



School Psychology Forum:

R E S E A R C H I N P R A C T I C E

VOLUME 1 • ISSUE 1 • PAGES 16–27 • NOVEMBER 2006

Implementing IDEA 2004 With a Three-Tier Model That Includes Response to Intervention and Cognitive Assessment Methods

James B. Hale

Philadelphia College of Osteopathic Medicine

Abstract: Reauthorized by the U.S. Congress in 2004, the Individuals with Disabilities Education Act will require ongoing regulatory efforts to determine its operationalization and implementation. School psychologists and other educational professionals are particularly concerned about the guidelines for identification of children with specific learning disabilities (SLD). Although some practitioners may continue to use the ability-achievement discrepancy approach, the response-to-intervention (RTI) approach can now be used to identify children with SLD. Although RTI methods should be encouraged and adopted, a multitiered approach that combines RTI with cognitive assessment should be used to serve all children with learning difficulties. In this best practices model, RTI should be adopted early to ameliorate learning problems, but if interventions efforts are unsuccessful, a comprehensive evaluation of cognitive processes should be undertaken to ensure that a child meets the SLD definition and eligibility criteria before classification occurs and individualized intervention begins. Neither the traditional discrepancy nor RTI approach is sufficient for SLD identification, as the SLD definition requires determination of whether a child has a deficit in the basic psychological processes in the presence of cognitive integrities, which adversely affects academic achievement. Only comprehensive evaluation of cognitive and neuropsychological processes can provide the necessary data for practitioners to make this determination. This methodology combines the best of RTI and cognitive assessment practices to not only ensure SLD diagnostic accuracy but also to optimize educational outcomes for children with SLD.

Overview

Recently passed by Congress, the reauthorized Individuals with Disabilities Education Act (IDEA 2004) was advanced in an attempt to optimize educational outcomes for children with learning problems. Differing perspectives in the field of school psychology and education have led practitioners to believe that they must use a response-to-intervention (RTI) approach or the traditional ability-achievement discrepancy approach to determine if a child has a specific learning disability (SLD), but in reality neither of these approaches is sufficient to classify a child with SLD.

The schism between those who advocate for RTI and those who advocate comprehensive evaluation of cognitive processes must be bridged, because politicized professional ideologies do not serve

Correspondence regarding this article should be directed to James B. Hale, PhD, Associate Professor of Psychology, School Psychology Program, Philadelphia College of Osteopathic Medicine, 4190 City Avenue, Philadelphia, PA 19131 (jamesha@pcom.edu).

children well. Instead, we must scrutinize these positions for their individual merits and limitations, and develop models that incorporate the best tenets of both perspectives in a balanced practice model.

To accomplish this end, we must enhance SLD diagnostic accuracy and optimize educational outcomes for this heterogeneous population using an integrated three-tier approach that includes RTI and comprehensive cognitive evaluation for children who do not RTI. This approach will not only ensure that the IDEA 2004 definition and method for determining SLD will be addressed before any child is classified with SLD, but can also be used to develop, monitor, and evaluate interventions at each level of service.

Mandating RTI as Best Practice: The Impetus for Change

The RTI methods advocated by proponents are essential to any balanced approach and, in this author's opinion, should be mandated. All schools should be required to use research-based instruction, regular student progress monitoring, single-subject experimental designs, and empirical decision making, and this should occur within the context of both standardized and problem-solving RTI protocols (see Fuchs, Mock, Morgan, & Young, 2003). Prevention is likely the key to reducing debilitating learning problems (Fuchs et al., 2003), and a large minority of underachieving children can be served if early identification and remediation of academic difficulties is undertaken (Speece, 2005). This becomes likely if RTI methods, grounded in behavioral and single-subject experimental psychology, receive widespread recognition and endorsement by parents, educators, support staff, administrators, and academics. The time for change is now, and without universal support, the fundamental needs of children will remain unaddressed by ineffective educational systems that resist change.

The evidence base is clear that RTI is necessary for needed educational reform. RTI advocates have documented that problem-solving consultation and data-based decision making can be used to address a wide array of academic and behavior problems, and they are valued by both consumers and consultants (Kratochwill, Elliott, & Rotto, 1995; Sheridan, Welch, & Orme, 1996; Witt, Gresham, & Noell, 1996). For academic problems, curriculum-based measurement (CBM) proponents have demonstrated that repeated measurement of child performance in curricular domains over time allows results to be applied directly to actual classroom learning experiences, thereby ensuring the ecological and treatment validity of findings (e.g., Deno, Fuchs, & Marston, 2001; Shinn, 1998). RTI advocates also argue that system reform is needed to address all children's needs regardless of disability status, that increased preventative services can reduce unnecessary student failure, labeling, and remediation in special education, and that the artificial segregation of regular and special education barriers must be eliminated (e.g., Fuchs, Deshler, & Reschly, 2004; Lyon et al., 2001; Reynolds, Wang, & Walberg, 1987; Stanovich, 1999).

For many schools, and especially for many school psychologists, the traditional classification and intervention approach does not effectively address all children's needs because the limited resources available are driven by assessment for *identification* purposes rather than assessment for *intervention* purposes. Capitalizing on this reality, RTI proponents have shown the techniques they advocate can provide assessment results that guide intervention, so practitioners and policy makers are seeking answers to the inevitable question: How should RTI be implemented and for what purpose(s)?

From these essential questions emerged several RTI positions regarding the interventions offered and service delivery required, with different perspectives offered at different levels or stages of intervention. These levels or tiers are different based on the model advocated, but a three-tier model is the most common.

Fuchs et al. (2003) provide a general overview of this three-tier RTI model. "(1) Students are provided with 'generally effective' instruction by their classroom teacher; (2) [t]heir progress is monitored; (3) [t]hose who do not respond get something else, or something more, from their teacher or someone else; (4) [a]gain, their progress is monitored; and (5) [t]hose who still do not respond either qualify for special education or for special education evaluation" (Fuchs et al., 2003, p. 159). Readers might be concerned by the Fuchs et al. (2003) description of RTI, as it seems unnecessarily vague and nonspecific, but in reality their definition is constructed to reflect meaningful discord among RTI advocates.

