

# 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

Margo A. Mastropieri and Thomas E. Scruggs

## Abstract

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This paper provides a response to the thoughtful paper presented by Gerber in this issue and at the National Research Center on Learning Disabilities Responsiveness-to-Intervention Symposium in Kansas City with guidance from five major questions posed by the organizers of the symposium. Gerber's paper provides interesting perspectives regarding the alternative approach to identification of learning disabilities (LD) or the "response to intervention" (RTI). Gerber raises questions and concerns about the theoretical and practical aspects of a response-to-intervention model on either a small- or large-scale basis. Guiding questions for this response include an examination of (a) changing roles of teachers and diagnosticians; (b) responsibility for fidelity of treatment implementation; (c) applications in secondary settings; (d) consistency of implementation from local to state to national levels; and (e) differentiation of LD from other disabilities. An alternative to both RTI and present procedures is proposed. Conclusions are discussed with respect to existing research-based evidence.

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The process of identifying students with learning disabilities (LD) has come to the forefront of a national discussion. Recently, the Office of Special Education Programs at the U.S. Department of Education convened a series of working groups, LD Summits, and symposia to discuss the issues for identifying individuals with LD (see Bradley, Danielson, & Hallahan, 2002, for a summary). These discussions have centered on replacing the current procedures for identifying individuals with LD with a response-to-intervention (RTI) model. As Keogh (2002) aptly stated, "LD has been controversial, characterized more by disagreement than agreement" (p. xxi), and the current discussion presents compelling arguments from various positions.

During the symposium, a broad array of issues surfaced regarding the soundness and feasibility of the RTI construct and possible consequences

surrounding the eventual scalability of this identification model. In light of the issues raised by some of the symposium presenters (e.g., Gerber), the guiding questions posed by the National Research Center for Learning Disabilities and organizers of this symposium are now addressed. The remainder of this paper presents some responses to those questions. (For additional discussion of these and related issues, see Al Otaiba, 2003; Scruggs & Mastropieri, 2002, 2003b, 2003c; Speece, Malloy, & Case, 2003.)

## Guiding Questions

### *How Will the Roles of Teachers and Diagnosticians Change Given the Significant Demands of RTI?*

The question of how the roles of teachers and diagnosticians will change

given the significant demands for implementing RTI is a critically important question, and the answer remains unclear at present. Present conceptualizations of RTI are varied and ambiguous at best with respect to the specific roles of teachers and diagnosticians. For example, Reschly (2003) presented a four-tier model of RTI and acknowledged that the roles of teachers and diagnosticians would have to change but neglected to provide sufficient details on exactly which personnel would have responsibilities for the various components of instruction. General educators appear to have primary responsibility for all aspects of instruction, monitoring of instruction, and moving students among Tiers 1, 2, and 3, while special educators appear to assume primary responsibility for students in Tier 4 (or Tier 3, "depending on how general and special education are defined"; Reschly, 2003, p. 14). The precise roles of diagnosticians or school

psychologists are even less clear, and although Reschly refers to a problem-solving model of RTI that has been implemented in Hartland, Iowa, as a potential model (Grimes, 2002), he provides little guidance on the specific nature of the roles. The Hartland model contains three tiers and is based on a problem-solving model (Grimes, 2002). To date, however, the Hartland model has undergone little rigorous evaluation of its effectiveness (Fuchs, 2002).

Gerber (2003) refers to the standard treatment protocol aspect of some RTI models and implies that standardized instruction will occur in general education classes. He assumes that general educators will not only use scientifically based methods and materials of instruction but also be able to standardize their presentations to the degree that instruction will be constant across classes, which implies that standard protocol treatment of RTI will be implemented systematically across kindergarten through Grade 12 and in all curriculum areas across the nation.

