Integrating Response to Intervention and Severe Discrepancy in Specific Learning Disabilities Determination: The Best of Two Worlds*

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Introduction

Like many published recently, an article in the September 2005 issue of the Utah Special Educator, *Understanding Responsiveness to Intervention in Learning Disabilities Determination* (Herbert – Introduction, Mellard – Text, 2005), levels criticism at the traditional severe discrepancy (SD) approach to classifying students with specific learning disabilities (LD). At the same time, it promotes the virtues of an alternative model, response to intervention (RtI). This paper is intended to expand the discussion by reviewing potential strengths and weaknesses of both models and demonstrating how the strengths of each can be integrated into a referral and assessment model that best serves students. Further and in light of proposed regulations to accompany H.R. 1350, the Individuals with Disabilities Education Improvement Act 2004 (IDEIA 2004, Assistance to States for the Education of Children with Disabilities, 2005), it is likely that district regular and special education personnel will need to cooperate in implementing RtI prior to or as part of the special education referral process. It is also likely that special education personnel will be required to choose from among SD, RtI, and other potential models how they will qualify students as LD. By comparing and contrasting the options this paper hopes to inform that decision-making process for special education personnel.

The Up Side to RtI

Traditionally, in Utah and many other states, regular education is required to provide pre-referral interventions before referring students to special education. Such interventions reportedly range from, "called home and no one answered," to "had a parent conference," to more systematic attempts to remediate low achievement.

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Proponents of RtI recommend upping the ante for regular education and requiring it to meet high standards for intervention before students are provided special education services. This sentiment is reflected in federal regulations proposed to accompany IDEIA 2004, (Assistance to States for the Education of Children with Disabilities, 2005). The regulations propose that special education qualification teams for students suspected of having LD consider:

> … data that demonstrates that –
> (1) Prior to or as part of the referral process, the child was provided appropriate, high-quality, research-based instruction in regular education settings … including that the instruction was delivered by qualified personnel … (Assistance to States for the Education of Children with Disabilities, 2005, p. 35864).

Although details vary, typically, RtI models are described as tiered. Tiered interventions may range from high-quality regular education instruction to small group instruction to more intensive interventions. Emphasis is also placed on interventions that are research-based and verification that they are delivered with fidelity (Allison, 2005; Herbert – Introduction, Mellard – Text, 2005; Reschly, 2003). Students who fail to achieve adequately under procedures or intensity at one tier are moved to the next and the next until achievement improves or it is decided that the next step should be consideration of special education.

All of the above is laudable. Students who are struggling to achieve should be provided high quality intervention before special education is considered. This should allow many students to succeed academically and to avoid the stigma of disability and special education. At the same time, it should decrease referrals to special education and preserve precious special education resources for students who are truly disabled.

RtI Difficulties

Expected/Unexpected Low Achievement Distinction

Working through tiers of progressively more intensive intervention and failing at every tier can identify students who have low achievement. It is unlikely to specifically identify students with LD. Students may have low achievement for a number of reasons including (1) disabilities other than LD, e.g. hearing impairment, mental retardation, etc., and (2) environmental, cultural, or economic disadvantage. Even if these students are removed from the pool of low achievers, it will still contain students with expected low achievement and students with unexpected low achievement. Traditionally, students with expected low achievement are those who have low intelligence and who achieve commensurate with their intelligence. These students have not been considered to have disabilities and have not been qualified to receive special education services. Students with unexpected low achievement, those whose achievement is far below what would be predicted from their intelligence or, stated another way, who have a severe discrepancy

between aptitude (intelligence) and achievement have traditionally been classified as LD and have been qualified to receive special education services.

Under the traditional SD model for LD qualification, the distinction between students with expected and unexpected low achievement is important. RtI proponents would do away with the distinction and provide special education services to students with both expected and unexpected low achievement. A critical issue is whether or not this is advisable. If there are good reasons to maintain the distinction, then it makes sense to retain the SD model. If there are not, then, perhaps it makes sense to redefine LD as low achievement, to drop the SD model, and rely on RtI to identify students who will receive special education. Doing so would totally redefine LD in the public education realm. It is also important to recognize that SD versus RtI is not necessarily an either or choice. It is perfectly possible, and perhaps desirable, to implement RtI as part of the pre-referral/referral process and then to apply a SD discrepancy model to students who do not respond to the interventions. Integrating the two models in this way would (1) offer the advantages of RtI including decreased special education referrals and increased numbers of students achieving in regular education and (2) preserve special education for those students with unexpected low achievement who have traditionally been served. Students with expected low achievement would not be identified as disabled but would be supported by regular education.