These perspectives differ in terms of Tier 1 classroom instruction, Tier 2 intervention techniques for children at risk, and Tier 3 SLD classification for children who do not RTI. The two competing models differ in experimental designs (group or individual) and measurement systems (standardized or individualized) to determine RTI (Gerber, 2005), with research now underway to examine the efficacy of these approaches (Fuchs et al., 2004). Two competing RTI paradigms have emerged: the standard protocol often advocated by educators (e.g., O'Connor, Harty, & Fulmer, 2005; Vaughn, Linan-Thompson, & Hickman, 2003) and problem-solving protocol typically valued by school psychologists (e.g., Deno, 2002; Kovaleski, 2002; Tilly, Reschly, & Grimes, 1999). Although both the standard and problem-solving approaches each value RTI as a practice, they have different models for RTI implementation and methods for determining SLD.

Recent reviews (e.g., Fuchs et al., 2004; Gerber, 2005; Marston, 2005) reveal similarities and differences among these competing RTI models. Standard protocol advocates value standardized scientifically based classroom instruction and experimental group designs. The standardized protocol attempts to maximize *external* validity in determining RTI by ensuring uniform classroom instruction, regular administration of standardized CBM probes, and frequent comparisons of at-risk students to normative data. Determination of a child's response or nonresponse is based on his or her acquisition of instructional benchmarks and deviation from expected curricular growth curves. Although the problem-solving model similarly emphasizes scientifically based instruction and regular student progress monitoring, it maximizes *internal* validity by providing increasingly individualized interventions and measurement practices for children who do not respond to typical classroom instruction. The major difference conceptually is one of external (standardized approach) versus internal (problem-solving model) validity. Marston (2005) suggests both methods result in achievement gains, but the individualized nature of the problem-solving approach could explain why data documenting generalizability of findings has been limited (e.g., Fuchs et al., 2003).

Despite concerns over how RTI should be implemented, there is consensus among RTI proponents that traditional assessment practices are ineffectual and system-level changes are necessary. Most of the criticism is based on the use of ability-achievement discrepancy to identify children with SLD, with the use of IQ scores being the evil culprit. RTI advocates often argue that IQ is irrelevant for identifying SLD and intervention (e.g., Fletcher et al., 2002); therefore, intellectual/cognitive assessment is irrelevant, because IQ is the only thing that comes from it.

Where does this belief emanate from? For both social and political reasons (see Hale, Fiorello, Kavanagh, Holdnack, & Aloe, in press), researchers have used various techniques to reify IQ and admonish practitioners to avoid clinical interpretation of cognitive and intellectual measures (e.g., McDermott, Fantuzzo, & Glutting, 1990). Using this argument, that IQ is the only thing practitioners should examine, RTI proponents have concluded that intellectual/cognitive measures are virtually meaningless for SLD identification and intervention.

Surely, the finding of *g* is inevitable, and IQ will continue to predict meaningful outcomes as a conglomerate of many disparate cognitive functions (Horn, in press), but this IQ-only belief comes from studies that have used inappropriate achievement measures (e.g., Herrnstein & Murray, 1994; see Roberts et al., 2000, for explanation) and dubious statistical methods (e.g., Glutting, Youngstrom, Ward, Ward, & Hale, 1997; see Hale, Fiorello, Kavanagh, Hoepfner, & Gaither, 2001, for explanation) to support the contention that global IQ is the only meaningful score in the prediction of meaningful life outcomes (e.g., Jensen, 1998).

These conclusions have been theoretically, clinically, and empirically challenged and questioned in recent times (see Fiorello et al., in press; Fiorello, Hale, McGrath, Ryan, & Quinn, 2001; Hale, Kaufman, Naglieri, & Kavale, 2006; Hale et al., 2001; Horn, in press; Lezak, 1988; Roberts et al., 2000), calling into question the utility of IQ scores, and therefore ability-achievement discrepancy.

If IQ is not a useful measure for most children, especially those with disabilities (e.g., Fiorello et al., in press; Fiorello et al., 2001; Hale, Fiorello, Kavanagh, Holdnack, & Aloe, in press; Hale et al., 2001), it should not be surprising that ability-achievement discrepancy does not discriminate between children with SLD and those who are low achieving (e.g., Fletcher et al., 1994; Francis, Shaywitz, Stuebing, Shaywitz, & Fletcher, 1996; Fuchs, Fuchs, Mathes, Lipsey, & Roberts, 2001; Stanovich & Siegel, 1994).

Part of the problem could be related to the inconsistent use of discrepancy criteria (e.g., Reschly & Hosp, 2004) to ensure children get services regardless of discrepancy status (e.g., Gottlieb, Alter, Gottlieb, & Wishner, 1994) or that single administration of multiple tests or subtests is likely to result in measurement and/or classification error (e.g., Fletcher, Denton, & Francis, 2005), but the biggest problem is the belief that IQ scores are the best measures of a child's ability. Not only is the discrepancy approach ineffectual in determining SLD, but few practitioners address the legal definition of SLD when making the classification decision, which is unheard of in most classification systems (Hale et al., 2006). Practitioners need to know disorder definitions before making diagnoses, but this fact has been largely ignored when schools identify a child with SLD.

In addition to IQ overemphasis that leads to SLD identification and definitional problems, discrepancy does not lead to successful interventions or differentiated instruction, and it fails to serve children in need who do not meet criteria (Dombrowski, Kamphaus, & Reynolds, 2004). Some have argued that intelligence or cognitive testing is meaningless for identifying SLD as result, and that low achievement could serve as a model for SLD identification (e.g., Dombrowski et al., 2004; Fletcher et al., 2002). If the definition of SLD has been ignored, and the identification methods have been arbitrary or inconsistently implemented, it is no wonder that evidence has emerged challenging the construct validity of SLD (e.g., Fletcher et al., 2002). If the construct validity of SLD is in question, and IQ-achievement discrepancy is meaningless for identification and intervention purposes, who can argue with adopting RTI methods that not only serve more children, but can also ensure that repeated assessment is directly linked with intervention to ensure treatment efficacy? Unlike "test and place" practices that lead to "problem admiration", RTI is about adapting instruction to meet the needs of all children in their natural environment. No one can argue about the benefits of such an approach, as ecological and treatment validity is of primary concern in the RTI model. We want to help children learn and succeed, and RTI can finally provide us with the tools to make this a reality.