Even with this assumption being met, it is unclear exactly what the roles and responsibilities will be for all general and special educators and diagnosticians or school psychologists. It may be safe to assume that general educators will be responsible for delivering the scientifically based instruction in Tier 1. However, at present, general educators do not possess the background knowledge or the skills to implement an RTI model even in beginning reading. Given these assumptions, we must find answers to the following questions:

- Will we have a standard protocol for instruction across all curriculum areas and grade levels for Tiers 1 and 2 in the model and a problem-solving model for Tiers 3 and 4?
- Will there be a problem-solving model across all tiers?
- Will there be a standard treatment protocol across all tiers?
- Who prepares all general education teachers to deliver instruction using this scientifically based approach?
- Does this happen in university teacher preparation programs? Will school districts provide extensive in-service education to all current teachers?
- Where are the multiple exemplars of this type of instruction from Tier 1 to Tier 2 to Tier 3 and to Tier 4 happening in kindergarten through Grade 12 across all curriculum areas?
- What does 7th-grade science instruction at Tier 1, Tier 2, Tier 3, and Tier 4 look like? What does 9th-grade algebra instruction at Tier 1, Tier 2, Tier 3, and Tier 4 look like? What does 5th-grade social studies instruction at Tier 1, Tier 2, Tier 3, and Tier 4 look like? What does 11th-grade English at Tier 1, Tier 2, Tier 3, and Tier 4 look like?
- What are the teachers doing?
- What are the students doing?
- How many teachers are in the room with how many students?
- Does the general educator provide Tier 1, Tier 2, and Tier 3 instruction simultaneously within a single classroom?
- What are the curriculum materials and instructional methods at each of the four tiers that have scientific evidence supporting their efficacy?
- Who monitors whether general educators teach this way?
- How long will students remain in a tier?
- What are the “tests” teachers will use to determine whether a student remains in a tier?
- How is a determination of “nonresponsiveness” to intervention made? For example, will all teachers use a standard cutoff score on classroom tests?
- What is the record-keeping system teachers use?
- Who has the ultimate decision-making power to move students up and down the tier system?
- What exactly are special educators doing and when?
- What exactly are diagnosticians and school psychologists doing and when?
- When are parents involved in this process?
- What do teachers do about the child who learns but requires a very slow pace of instruction with additional practice activities and multiple exemplars before moving to the next new concept?

RTI presents challenges for the changing roles of general and special education teachers as well as diagnosticians and school psychologists. Before these challenges can be met, the field needs to fully operationalize what is meant by the RTI model and provide answers to questions such as the ones above.

### *Who Is Responsible for Ensuring That the Procedures Are Implemented Fully and with Fidelity—Special Educators or General Educators?*

Who has the ultimate responsibility for ensuring that RTI procedures are implemented fully and with fidelity is a question of utmost importance and for which answers are presently unclear. A very significant question that arises is whether the financial burden for RTI will ultimately be borne by general or special education. Lyon et al. have suggested that “the idea that special education funds can be used for early identification and prevention is critical” (2001, p. 281). Special education funds, never fully provided by the federal government, are too limited to be employed in general education prevention efforts of this magnitude. If special education resources are expended to identify and provide remedial services to all students below the 25th percentile in reading achievement (i.e., 25% of the entire student population), will sufficient funds remain available to support students with lower incidence disability conditions, such as osteogenesis imperfecta, deaf-blindness, or severe intellectual disability?

### *Given That a Significant Number of Students Are Currently Identified at the Middle and Early High School Years, How Will RTI Procedures Apply in Those Settings?*

The question of application of RTI at the middle and early high school years as a procedure to identify students with LD is significant and remains unclear at present. The models as presented currently provide little concrete evidence of successful implementation even at the beginning reading level. Reschly simply states that his four-tier RTI model will work the same across grade levels. Other researchers have examined various RTI models. For example, Vaughn (2003) presented a model of implementation based on general education instruction followed by 10 weeks placement in secondary reading instruction for students who were not responding. Fuchs (2003) presented a model of general education instruction in early reading including the use of Peer Assisted Learning Strategies (PALS) followed by PALS Plus for those students who were responding sufficiently to the first tier of reading instruction. Both of these models are struggling with the exact configuration of general education instruction and the design of effective secondary instruction for those students who are considered "nonresponders" in the first tier. Both models are to be commended for attempting to provide some details on possible RTI models. However, neither model, nor others seen presently, have even begun to address what happens in the RTI model at the middle and secondary school levels.