Fletcher and his colleagues have argued that for students with low reading achievement, the expected/unexpected low achievement distinction is unimportant (Fletcher, Lyon, Barnes, Stuebing, Francis, Olson, Shaywitz, and Shaywita, 2002). They posit that both groups show similar growth in reading over time, have similar prognoses, and show similar response to treatment. Although a complete review of the literature is not possible here, we examine one often cited study, Francis, Shaywitz, Stuebing, Shaywitz, and Fletcher (1996), in detail to illustrate methodological pitfalls that make such conclusions premature. Perhaps significant for Utahans, this research was cited by Denton (2005), a keynote speaker at a tiered instruction workshop sponsored by the Utah State Office of Education and the Utah Personnel Development Center and held in Provo in June 2005, as providing the rationale for an RtI LD classification model. In any event, Francis, et al (1996) identified a large prospective sample of Connecticut kindergarten students and administered reading achievement and intelligence tests periodically over a nine year period. Based on the data, they developed growth curves for children with normal reading achievement (above the 25th percentile), low reading achievement (below the 25th percentile), and discrepant reading achievement (reading achievement 1 standard error of measurement (SEM) below that predicted from IQ). Growth curves for the low and discrepant groups were consistently below those of the normal group and equal to each other. The results are used to argue that there is no difference between low achieving and discrepant students, that severe discrepancy measurement is unnecessary, and that all low achieving students should receive special services. However, there are problems with the study (and others making similar claims) that render their conclusions premature if not simply wrong. Following are a few:

1. The sample was all children in 2 randomly selected kindergarten classes in 12 communities. The population of Connecticut was not described and the representativeness of the sample is questionable.

2. Fourteen percent of the sample was lost to attrition.

3. Another six percent of students in the sample appear to have been dropped from the analysis because they did not fit the analysis.

4. The difference between only two groups, defined in a particular way, was tested, low achievers (below the 25th percentile) vs. discrepant achievers (1 SEM below expected achievement). Groups could have been defined in many other ways that may have yielded different results. For example, low achievers defined as below the 20th percentile vs. discrepant achievers defined as 2 SEM below expected achievement. Parametric studies are needed to resolve the question.

5. There was no evaluation of whether severe discrepancies were due to disabilities other than LD or to disadvantage.

6. It is likely that the discrepant students received special education while the low achievers did not. Although it was not discussed, if that is the case, the groups may well have differed if the discrepant students had not received special education.

7. When low achievers were compared with discrepant achievers whose achievement was below the 25th percentile (a subgroup of discrepant achievers) there were significant differences between the two groups. This is important because it is discrepant achievers with below average achievement that have traditionally been served by special education.

Evidence such as this hardly provides a strong rationale for abandoning the SD qualification model in favor of an RtI model as Fletcher and his colleagues recommend. On the contrary, it suggests that preserving the expected/unexpected (SD) low achievement distinction is important. The thesis of the present paper is that both SD and RtI have important roles to play in identifying students as LD.

A comprehensive review of the reading literature by the National Reading Panel (2000) also informs the decision as to whether to keep the expected/unexpected low achievement distinction. Following its review, this blue ribbon panel concluded:

> An important question is whether students with learning disabilities have distinctive instructional needs and whether they benefit from instructional techniques that are different from those that are optimal for other low achieving (non-disabled) students. The panel was able to address this question with respect to phonemic awareness and phonics instructional programs and techniques. It found that both types of students benefit from

> phonemic awareness and phonics instructional programs and techniques. Because of the limited amount of research available, the panel could not answer this question with respect to instructional programs and techniques aimed at developing reading fluency and comprehension. These important comparisons should be the focus of future research. (National Reading Panel, 2000, p. 20)

Torgesen, Wagner, and Rashotte (1997), based on a review of literature and their own original research, reached conclusions similar to the National Reading Panel. They concluded (1) there is a group of low achieving students whose word reading skills are improved by phonological awareness and phonetics instruction (2) such instruction does not appear to improve orthographic reading and reading comprehension, and (3) there is a subgroup of low achievers, comprising approximately two to five percent of the population who have traditionally been defined as LD, who do not respond to phonemic awareness and phonics instruction and for whom we have much to learn about teaching.

Taken together, the available data suggest there are similarities and differences in how students with expected and unexpected low achievement learn to read and that the differences are an important area to study. Continued implementation of a SD model would facilitate such a research effort while still allowing students to benefit from the positive aspects of RtI during the pre-referral/referral period.