RTI Is Insufficient for SLD Classification (as Is Discrepancy!)

If RTI methods are so valuable, and traditional discrepancy approaches so problematic, then why not adopt an RTI-only approach to serving children with learning needs? Differences begin to emerge when RTI proponents suggest failure to RTI should lead to SLD classification (e.g., Reschly, 2005). Proponents of RTI and cognitive assessment for SLD identification (e.g., Hale et al., 2006) suggest that explicit SLD definition and identification criteria should be used to enhance identification practices and intervention outcomes (Kavale, 2002). They argue that we should challenge SLD practices and not eliminate the SLD construct by combining those with true SLD and those with low achievement into a large heterogeneous learning difficulty population.

This new classification scheme RTI proponents seek—identifying children with SLD who do not RTI—does not accurately reflect historical or current clinical perspectives on SLD, the legal definition of SLD, or acknowledge that underachievement may be due to multiple causes that may have nothing to do with SLD (Hale et al., 2006; Kavale, Kaufman, Naglieri, & Hale, 2005; Mather & Gregg, 2006). National statistics suggest too many children do not respond to current academic instruction, and this is especially true for minority children (Hale, Naglieri, Kaufman, & Kavale, 2004), suggesting too many children have substantial learning needs, and could be classified with SLD, even if systematic RTI approaches are undertaken.

Although RTI approaches and research efforts are greatly needed, several issues requiring further empirical examination must be resolved before it can adopted for determining SLD. For instance, RTI research has largely ignored other academic domains but word reading and fluency, has not addressed optimal instructional techniques across grade levels and curricula, examined the multifaceted nature of SLD, developed objective criteria for what determines response or failure to respond prior to SLD classification, or ensured that methods are nondiscriminatory or have sufficient technical adequacy (Hale et al., 2006; Kavale, Holdnack, Mostert, & Schmied, 2003; Scruggs & Mastropieri, 2005). RTI proponents need to specify which interventions are empirically based, examine the type and severity of achievement deficit necessary

for RTI intervention, formalize administration and interpretation of RTI methods, specify the duration of RTI before SLD classification occurs, and provide evidence that RTI will not only reduce need for special education but also specify what will happen after a nonresponder is classified as SLD (e.g., McBride, Dumont, & Willis, 2004).

Although these critical issues must be addressed, the real problem with using an RTI-only approach has to do with a child becoming SLD by *default* because he or she did not RTI. This is an egregious scientific error. In scientific research, you either reject the null hypothesis and try to avoid Type I errors (i.e., false positives) or fail to reject the null hypothesis and avoid Type II errors (i.e., false negatives). In the old discrepancy model, discrepancy was used to reject the null (child was SLD) or fail to reject the null (child was not SLD), but research suggests there were many Type I (they were classified as SLD, but were not) and Type II (they were not classified as SLD, but probably were) errors committed. There is no disagreement here. However, with failure to RTI resulting in SLD classification by default, there is no hypothesis to test, so we cannot determine who the Type I and Type II errors will be and whether classification errors will vary according to the local RTI policies adopted. What leads to classification errors? We can't be sure in the RTI-only approach, because no hypothesis will be offered to evaluate the cause of failed RTI. Practitioners must then defend their decision to classify or not classify a child with SLD on the basis of limited evidence regarding the presence of disability, rather it is just assumed that the child is SLD.

In reality, the only conclusion that is possible is that a child did not respond to our best efforts at intervention, and that a lot of other children did respond, but science dictates that we must determine whether it was the teacher, the curriculum, the measure, treatment integrity, contingencies, instructional benchmarks, intervention duration, or something else (e.g., parent conflict, psychiatric disorder, medical condition) that caused the failure to respond. None of these hypotheses for failure to RTI appears to be addressed in the RTI-only model, so no hypotheses will be tested. Although RTI was in part born from behavioral psychology, proponents neglect an essential and critical requirement of single subject designs; that is, that failure to respond cannot automatically translate into a SLD diagnosis unless all other variables are held constant. As a result, the RTI-only SLD classification position confuses construct measurement with the construct itself, a problem inherent in assuming IQ and ability are equivalent (Gerber, 2005).

In addition, different criteria for determining responsiveness or failure to respond result in different subsets of children identified (Fuchs, Fuchs, & Compton, 2004) and growth curve analysis does provide the diagnostic sensitivity that was expected (Speece, 2005). As a result, some have argued for a dual-discrepancy approach that includes failure to RTI and an achievement deficit (Fuchs et al., 2004; Kovalski & Prasse, 2004; Speece & Case, 2001), but there is little consensus on what norms should be used (local or national) and how instructional benchmarks will be determined or evaluated, which could lead to similar unreliable classification results found when ability-achievement discrepancy is used (Fuchs et al., 2004).

