with Disabilities Education Act.* Washington, DC: Office of Special Education and Rehabilitation Services, Author.

Upah, K. R. F., & Tilly, W. D. III (2002). Designing, implementing and evaluating quality interventions. . In A. Thomas and J. Grimes (Eds.), *Best practices in school psychology* (4th Ed.) (pp. 483-501). Bethesda, MD: National Association of School Psychologists.

Vaughn, S. Gersten, R., & Chard, D. J. (2000). The underlying message in LD intervention research: Findings from research syntheses. *Exceptional Children, 67,* 99-114.

Vaughn, S., & Linan-Thompson, S. (2003). What is special about special education for students with learning disabilities? *Journal of Special Education, 37,* 140-147.

Vellutino, F. R., Scanlon, D M., & Lyon, G. R. (2000). Differenting between difficult-to-remediate and readily remediated poor readers: More evidence against the IQ-achievement discrepancy definition of

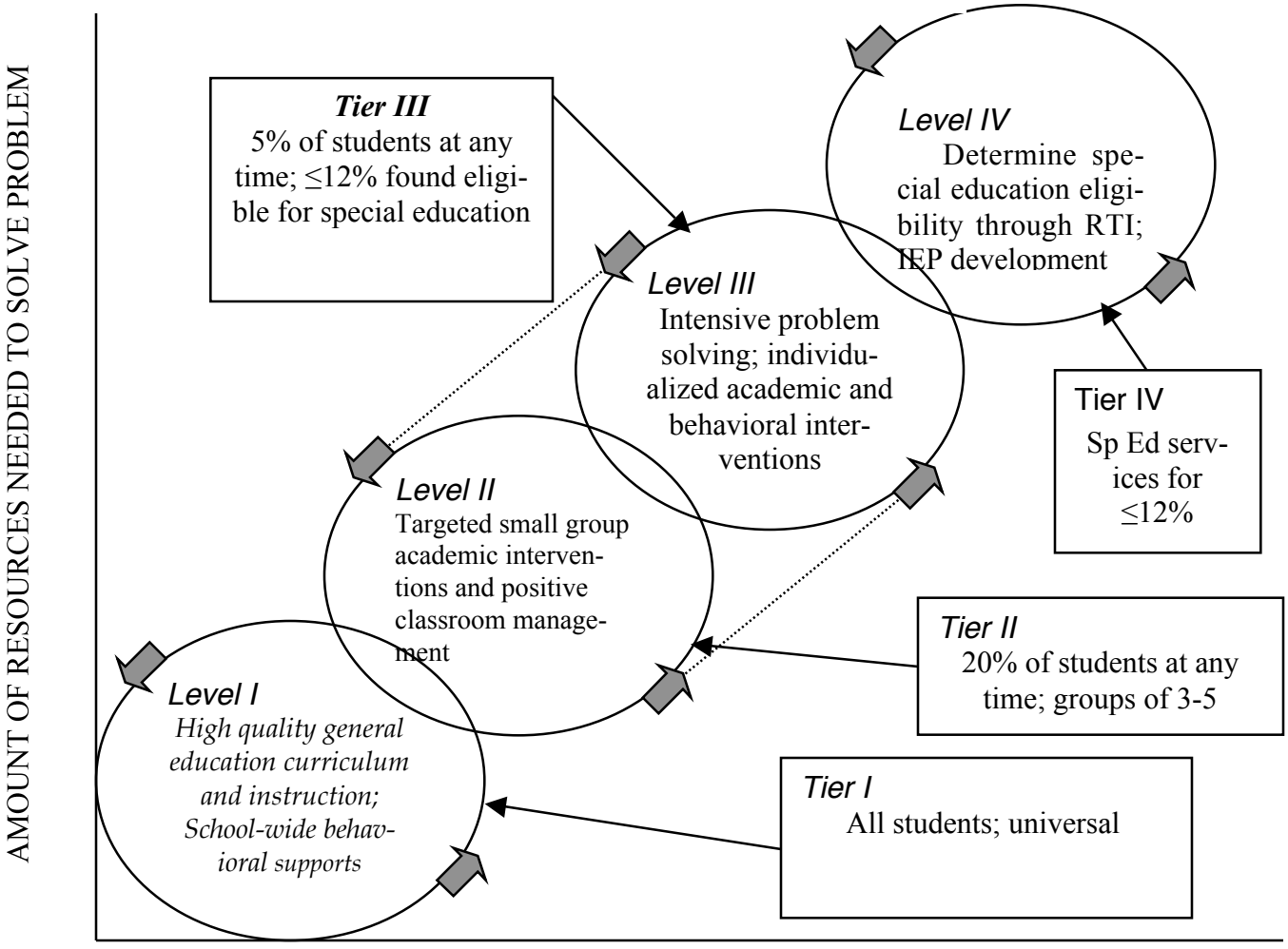
reading disability. *Journal of Learning Disabilities, 33,* 223-238.

Ysseldyke, J. E. (1973). Diagnostic-prescriptive teaching: The search for aptitude-treatment interactions. In L. Mann & D. Sabatino (Eds.), *The first review of special education.* New York: Grune & Stratton.

Ysseldyke, J. E., Vanderwood, M. L., & Shriner, J. (1997). Changes over the past decade in special education referral to placement probability: An incredibly reliable practice. *Diagnostique, 23,* 193-201.

Zigmond, N. (1997). Educating students with disabilities: The future of special education. In J.W. Lloyd, E. J. Kame'enui, & D. Chard (Eds.), *Issues in the education of students with disabilities* (pp. 377-390). Mahwah, NJ: Lawrence Erlbaum Associates.

Figure 1. NRC Multi-tiered Interventions (figure adapted from Heartland AEA Program Manual, 2002).



Reschly, R. J.(2003, December). *What if LD Identification Changed to Reflect Research Findings?* Paper presented at the National Research Center on Learning Disabilities Responsiveness-to-Intervention Symposium, Kansas City, MO.