Mode of instruction at the middle and secondary levels often varies from that used at primary and elementary grade levels. We have been studying middle and high school science and social studies classes for a number of years (Mastropieri & Scruggs, 2000; Scruggs & Mastropieri, 2003a, 2004a, 2004b). We have observed little variation in instructional format across

classes and have identified the following as typical instructional components:

- lectures by the teacher to the entire class, with class discussion as the major mode of instruction;
- rapid pace of teacher presentations including vast amounts of new content on a daily basis;
- rapid pace through the adopted textbook;
- laboratory or project-based activities interspersed throughout instruction, during which students frequently work with partners (e.g., in high school chemistry and middle school science classes, laboratories are scheduled very frequently; in middle and high school social studies classes, project-based activities are scheduled much less frequently than are laboratory activities in science classes);
- minimal class review or additional practice activities;
- independent class activities frequently consist of reading text materials and writing answers to text-based questions;
- as content level increases, so do demands for more conceptually oriented and often abstract learning;
- increased demands for student acquisition of broad, shallow, verbally based knowledge as assessed on high-stakes tests; and
- rapid pace of instruction, apparently driven solely by the end-of-year high-stakes standardized achievement testing without regard to any learning needs of any students.

Any model of RTI used to identify students with LD must take into account the differences in learning needs and instructional demands placed on students in the middle and secondary schools and the increased pressures associated with high-stakes testing (Fraser-Blunt, 2000). Of utmost importance at the secondary level is the pace and

level at which instruction proceeds to meet the instructional demands connected with high-stakes testing. RTI conceptualizations for identifying individuals with LD must consider these issues in addition to issues with models of beginning reading instruction.

### *How Will Issues of Consistency of Decision Making Be Ensured From School to School, District to District, and State to State?*

This question is central to any national adoption of a process for identification of LD. The answer is uncertain at present and awaits clarification prior to any large-scale implementation. The country presently experiences great difficulties with implementing provisions of the No Child Left Behind Act because of a lack of any consistent measures or standards from state to state. One recent example reported in the *St. Petersburg Times* (July 31, 2003, p. 16A) illustrates this issue:

Gov. Jeb Bush says that Gulfport Elementary School did so well academically last year it is due for a state bonus check of roughly \$40,000.

President George W. Bush says Gulfport Elementary School has performed so poorly that its parents must be allowed, less than a week before school begins, to pull their children out.

Such inconsistencies in application of cutoff scores on standardized tests illustrate the conflicts that exist between state and federal applications of standards. These inconsistencies may provide a glimpse at issues with RTI as a method of identifying students with LD using curriculum-based or teacher-developed measures.

Another illustration of the difficulties states are encountering using standardized testing was recently reported in the *New York Times* (Arenson, 2003). This article reported on issues the state of New York was having with setting standards for passing the Regents Math A exam, which is required

for graduation of all students in the state. Last year 61% of the students passed this exam. However, this year only 37% of the students passed. Such a large decline in passing rate resulted in the state loosening its testing requirements. This clearly demonstrates that states are currently grappling with setting standards with standardized tests. Again, the issue of using non-standardized procedures associated with RTI for identifying students with LD remains problematic until issues of standardization, use of cutoff scores, and validity can be fully addressed.

### *How Will LD Be Differentiated From Other Disability Conditions If a Cognitive Measure Is Not Used as Part of the Assessment?*

Students with mental retardation, emotional or behavioral disorders, attention-deficit/hyperactivity disorder, or generic low achievement also exhibit low responsiveness to interventions, yet they are not considered to have LD. Students in each of these areas may not respond to intervention, but for different reasons. Such a problem poses this question: If RTI cannot discriminate, how can it classify? Specific categories may be of less interest with an RTI model, but this has not been articulated clearly to date. Further, an argument can be advanced that it is important to maintain categories for purposes of advocacy, further research, federal and state funding, and legislation.

The question "How will LD be differentiated from other disability conditions if a cognitive measure is not used as part of the assessment?" is vital to the conceptualization of LD but has not been adequately answered to date. Gerber, in this issue, suggests that the current conceptualization of RTI will be unable to diagnose LD. He provides evidence of neurological bases of LD and suggests that RTI lacks the ability to provide clear identification of LD. Several unresolved issues remain regarding the use of RTI to identify chil-

dren with LD and to differentiate them from individuals with other disabilities.