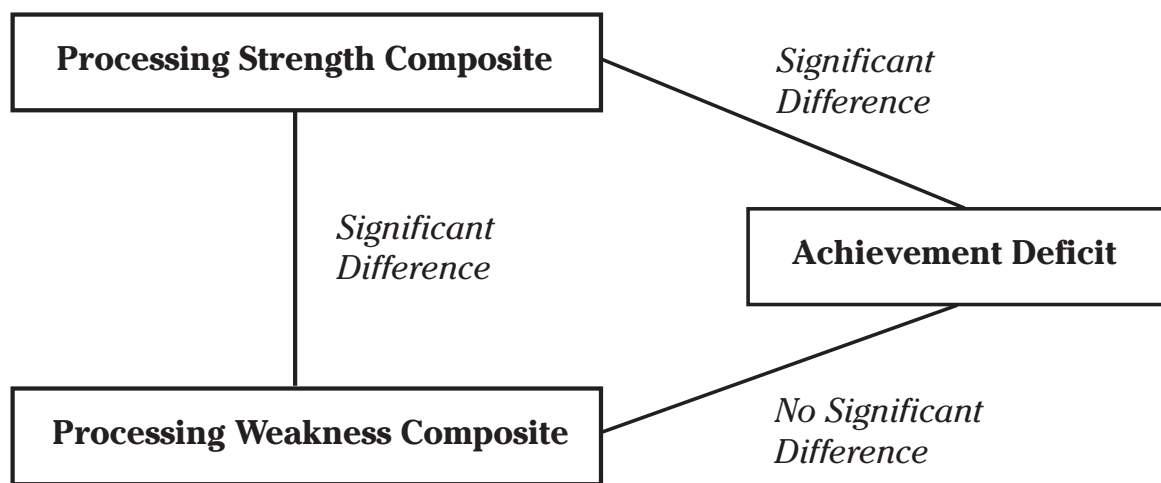
The standardized instructional and measurement RTI approach might improve external validity, but who will mandate curricula, teaching methods, and pay for the associated costs? Even standardized approaches have limitations, such as high initial rates of false positives (O'Connor et al., 2005; Gerber, 2005) and false negatives that result when children's RTI interventions result in minimal improvement and prevent children from receiving needed special education services (Fuchs et al., 2004). Problem-solving approaches that provide individualized interventions necessary for success (Reschly, 2005) foster internal validity, but then any child's failure to respond is especially suspect, because this individualization in instruction, measurement, and/or objectives limits external validity or generalizability beyond the unique single-subject design. As a result, it should not be surprising that problem-solving approaches are associated with easier access to special education services and many false positives (Fuchs et al., 2004). Gerber's (2005) extensive research on teacher behavior suggests that they differ in their tolerance of individual learner characteristics based on instructional resources and their own individual differences, leading to classification variability regardless of the RTI method used.

Finally, while RTI can certainly identify children with low achievement who are at risk for continued learning failure, neither the RTI nor the discrepancy approach addresses the IDEA 2004 *definition* of SLD. SLD is a deficit in some (but not all) of the basic psychological processes that interferes with academic achievement (Kavale et al., 2005). Using RTI and discrepancy methods without examining the definition of SLD will not increase diagnostic sensitivity and specificity; rather it will result in a generic learning problems category (Hale et al., 2006). Not only is the SLD definition relevant under IDEA 2004, it is also consistent with the consensus of the U.S. Department of Education Learning Disabilities Roundtable (2002), which notes, “The identification of a core cognitive deficit, or a disorder in one or more psychological processes, that is predictive of an imperfect ability to learn, is a marker for a specific learning disability.” Only cognitive and neuropsychological evaluations of psychological processes can determine the presence of this marker, because children with SLD process information differently than others (Semrud-Clikeman, 2005) and they have specific neuropsychological *deficits* not delays (Francis, Shaywitz, Stuebing, Shaywitz, & Fletcher, 1996).

Well-standardized cognitive (see Kaufman & Kaufman, 2001) and neuropsychological (see Hale & Fiorello, 2004) measures can be used to ensure practitioners address the SLD definition and method for determination. The IDEA 2004 SLD definition can be operationalized as a consistency between cognitive deficit(s) and academic deficit(s) coupled with a significant difference between cognitive assets and deficits (e.g., Flanagan, Oritz, Alfonso, & Mascolo, 2002; Hale & Fiorello, 2004; Hale et al., 2006; Kavale, Holdnack, Mostert, & Schmied, 2003; Naglieri, 1999, 2001, 2003). The Concordance-Discordance Model (Hale & Fiorello, 2004) can be used to determine whether children meet this essential defining characteristic of SLD (see Figure 1). To use the model, practitioners identify the academic deficits, and then make sure these are concordant with cognitive deficits, and discordant with cognitive strengths, with these cognitive domains also being discordant, using the standard error of the difference (Anastasi & Urbina, 1997; see also Hale & Fiorello, 2004). This approach not only fosters identification of SLD, but it also provides practitioners with knowledge that can guide individualized interventions. If subsequently examined for ecological and treatment validity using a problem-solving approach and single-subject interventions, the true value of cognitive assessment will be realized (Braden & Kratochwill, 1997; Hale & Fiorello, 2004).

Figure 1. The Concordance-Discordance Model.

THE CONCORDANCE-DISCORDANCE MODEL OF SLD IDENTIFICATION



Reprinted by permission from Hale and Fiorello, *School Neuropsychology: A Practitioner's Handbook*. Copyright 2004 by the Guilford Press.

In contrast to arguments that cognitive assessment has no relevance for intervention, there have been numerous studies that show specific relationships between cognitive and neuropsychological constructs and academic achievement, and that there are disorder subtypes that respond differentially to individualized interventions (Das, Naglieri, & Kirby, 1994; Evans, Floyd, McGrew, & Leforgee, 2002; Fiorello et al., 2001; Fiorello et al., 2006; Flanagan et al., 2002; Floyd, Evans, & McGrew, 2003; Hale et al., in press; Hale & Fiorello, 2004; Hale et al., 2001; Hale, Fiorello, Bertin, & Sherman, 2003; Naglieri, 1999, 2001, 2003).

Although mostly absent from the RTI literature, there are hundreds of neuropsychological and neuroimaging studies that support assessment of psychological processes in understanding a child's achievement competency and psychosocial functioning (see Hale & Fiorello, 2004). These studies suggest that comprehensive evaluation of cognitive and neuropsychological processes is relevant for understanding, identifying, and serving children with SLD, especially after they have not responded to our best intervention efforts using standardized and/or problem-solving RTI approaches.

These arguments are not those of test authors with vested interests as some would suggest (e.g., Reschly, 2005), but instead are shared by many involved in the RTI debate (Fuchs, Fuchs, & Compton, 2004; Gerber, 2005; Johnson, Mellard, & Byrd, 2005; Kavale, 2005; Mastropieri & Scruggs, 2005; Mather & Gregg, 2006; Semrud-Clikeman, 2005).