Other Concerns

Despite the advantages of RtI, there are also important questions educators will need to address as they consider implementing RtI models. Many of these have been discussed by Scruggs, Mastropieri, and Gerber (Gerber, 2003; Mastropieri, 2003; Scruggs, 2003; Scruggs & Mastropieri, 2002). They include:

1. Questions about the feasibility of implementing an RtI model across age levels. Proponents have generally focused on the primary grades. There has been little discussion regarding the feasibility and appropriateness of RtI at higher grade levels.

2. Questions of implementing RtI with technical adequacy, e.g. standardized implementation of interventions and curriculum based measurement, establishing justifiable cut-points, etc.

3. Questions about regular education's commitment. Regular education will need to play a crucial role in RtI implementation and it is unclear that it understands the RtI debate much less whether it will be willing to adopt and fund it on a continual basis.

4. Questions about what qualifies as scientifically-based, high quality instruction and who decides what qualifies. RtI proponents have tended to focus on reading instruction in the primary grades, and as discussed above, there are important

questions that still need to be answered. Further, there has been little discussion regarding higher grades and achievement areas other than reading including mathematics calculation, mathematics reasoning, oral expression, written expression, and listening comprehension.

5. Questions surrounding the training of regular educators to implement RtI, and the costs of implementation. Focusing just on the nations 255,000 plus K-3 teachers and training in reading instruction, Gerber estimates the costs to be well in excess of two billion dollars.

To this list might be added concerns about the cost of securing scientifically-based, high quality instructional materials. Another issue is how special education LD qualification criteria will integrate with standard mental health diagnostic criteria. Currently, criteria listed in the Diagnostic and Statistical Manual of Mental Disorders: Fourth Edition Text Revision (DSM-IV, American Psychiatric Association, 2000) follow a SD model.

Summary RtI

RtI has the potential to improve the pre-referral intervention process and thus improve the achievement of some students, decrease the number of students referred to special education, and identify students who are low achieving. It likely falls short as a sole methodology for assessing LD because it does not discriminate students with expected low achievement from students with unexpected low achievement. Research cited by RtI proponents who believe the expected/unexpected low achievement distinction is unimportant has methodological problems that make such a conclusion premature at best. Other researchers, including the National Reading Panel, present evidence that there are important differences between students with expected and unexpected low achievement and that the distinction is important and should be maintained. Adoption of RtI as a sole LD assessment model would eradicate the expected/unexpected low achievement distinction and totally redefine LD in the public education realm. Continued use of SD in combination with RtI will preserve the distinction helping to insure that differences between the two groups continue to be defined and that appropriate differential interventions are developed for the two populations.

SD Criticisms

This section presents often cited criticisms of SD models for LD classification and describes how those criticisms can be addressed. Criticisms include (1) that under a SD models students can be LD in one state/district and not LD in another, (2) that SD is a wait to fail model (3) that SD models are not reliable or valid, and (4) that SD models do not inform instruction.

SD Origins

Implementing regulations for the Education of All Handicapped Children Act 1975 (PL 94-142, Federal Register, 1977, see Scruggs, 2003) provided that LD qualification

> is made based on (1) whether a child does not achieve commensurate with his or her age and ability when provided with appropriate educational experiences, and (2) whether the child has a severe discrepancy between achievement and intellectual ability in one or more of seven areas relating to communication skills and mathematical abilities. (see Scruggs, 2003)

As Reynolds (1984-85) has explained, the SD criterion was established because:

> When the rules and regulations for PL 94-142 were being developed, many experts testified in the Office of Education hearings, wrote numerous papers, and were convened for discussion and debate. When the results of these hearings, papers, and debates were examined, the reason for the discrepancy emphasis of the PL 94-142 definition becomes clear. **The only consensus of this "thing" called learning disability, was that it resulted in a major discrepancy between what you expect academically of learning disabled children and the level at which they were actually achieving**. (Reynolds, 1984-85, p. 452, bold added for emphasis)

Thus from the beginning of federally mandated special education, LD has been defined as unexpected low achievement. Unexpected low achievement is determined by measuring a SD between aptitude (intelligence) and achievement. The unexpected low achievement/SD construct has been enduring while there has been considerable debate surrounding how to measure SD (Baer & Althouse, 2000: Cone & Wilson, 1981; Reynolds, 1984-85). Although consideration was given to establishing a national formula for SD measurement, consensus could not be reached and in the end states were left to adopt their own measurement criteria.

Because States (and In Some Cases School Districts) Employ Different SD Formulas, Students Can Be LD in One State (District) and Not Another

Failure to adopt a national SD standard did result in states adopting different formulas. Many of these have been indefensible from a measurement perspective; however, very defensible regression formulas have been available for some time (Baer & Althouse, 2000; Reynolds, 1984-85). Where states/districts adopt different formulas, of course some students will be qualified as LD in one state/district and not others. This can hardly be blamed on the SD model itself. It results from the failure to adopt a national standard, and federal and state administrative decisions about how to apply the model.