The issues raised by Gerber point to a more fundamental concern. Does RTI preserve the *contemporary conceptualizations* of LD? Characterizations of LD have typically included several of the following conceptualizations (see, e.g., Keogh, 1994; Wong, 1996), which should be included if the present character of LD is to be preserved:

- *Unexpected low achievement relative to aptitude or ability.* This unexpected underachievement is at the heart of many conceptualizations of LD. That is, students fail to make acceptable progress in school, but the reason for this failure is not readily apparent.
- *Intraindividual differences.* The student exhibits a pattern of strengths and weakness that presumably contribute to the "unexpected underachievement."
- *Presumed processing deficit.* The implication of the "unexpected underachievement" consideration is that the problem is not primarily due to external factors but resides within the child and has to do with cognitive processing efficiency.
- *Average or above-average intelligence.* Students with LD are thought to be of at least adequate intelligence for accomplishing the academic tasks being presented. Deficits in intelligence are not thought to be a cause of LD.
- *Patterns of relative strengths and weaknesses.* Students with LD are thought to exhibit areas of relative strength. This consideration contributes to the "unexpected underachievement" criterion and is also thought to be useful in planning interventions.
- *Multifaceted nature of LD.* An important issue to consider is whether RTI can be used effectively to address the *multifaceted nature* of LD (Beitchman, Cantwell, Forness, Kavale, & Kauffman, 1998). That is, if LD is manifest in problems in

math concepts/computation, reading comprehension, composition, handwriting, spelling, memory, attention, or study/organizational skills, how can a response to treatment on basic reading skills be used as a criterion? Even if reading inadequacy is presumed to be the fundamental characteristic of LD, does this suggest it is the *only* characteristic? If this is true, then LD is the same as severe reading problems. If severe reading problems can be identified and corrected in primary grades, then correcting reading problems in primary grades can eliminate LD in schools. However, there is little evidence that this is the case. Rather, LD is likely a disorder in one or more of the basic psychological processes, of which reading problems are the most apparent manifestation. In such a case, intensive instruction can improve reading skills, but this does not "cure" the disability, which may have a number of other manifestations. That is, deficits in sustained attention, semantic memory, organizational skills, perceptual motor skills, or social interactions could lead to problems in a number of other school tasks, such as handwriting, memory of academic content for tests, test-taking skills, planning for homework and class projects, and appropriate collaborative interactions with others. Although improved reading skills can be viewed as a positive goal, such improvement would not necessarily lead to improved functioning in all areas.

However identification criteria are established, it should not be forgotten how strongly underachievement, as represented by IQ-achievement discrepancy criteria, is bonded to the category of LD itself (Scruggs & Mastropieri, 2003c). For example, the hostility Aaron (1997) revealed toward discrepancy conceptualizations, at least for him, was really manifest as hostility to the entire category of LD:

When the discrepancy formula disappears from the educational scene, so will the concept of LD.... [W]e are beginning to get a glimpse of the promised land. (Aaron, 1997, p. 489)

Aaron is not alone in this perspective. A number of years ago, similar concerns were voiced:

It is time to quit viewing eligibility decision making as a technical problem. It means putting an end to efforts to try to find better ways of defining concepts and conditions that cannot be defined and may not exist. (Algozzine & Korinek, 1985, pp. 392–393)

If elimination of the category of LD is sought, then this specifically should be the topic of discussion. If it is not, then discussion is needed that demonstrates how RTI identification procedures will preserve the category of LD while improving identification of students with LD.

### An Alternative to RTI for Identifying LD

Given the problems to date with RTI approaches to identification and treatment, and the very real concerns voiced about present approaches, we propose an alternative approach, which we think incorporates the strengths of RTI while preserving the strengths of current approaches.

1. Create change in general education so that "RTI-type" first- and second-tier reading programs are implemented in general education. That is, all students are assured of evidence-based instruction (although variability in response to student and teacher characteristics is accepted). Further, supplemental procedures are in place for students who fail to demonstrate adequate progress, for any reason. Students who are referred to special education, then, have already been assured very high quality general education treat-

ments. Such procedures should guard against overidentification in two ways: first, "teaching disabilities" as a cause of LD will be eliminated, since all students will have received high-quality instruction. Second, school personnel will be less likely to refer students to special education because other services simply are not available (MacMillan, Gresham, & Bocian, 1998; MacMillan, Gresham, Siperstein, & Bocian, 1996). Such requirements can help enforce strict criteria for LD identification. Because the first- and second-tier services are entirely within the domain of general education and appropriate to the scope of general education, services should come from general education budgets.