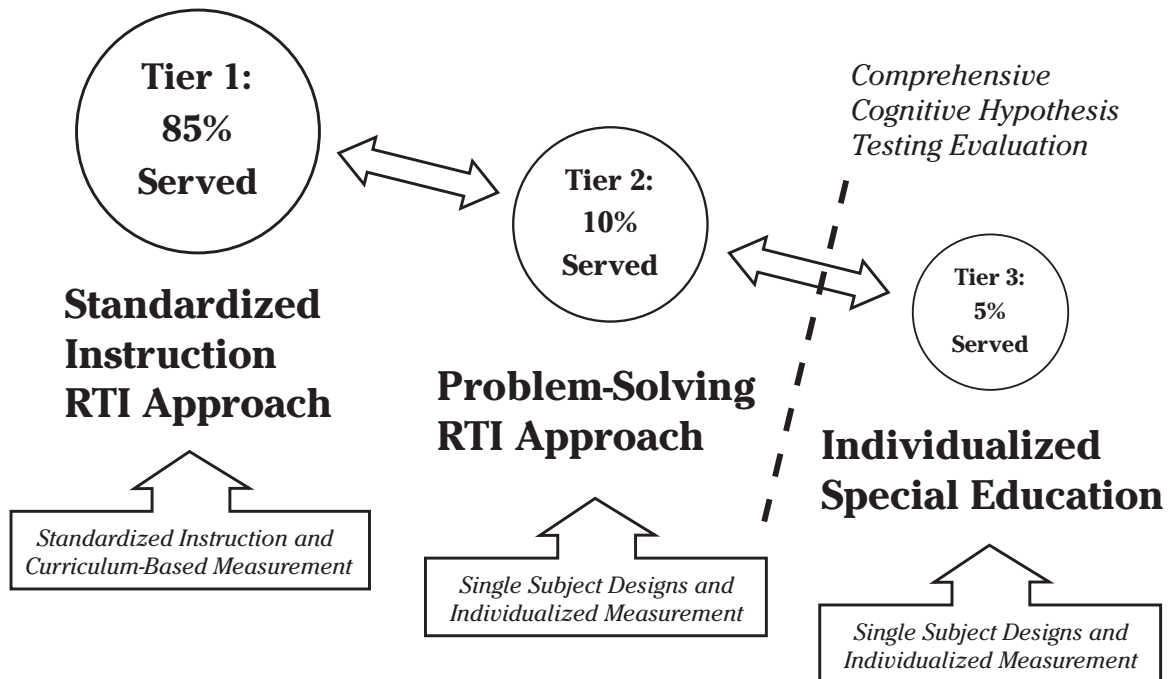
Combining RTI and Comprehensive Evaluation: The Hybrid Three-Tier Model

In contrast to the position that practitioners must do either RTI or comprehensive evaluations, best practice would dictate that we would do both. Neither RTI nor ability-achievement discrepancy address the definition of SLD, and both ignore the relevance of psychological processes in identifying SLD and serving the needs of these children. Hale et al. (2006) argue that a systematic three-tier prevention, intervention, and identification process should be undertaken, with the standardized RTI approach implemented at Tier 1, a problem-solving approach utilized during Tier 2, and should a child be a nonresponder at Tiers 1 and 2 levels, a comprehensive evaluation at Tier 3 should be undertaken prior to SLD identification. This approach provides for a convergence of the IDEA 2004 statutory and regulatory components, and will increase SLD diagnostic sensitivity and specificity beyond that obtained when only RTI or discrepancy is used (Hale et al., 2006). Not only will this help practitioners identify children with SLD, but it will also provide the impetus to develop individualized interventions that have both ecological and treatment validity if subsequent problem-solving meetings are undertaken to plan, develop, monitor, and evaluate intervention efficacy (e.g., Hale & Fiorello, 2004).

According to the Hale et al. (2006) model (see Figure 2), Tier 1 would be the RTI standard protocol approach implemented by classroom teachers who would use repeatable standardized CBM probes to evaluate student progress in relation to typical student learning curves and instructional benchmarks. At Tier 1, children would be exposed to a standardized, scientific, research-based instructional program, and compared to other children using measures with adequate technical quality. Although this might effectively ameliorate a child's learning difficulty, some children will not respond. For nonresponders at Tier 1, an individualized problem-solving approach could be undertaken by the intervention team at Tier 2. The team, which might include regular and/or special education teachers, and support professionals such as school psychologists, would operationally define the problem, analyze the problem determinants, brainstorm and implement individualized interventions, and then develop a relevant measurement system to evaluate results and recycle the intervention as necessary. Depending on the child and environment, Tier 2 interventions could happen in a variety of settings, including regular and/or special education, and use a variety of measurement approaches, both being individualized for each student or a group of students with similar needs. The resultant single-subject experimental design would be sensitive to the child's specific needs, and environmental accommodations would be undertaken to maximizing internal validity and experimental control.

Figure 2. Integrating RTI, comprehensive evaluation, and service delivery.

INTEGRATED THREE-TIER MODEL OF SERVICE DELIVERY



The instructional needs of most children would then be met during Tier 1 or Tier 2 levels, and comprehensive evaluation would not be needed for these children, but if a child did not respond at Tier 1 or Tier 2, we could be confident that systematic RTI interventions that maximized both internal and external validity were attempted, and that a Tier 3 comprehensive team evaluation would be necessary to determine *why* the child did not respond, and *what* we should do next.

This Tier 3 comprehensive evaluation should include a standardized assessment of the child's basic psychological processes, and if the child displayed processing and achievement deficits in the presence of processing integrities, we could be assured the child meets the definition and method for determining SLD under IDEA 2004 (Hale et al., 2006).

Using the Cognitive Hypothesis Testing (CHT) model (Hale & Fiorello, 2004), this information can be used to develop specialized and targeted instructional strategies that may be tailored to individual and situation, but these strategies would still need intensive progress monitoring to ensure our findings have ecological and treatment validity. The CHT evaluation not only allows for accurate identification of SLD, but also other disorders that may interfere with academic performance (e.g., Attention Deficit Hyperactivity Disorder), because practitioners could more clearly identify the cause of instructional failure and specify individualized interventions. Problem-solving interventions would predominate during Tiers 2 and 3, and thereafter until a child's learning and/or other problems are ameliorated. The bidirectional arrows in Figure 2 suggest this process is not unidirectional, but that children could be served at different tiers depending on their progress or lack of progress with the intervention methods attempted.