Utah has been a leader in taking a reasonable approach to SD measurement. In 1989 it adopted the SD formula recommended by a United States Department of

Education, Special Education Programs Work Group on Measurement Issues in the Assessment of Learning Disabilities (Reynolds, 1984-85). This formula remained the standard until 1999 when it was modified to incorporate a number of improvements (Baer & Althouse, 1999). In Utah, SD has been measured in a consistent fashion from district to district using a statistically and legally defensible formula. The process has been aided by establishment of the LD Test Selection Committee which reviews intelligence and achievement tests to determine their technical adequacy for use in qualifying students as LD. It has also been aided by the development of the Estimator software program which incorporates data on tests recommended by the LD Test Selection Committee and makes the necessary calculations.

Severe Discrepancy is a "Wait to Fail Model"

The SD model has been criticized for not identifying students in kindergarten and primary grades as LD because they have not been in school long enough for their achievement to fall far enough behind to show SD. However, consider:

1. Some children in the early grades do show a severe discrepancy and do qualify for special education as LD.

2. Severe discrepancy formulas establish cut-off criteria which regulate the number of students qualified as LD. In Utah, it is set at 93 percent confidence that there is a severe discrepancy, which identifies about six percent of the school age population. This is by design. Some years ago when Utah changed from the United States Department of Education, Special Education Programs Work Group on Measurement Issues in the Assessment of Learning Disabilities formula to a modification of that formula, the Estimator developers were told to set the cut-off criterion so that the new formula would identify six percent of the population just as the old formula had. Given a SD model, if a state wants to identify more students as LD it can ease the cut off criterion; if it wants to identify fewer it can make it more stringent. The SD decision model (and all others for that matter) gets caught between state and federal pressures to identify fewer students as LD and regular education/referring teacher pressures to qualify more students "because they need help." How many students in the early grades are identified and served as LD is a function of the administrative decision about where to set the severe discrepancy cut-off. It makes no sense to blame the procedure itself for failing to identify more students in the early grades.

3. SD models can be improved by developing/adding achievement measures in the early grades that are more sensitive. For example, in the latest revision of Estimator, measures of phonological awareness were added under basic reading skills. This was because recent research has taught us that phonological awareness is an important early basic reading skill. Adding these measures should allow for more sensitive measurement of reading achievement in the early grades and identification of students who in the past might not have been identified until later.

4. SD models posit that students must have a disability before receiving special education, just like those employed for other special education categories. Under such models we identify a student with a disability and then provide special education. If a student doesn't meet the classification criteria he/she is not eligible for special education. Often referring teachers/regular educators are disappointed and complain that SD procedures prevent students from getting help. But (1) finding that a student doesn't have a disability should be cause for celebration, and (2) the SD requirement does not preclude helping struggling students who do not exhibit one, i.e. it does not require anyone to "wait to fail" and it makes no sense to blame the procedure. Indeed, much of what is being recommended by RtI proponents is directed at mobilizing regular education not to wait until students fail. **Further, it makes no more sense to conclude, solely on the basis of low achievement, that students are LD than it would to conclude they are mentally retarded or deaf or autistic, etc. Low academic achievement is a given in special education qualification. Additional criteria are needed to determine disability category.**

5. As discussed earlier, current research suggests that two to six percent of children who have traditionally been identified with reading LD do not respond to any known intervention. It is not clear that these students will benefit from early identification and intervention. Time and research will tell, but it is possible that these students will benefit more from compensatory strategies (e.g. books on tape, screen readers, etc.) than remedial strategies (e.g. monumental efforts to teach reading that yield only minimal improvement), particularly at the higher grades.

6. Labeling SD models as "wait to fail" attaches an emotionally charged phrase to the construct which detracts from dispassionate consideration of its strengths and weaknesses. Such labels may cause some to "jump on the band wagon" without thinking the issues through to avoid association with promoting "waiting for children to fail". However, it is no more appropriate to label SD "wait to fail" because some feel it identifies too few students as in need of remediation then it would be label RtI "rush to fail" because some fear it will identify too many students as in need of remediation (National Research Center on Learning Disabilities, 2003). Emotionally charged labels help nothing.