2. All students identified as having LD will demonstrate very low achievement in one more significant areas of school functioning, and this level of functioning will be documented from more than one record, possibly including teacher reports, evidence of student classroom performance, and standardized test scores.
3. All students identified as having LD will meet exclusionary criteria with respect to sensory and motor functioning; social-emotional functioning; or economic, environmental, or cultural disadvantage.
4. All students will demonstrate a discrepancy (e.g., 1, 1.5, or 2 standard deviations) between IQ and achievement. Schools and state and federal education authorities can determine the best criteria, or whether these must be standard across states.
5. Early identification will be encouraged so that appropriate remedial services can be maximized. With appropriate general education services in effect, it can be determined for students at very early ages that general remedial services alone will not be sufficient to ensure their adequate school functioning. Therefore, there will be little to be

gained from adopting a "wait-to-fail" approach.

6. The final decision is made by a team but must be supported by evidence. To the extent that all measures are vulnerable and all students unique, it is important that teams of professionals agree on the best decisions for individual students. However, such decisions must be supported to the greatest extent possible by reliable evidence.

There are several advantages to such a procedure. First, it maintains the concept of disability, that is, as within-student, long-term or lifelong, unexpected underachievement. As a disability consideration, special education remains a viable and appropriate placement. As general low achievement, the disability consideration is lost, or at least weakened, and the appropriateness of special education is unknown. The presently proposed alternative to RTI provides an operationalized procedure that can reduce overidentification and variability from subjectivity in decision making. The RTI-type services maintain emphasis on high-quality, evidence-based practice and provide an alternative to special education. This alternative is greatly needed to provide appropriate services to the many students caught in the middle—those not "disabled" by any reasonable portrayal of the concept, and yet struggling to keep up in school. When such students are appropriately provided for, identification problems will dissipate, and special education services will be reserved for those students for whom they were created—students with disabilities, those most in need of special attention.

### Summary and Conclusions

Current conceptualizations of RTI are beginning to emerge as alternative procedures for identifying LD. The U.S. Department of Education has supported models for testing RTI for sev-

eral years now, and RTI models have been presented at the National Research Center on Learning Disabilities Responsiveness-to-Intervention Symposium. Gerber's paper provides the field with an analysis of RTI as an alternative for identifying LD. Gerber cautions the field and provides some interesting questions that should be tested empirically and answered prior to any wide-scale adoption of RTI. As people in the field discuss issues of identification of LD, they would be wise to consider questions regarding the efficacy, reliability, validity, and utility of RTI prior to wide-scale adoption. Educators should not risk misidentifying students as having LD, and they must take special care to avoid overidentifying students from culturally or linguistically diverse backgrounds or children from lower socioeconomic status backgrounds. Finally, without careful consideration, the field may lose the conceptualization of LD and ultimately fail individuals with disabilities who lack a voice in this process of generating alternative procedures for identifying LD.

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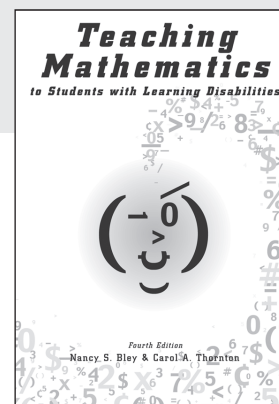
## Teaching Mathematics to Students with Learning Disabilities—Fourth Edition

Nancy S. Bley and Carol A. Thornton

The fourth edition of *Teaching Mathematics to Students with Learning Disabilities*, like previous editions, is aimed at helping teachers in general and special education settings adapt the mathematics curriculum to meet the needs of students with learning disabilities. The book reflects and incorporates the ongoing changes in the world of mathematics.

Material in this newest edition continues to emphasize problem solving and real-world applications and also incorporates some of the changes presented in the most recent edition of *Principles and Standards of School Mathematics* (published by NCTM). It is intended to be an adjunct to material used in a variety of school mathematics texts and provides a number of ways to individualize instruction and practice. To this end, specific techniques, examples, and carefully sequenced activities have been included and, in many cases, updated to address the expanded availability and use of technology.

The material has also been reorganized to more clearly address some of the sequences described throughout the book. The chapter on technology now includes an appendix listing commercial and shareware programs that can be adapted and used with students who have learning disabilities, along with publisher and Internet addresses. Other topics include time and money; concepts and computation involving whole numbers, rational numbers, and percentages; and some hard-to-learn upper-grade topics, such as ratio, proportion, integers, exponents, and scientific notation.



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