If the CHT evaluation does not show a child has the requisite deficit in the basic psychological processes in the presence of intact processing integrities using the Concordance-Discordance Model (see Figure 1), the child would then return to Tier 2 with renewed efforts to establish appropriate instructional techniques, intervention adherence to ensure treatment integrity, alternative measurement techniques to document

progress, manipulation of antecedent or consequent events to foster child performance, etc., until treatment response is obtained. Similarly, for a child identified with SLD and provided with specialized instruction in Tier 3, the child could return to Tier 2 and eventually Tier 1 once sufficient academic progress is made.

The balanced RTI and comprehensive evaluation three-tier model proposed by Hale et al. (2006) provides children with the best opportunity for academic success, regardless of the type and severity of their academic problem, and is entirely consistent with the National Association of School Psychologists' (2003) position. It provides for early identification and intervention services, standardized and adapted instruction to ensure external and internal validity, a strategy for ensuring the definition and method for SLD determination are addressed, and measurement techniques that are both sensitive and valid for identification and intervention purposes.

With an estimated 95% of children served in Tiers 1 and 2, the 5% of children served in Tier 3 could have the individualized assessment and intervention methods necessary to ensure their academic and/or behavioral success. If adopted correctly, this Tier 3 group would be those with true SLD, those with brain-based strengths and weaknesses that need individualized and specialized instruction. This model would essentially lead to SLD being a *low incidence* category, rather than the high incidence category it currently is, or will certainly be when all children with SLD and low achievement are categorized as SLD under an RTI-only approach.

It is time to move beyond polar ideologies advocated by academics, and instead adopt sound assessment and intervention techniques that serve the needs of all children. Data-based problem solving requires practitioners to use multiple tools and strategies, and some of these tools include well-standardized cognitive/intellectual and neuropsychological measures. RTI practices should be required in all schools, but the explosive growth in cognitive and neuropsychological theory and practice should not be ignored by practitioners who are trying to meet all children's needs.

Bridging these apparently disparate perspectives is greatly needed in our field, and a balanced RTI and comprehensive evaluation approach will likely lead to best practice in SLD identification and intervention, with all children benefiting as a result.

References

- Anastasi, A., & Urbina, S. (1997). *Psychological testing* (7th ed.). Upper Saddle River, NJ: Prentice Hall.
- Braden, J. P., & Kratochwill, T. R. (1997). Treatment utility of assessment: Myths and realities. *School Psychology Review, 26*, 475–485.
- Das, J. P., Naglieri, J. A., & Kirby, J. R. (1994). *The assessment of cognitive processes: The PASS theory of intelligence*. Boston: Allyn & Bacon.
- Deno, S. L. (2002). Problem solving as “best practice.” In A. Thomas, & J. Grimes (Eds.), *Best practices in school psychology IV* (pp. 37–56). Bethesda, MD: National Association of School Psychologists.
- Deno, S. L., Fuchs, L. S., Marston, D., & Shin, J. (2001). Using curriculum-based measurement to establish growth standards for children with learning disabilities. *School Psychology Review, 30*, 507–524.
- Dombrowski, S. C., Kamphaus, R. W., & Reynolds, C. R. (2004). After the demise of the discrepancy: Proposed learning disabilities diagnostic criteria. *Professional Psychology: Research and Practice, 35*, 364–372.
- Evans, J. J., Floyd, R. G., McGrew, K. S., & Leforgee, M. H. (2002). The relations between measures of Cattell-Horn-Carroll (CHC) cognitive abilities and reading achievement during childhood and adolescence. *School Psychology Review, 31*, 364–372.
- Fiorello, C. A., Hale, J. B., Holdnack, J. A., Kavanagh, J. A., Terrell, J., & Long, L. (in press). Interpreting intelligence test results for children with disabilities: Is global intelligence relevant? *Applied Neuropsychology*.