SD Models are Not Reliable or Valid

The best mathematical formulas for measuring SD consider and control for measurement error and are reliable. Given any pair of intelligence and achievement test scores, when applied with fidelity, the formulas will always yield the same result. As discussed earlier, many formulas are inadequate from a measurement perspective and are thus invalid. However, regression formulas that provide valid measurement of SD and identify a population of students with unexpected low achievement, i.e. LD, are available.

SD Models Do Not Inform Instruction

SD models were never intended to inform instruction; they were intended to help identify students who have LD. Once identified, there are plenty of other procedures, (criterion referenced testing, classroom observations, etc.) that can be completed to inform instruction. Criticizing SD procedures for not informing instruction makes no more sense than criticizing an audiological examination that identifies a student as deaf for not specifying how to teach deaf students, or criticizing a screwdriver for not being able to hammer a nail.

Considerations in Adopting a LD Qualification Model

Reevaluations

Many students have already been qualified for special education using a SD model. If the model is abandoned altogether, many of these students may not qualify under newer untested qualification models.

LD is What We Define It to Be

In a very real sense, LD is what we define it to be. Traditionally, LD has been defined as unexpected low achievement (SD). RtI models would define it as low achievement by students who do not respond to research-validated interventions. Given that agreement could be reached on what constitutes research validated interventions (no small task), this model would add non-discrepant low achievers to the severe discrepant population already served under the LD category. This would increase the number of students served in special education as LD unless the interventions reduce the number of students that end up in special education (which is the hope).

The proposed regulations to accompany IDEIA 2004 (Assistance to States for the Education of Children with Disabilities, 2005) also suggest many other criteria for qualifying students as LD. These include (1) a pattern of strengths and weaknesses in performance, achievement, or both, and (2) a pattern of strengths and weakness in performance, achievement or both, relative to intellectual development. Possibilities here are almost infinite and agreeing on what patterns define LD will be quite a task. Further, although not defined in the regulations, it is likely that patterns of achievement and performance would be defined by patterns of intelligence and achievement test subtest scores. Many such subtest scores are based on limited numbers of items and do not meet minimal reliability and validity criteria (Waktins, 2003; Watkins & Glutting, 2000). Finally, the proposed regulations suggest alternative research-based procedures as still other models for LD classification. Whatever these might be, they would add to the number of ways students might be qualified.

The proposed regulations suggest that LD could be defined in many ways. This has the potential for creating great confusion. Lacking a single national SD formula, we have for decades been dealing with the issue of students being classified LD in one

state/district but not another. Allowing many models for LD qualification will further compound this problem. It will also create great problems for research. Just what population are we studying? Further, if LD is allowed to be many things, it runs the risk of becoming everything and nothing. The category will be meaningless and the number of students identified will be capped only by administrative decision.

Summary and Conclusions

1. RtI holds great promise as a pre-referral intervention system that can decrease special education referrals and increase the number of students achieving in regular education. However, there are important questions that need to be addressed as implementation is considered. These include questions pertaining to feasibility of implementation across grade levels and achievement areas, technical adequacy, regular education's understanding and commitment, defining what scientifically-based, high quality instruction is, training and materials costs, and integration with standard mental health diagnostic criteria.

2. Traditionally, LD has been defined as unexpected low achievement and measured via formulas that calculate if there is a severe discrepancy between aptitude (IQ) and achievement. RtI models do not discriminate students with unexpected low achievement from those with expected low achievement. Some RtI proponents believe that the distinction is unimportant, however, research supporting such a position has methodological problems that make such a conclusion premature at best. Others, including the National Reading Panel, believe there may be important differences in how students with unexpected versus expected low achievement learn and that it is important to preserve the distinction for study.

3. Criticisms of SD qualification models include that they identify different students as LD from state to state and district to district, are "wait to fail" models, are not reliable or valid, and do not inform instruction. Each of these criticisms can be addressed and, despite them, there are reliable, valid SD models that identify a population of students showing unexpected low achievement that have traditionally been considered LD.

4. Proposed regulations for IDEIA 2004 would add patterns of strengths and weaknesses in performance, achievement, or both, and patterns of strengths and weakness in performance, achievement or both, relative to intellectual development as well as alternative research-based procedures to SD and RtI models for qualifying students as LD. Such a proposal runs the risk of making LD everything and nothing, and increasing the number of students qualified as LD

5. Students might best be served via a LD qualification model that integrates the best of RtI and SD. RtI implemented as pre-referral intervention may decrease special education referrals and increase the number of students achieving in regular education. For students who do not respond to RtI interventions, applying reliable, valid SD qualification criteria will preserve the important unexpected/expected

low achievement distinction needed to define research samples, help assure that limited special education resources go to student who are truly disabled, and provide continuity for students who have been qualified under SD models and need to be reevaluated.

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