- Fiorello, C. A., Hale, J. B., McGrath, M., Ryan, K., & Quinn, S. (2001). IQ interpretation for children with flat and variable test profiles. *Learning and Individual Differences, 13*, 115–125.
- Fiorello, C. A., Hale, J. B., & Snyder, L. E. (2006). Cognitive hypothesis testing and response to intervention for children with reading problems. *Psychology in the Schools, 43*, 835–853.
- Flanagan, D. P., Ortiz, S. O., Alfonso, V. C., & Mascolo, J. T. (2002). *The achievement test desk reference (ATDR): Comprehensive assessment an learning disabilities*. Boston: Allyn & Bacon.
- Fletcher, J. M., Denton, C., & Francis, D. J. (2005). Validity of alternative approaches for the identification of learning disabilities: Operationalizing unexpected underachievement. *Journal of Learning Disabilities, 38*, 545–552.
- Fletcher, J. M., Lyon, G. R., Barnes, M., Stuebing, K. K., Francis, D. J., Olson, R. K., et al. (2002). Classification of learning disabilities: An evidence-based evaluation. In R. Bradley, I. Danielson, & D. P. Hallahan (Eds.), *Identification of learning disabilities: Research to practice* (pp. 185–250). Mahwah, NJ: Erlbaum.
- Fletcher, J. M., Shaywitz, S. E., Shankweiler, D. P., Katz, L., Liberman, I. Y., Stuebing, K. K., et al. (1994). Cognitive profiles of reading disability: Comparisons of discrepancy and low achievement definitions. *Journal of Educational Psychology, 85*, 1–18.
- Floyd, R. G., Evans, J. J., & McGrew, K. S. (2003). Relations between measures of Cattell-Horn-Carroll (CHC) cognitive abilities and mathematics achievement across school-age years. *Psychology in the Schools, 40*, 155–171.
- Francis, D. J., Shaywitz, S. E., Stuebing, K. K., Shaywitz, B. A., & Fletcher, J. M. (1996). Developmental delay versus deficit models of reading disability: A longitudinal, individual growth curve analysis. *Journal of Educational Psychology, 88*, 3–17.
- Fuchs, D., Deshler, D. D., & Reschly, D. J. (2004). National research center on learning disabilities: Multimethod studies of identification and classification issues. *Learning Disability Quarterly, 27*, 189–195.
- Fuchs, D., Fuchs, L. S., & Compton, D. L. (2004). Identifying reading disabilities by responsiveness to instruction: Specifying measures and criteria. *Learning Disability Quarterly, 27*, 216–227.
- Fuchs, D., Fuchs, L. S., Mathes, P. G., Lipsey, M. W., & Roberts, P. H. (2001). *Is “learning disabilities” just a fancy term for low achievement? A meta-analysis of reading differences between low achievers with and without a label*. Washington, DC: Office of Special Education Programs, U.S. Department of Education.
- Fuchs, D., Mock, D., Morgan, P., & Young, C. (2003). Responsiveness-to-intervention: Definitions, evidence, and implications for the learning disabilities construct. *Learning Disabilities Research & Practice, 18*, 157–171.
- Gerber, M. M. (2005). Teachers are still the test: Limitations of response to instruction strategies for identifying children with learning disabilities. *Journal of Learning Disabilities, 38*, 516–523.
- Glutting, J. J., Youngstrom, E. A., Ward, T., Ward, S., & Hale, R. L. (1997). Incremental efficacy of WISC-III factor scores in predicting achievement: What do they tell us? *Psychological Assessment, 9*, 295–301.
- Gottlieb, J., Alter, M., Gottlieb, B. W., & Wishner, J. (1994). Special education in urban America: It’s not justifiable for many. *Journal of Special Education, 27*, 453–465.
- Hale, J. B., & Fiorello, C. A. (2001). Beyond the academic rhetoric of g: Intelligence testing guidelines for practitioners. *The School Psychologist, 55*(4) 113–139.
- Hale, J. B., & Fiorello, C. A. (2004). *School neuropsychology: A practitioner’s handbook*. New York: Guilford Press.
- Hale, J. B., Fiorello, C. A., Bertin, M., & Sherman, R. (2003). Predicting math competency through neuropsychological interpretation of WISC-III variance components. *Journal of Psychoeducational Assessment, 21*, 358–380.
- Hale, J. B., Fiorello, C. A., & Brown, L. (2005). Determining medication treatment effects using teacher ratings and classroom observations of children with ADHD: Does neuropsychological impairment matter? *Educational and Child Psychology, 22*, 39–61.
- Hale, J. B., Fiorello, C. A., Kavanagh, J. A., Hoepfner, J. B., & Gaither, R. A. (2001). WISC-III predictors of academic achievement for children with learning disabilities: Are global and factor scores comparable? *School Psychology Quarterly, 16*, 31–55.
- Hale, J. B., Fiorello, C. A., Kavanagh, J. A., Holdnack, J. A., & Aloe, A. M. (in press). Is the demise of IQ interpretation justified? A response to special issue authors. *Applied Neuropsychology*.

- Hale, J. B., Hoepfner, J. B., & Fiorello, C. A. (2002). Analyzing digit span components for assessment of attention processes. *Journal of Psychoeducational Assessment, 20*, 128–143.
- Hale, J. B., Kaufman, A., Naglieri, J. A., & Kavale, K. A. (2006). Implementation of IDEA: Integrating response to intervention and cognitive assessment methods. *Psychology in the Schools, 43*, 753–770.
- Hale, J. B., Naglieri, J. A., Kaufman, A. S., & Kavale, K. A. (2004). Specific learning disability classification in the new Individuals with Disabilities Education Act: The danger of good ideas. *The School Psychologist, 58*, 6–13.
- Herrnstein, R. J., & Murray, C. (1994). *The bell curve: Intelligence and class structure in American life*. New York: Free Press.
- Horn, J. L. (in press). Understanding human intelligence: Where have we come since Spearman? In R. Cudeck & R. MacCallum (Eds.), *Factor analysis at 100*. Mahwah, NJ: Erlbaum.
- Jensen, A. R. (1998). *The g factor: The science of mental ability*. Westport, CT: Praeger.
- Johnson, E., Mellard, D. F., & Byrd, S. E. (2005). Alternative models of learning disabilities identification: Considerations and initial conclusions. *Journal of Learning Disabilities, 38*, 569–572.
- Kaufman, A. S., & Kaufman, N. L. (2001). Assessment of specific learning disabilities in the new millennium: Issues, conflicts, and controversies. In A. S. Kaufman & N. L. Kaufman (Eds.), *Specific learning disabilities and difficulties in children and adolescents: Psychological assessment and evaluation* (pp. 433–461). New York: Cambridge University Press.
- Kavale, K. A. (2002). Discrepancy models in identification of learning disability. In R. Bradley, I. Danielson, & D. P. Hallahan (Eds.), *Identification of learning disabilities: Research to practice* (pp. 369–426). Mahwah, NJ: Erlbaum.
- Kavale, K. A. (2005). Identifying specific learning disability: Is responsiveness to intervention the answer? *Journal of Learning Disabilities, 38*, 553–562.
- Kavale, K. A., Holdnack, J. Mostert, M. P., & Schmied, C. M. (2003, December). *The feasibility of a responsiveness to intervention approach for the identification of specific learning disability: A psychometric alternative*. Paper presented at the National Research Center on Learning Disabilities Responsiveness-to-Intervention Symposium, Kansas City, MO.
- Kavale, K. A., Kaufman, A., Naglieri, J. & Hale, J. (2005) Changing procedures for identifying learning disabilities: The danger of poorly supported ideas. *The School Psychologist, 59*, 15–25.
- Kovaleski, J. F. (2002). Best practices in operating pre-referral intervention teams in Pennsylvania. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology IV* (pp. 645–655). Bethesda, MD: National Association of School Psychologists.
- Kovaleski, J. F., & Prasse, (2004). Response to instruction in the identification of learning disabilities: A guide for school teams. *Communiqué, 32*(5) insert.
- Kratochwill, T. R., Elliott, S. N., & Rotto, P. C. (1995). Best practices in school-based behavioral consultation. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology III* (pp. 519–535). Washington, DC: National Association of School Psychologists.
- Learning Disabilities Roundtable. (2002). *Specific learning disabilities: Finding common ground*. Washington, DC: U.S. Department of Education.
- Lezak, M. (1988). IQ: RIP. *Journal of Clinical and Experimental Neuropsychology, 10*, 351–361.
- Lyon, G. R., Fletcher, J. M., Shaywitz, S. E., Shaywitz, B. A., Torgesen, J. K., Wood, F. B., et al. (2001). Rethinking learning disabilities. In C. E. Finn, A. J. Rotherham, & C. R. Hokanson (Eds.), *Rethinking special education for a new century* (pp. 259–287). Washington, DC: Thomas B. Fordham Foundation.
- Marston, D. (2005). Tiers of intervention in responsiveness to intervention: Prevention outcomes and learning disabilities identification patterns. *Journal of Learning Disabilities, 38*, 539–544.
- Mastropieri, M. A., & Scruggs, T. E. (2005). Feasibility and consequences of response to intervention: Examination of the issues and scientific evidence as a model for the identification of individuals with learning disabilities. *Journal of Learning Disabilities, 38*, 525–531.
- Mather, N., & Gregg, N. (2006). Specific learning disabilities: Clarifying, not eliminating, a construct. *Professional Psychology: Research and Practice, 37*, 99–106.
- McBride, G. M., Dumont, R., & Willis, J. O. (2004). Response to response to intervention legislation: The future of school psychologists. *The School Psychologist, 58*(3), 86–91.

- McDermott, P. A., Fantuzzo, J. W., & Glutting, J. J. (1990). Just say no to subtest analysis: A critique on Wechsler theory and practice. *Journal of Psychoeducational Assessment, 8*, 290–302.
- Naglieri, J. A. (1999). *Essentials of CAS assessment*. New York: John Wiley.
- Naglieri, J. A. (2001). Cognitive Assessment System: A test built from the PASS theory. In A. S. Kaufman & N. L. Kaufman (Eds.), *Learning disabilities: Psychological assessment and evaluation* (pp. 141–177). New York: Cambridge University Press.
- Naglieri, J. A. (2003). Current advances in assessment and intervention for children with learning disabilities. In T. E. Scruggs and M. A. Mastropieri (Eds.), *Advances in learning and behavioral disabilities: Vol. 16. Identification and assessment* (pp. 163–190). New York: JAI.
- Naglieri, J. A., & Pickering, E. (2003). *Helping children learn: Intervention handouts for use in school and at home*. Baltimore: Brookes.
- National Association of School Psychologists. (2003). *NASP recommendations for IDEA reauthorization: Identification and eligibility determination for students with specific learning disabilities*. Bethesda, MD: Author.
- O'Connor, R. E., Harty, K. R., & Fulmer, D. (2005). Tiers of intervention in kindergarten through third grade. *Journal of Learning Disabilities, 38*, 532–538.
- Reschly, D. J. (2005). Learning disabilities identification: Primary intervention, secondary intervention, and then what? *Journal of Learning Disabilities, 38*, 510–515.
- Reschly, D. J., & Hosp, J. L. (2004). State SLD policies and practices. *Learning Disability Quarterly, 27*, 197–213.
- Reynolds, M. C., Wang, M. C., & Walberg, H. J. (1987). The necessary restructuring of special and regular education. *Exceptional Children, 53*, 391–398.
- Roberts, R. D., Goff, G. N., Anjoul, F., Kyllonen, P. C., Pallier, G., & Stankov, L. (2000). The Armed Services Vocational Aptitude Battery (ASVAB): Little more than acculturated learning (Gc)?! *Learning and Individual Differences, 12*, 81–103.
- Scruggs, T. E., & Mastropieri, M. A. (2003). On babies and bathwater: Addressing the problems of identification of learning disabilities. *Learning Disability Quarterly, 25*, 155–168.
- Scruggs, T. E., & Mastropieri, M. A. (2005). Issues in the identification of learning disabilities. In T.E. Scruggs, & M. A. Mastropieri (Eds.), *Identification and assessment: Advances in learning and behavior disabilities* (pp. 1–36). Oxford, UK: Elsevier Science.
- Semrud-Clikeman, M. (2005). Neuropsychological aspects for evaluating learning disabilities. *Journal of Learning Disabilities, 38*, 563–568.
- Sheridan, S. M., Welch, M., & Orme, S. F. (1996). Is consultation effective? A review of outcome research. *Remedial and Special Education, 17*, 341–354.
- Shinn, M. R. (1998). *Advanced applications of curriculum-based measurement*. New York: Guilford Press.
- Speece, D. L. (2005). Hitting the moving target known as reading development: Some thoughts on screening children for secondary interventions. *Journal of Learning Disabilities, 38*, 487–493.
- Speece, D. L., & Case, L. P. (2001). Classification in context: An alternative approach to identifying early reading disability. *Journal of Educational Psychology, 93*, 735–749.
- Stanovich, K. E. (1999). The sociopsychometrics of learning disabilities. *Journal of Learning Disabilities, 32*, 350–361.
- Stanovich, K. E., & Siegel, L. S. (1994). Phenotypic performance profile of children with reading disabilities: A regression based test of the phonological core variable difference model. *Journal of Educational Psychology, 86*, 24–53.
- Tilly, W. D., III, Reschly, D. J., & Grimes, J. (1999). Disability determination in problem-solving systems: Conceptual foundations and critical components. In D. Reschly, W. D. Tilly III, & J. Grimes (Eds.), *Special education in transition: Functional assessment and noncategorical programming* (pp. 285–321). Longmont, CO: Sopris West.
- Vaughn, S., Linan-Thompson, S., & Hickman, P. (2003). Response to instruction as a means of identifying students with learning/reading disabilities. *Exceptional Children, 69*, 391–409.
- Witt, J. C., Gresham, F. M., & Noell, G. H. (1996). What's behavioral about behavioral consultation? *Journal of Educational and Psychological Consultation, 7*, 327–344.