NRCLD Update on Responsiveness to Intervention: Research to Practice

by Lynn S. Fuchs

Winter 2007

The National Research Center on Learning Disabilities (NRCLD) has completed two large studies to look at how responsiveness to intervention (RTI) works at the first-grade level for preventing and identifying specific learning disabilities (SLD) in reading and math. The purpose of this report is to help professionals and parents understand what RTI is, to explain how NRCLD's findings are helping schools use RTI, and to answer questions often asked about how RTI can be used in the SLD determination process.

What RTI Is

Students with SLD make up the majority of school-age individuals with disabilities. The number of students with SLD has increased (from 1.2 million in 1979-1980 to 2.9 million in 2003-2004). Many policymakers and school administrators are concerned about the increasing numbers of students with SLD. The concern is that some of these students may be capable of learning without special education if they are provided effective general education.

The usual method for identifying SLD relies on the difference between IQ and achievement. Research now shows that this method has many problems. For example, children who read poorly have similar characteristics, regardless of whether they have a discrepancy between IQ and achievement. Also, the size of discrepancy does not indicate the severity of the SLD. Moreover, data obtained through an assessment of the IQ-achievement discrepancy do not inform instruction in important ways.

RTI is a promising model for a new way to identify SLD as a student's failure to respond to teaching methods that research has shown to work well for most students.

Here is one example of an RTI process.

Step 1: All students in a school are given short tests. The aim is to identify those students whose scores are low and so seem to be at risk of developing a learning disability.

Step 2: The progress of these at-risk students is checked for five to eight weeks. A short test is given each week. Students whose progress is low in response to *general education instruction (Tier 1)* are identified.

Step 3: These students receive *small-group instruction (Tier 2 and Beyond intervention)* for nine to 20 weeks. This instruction usually consists of three to four sessions per week. Each instructional session lasts 30 to 40 minutes. Each week, a short test measures the student's progress. They also are tested at the end of instruction. *Students who respond well to the intervention return to Tier 1 (general education) instruction*. Responding well means the student has improved each week during instruction and has a satisfactory achievement score at the end of the intervention. Student progress continues to be checked to catch any student who is not able to keep up a good rate of learning while back in general instruction.

NRCLD is a joint project of researchers at Vanderbilt University and the University of Kansas. This document was produced under U.S. Department of Education Grant No. H324U010004. Renee Bradley served as the project officer. The views expressed herein do not necessarily represent the positions or policies of the Department of Education. No official endorsement by the U.S. Department of Education of any product, commodity, service or enterprise mentioned in this publication is intended or should be inferred.

Step 4: *Students whose response to small-group instruction is poor are given a comprehensive evaluation*. A poor response is a low rate of improvement each week and a low achievement score at the end of the intervention.

Step 5: To answer questions that arose during Tier 2 and Beyond, a *comprehensive evaluation* is conducted using valid and reliable data collection measures that are targeted specifically to student needs. The aim is to determine whether it is correct to identify the student as having a learning disability. A student may be identified as having some other disability—for example, mental retardation, speech/language delay, or emotional or behavioral disorder.

Step 6: *Special education is delivered with a more intensive instructional program*. Progress continues to be checked each week. If at any time data indicate that the student is not progressing adequately with the instructional program, the special educator changes the program. *Once a student has a strong rate of learning and reaches a satisfactory performance level, the student exits special education and returns to Tier 1 general education instruction*. The student's progress in Tier 1 instruction continues to be checked so that corrective action may be taken as needed.

The reasoning behind this RTI method of identifying learning disabilities is this: When a student does not respond to generally effective interventions both at Tier 1 and at Tier 2 and Beyond, the quality of instruction is not a likely reason for poor academic progress and, instead, may provide evidence of a disability.

Benefits. An RTI model may offer several benefits. First, an RTI model for identifying students with SLD has the benefit of *early identification and intervention*. Students at risk for SLD can be screened as early as January of kindergarten or September of first grade. This decreases the likelihood that students will slip through the system without detection of their learning problems.

A second potential benefit of an RTI model of SLD identification is *systematic screening, which reduces screening bias*. Systematic screening, which involves testing all students, decreases reliance on teacher-based referral. This reduces possible teacher bias and reduces the variability in SLD identification practices. Referral and identification for SLD vary in part because teachers differ in their views about how students perform and why they may be learning poorly. This variability in teachers' views and attributes results in missed opportunities to serve students with SLD.

A final potential benefit of RTI is *linking identification assessment with instructional planning*. Presently, the assessment process for documenting a discrepancy between IQ and achievement takes a lot of resources. At the same time, the resulting test scores have little connection with planning effective instruction. Many special and general education teachers find results from traditional tests are not much help in designing instruction. Using RTI to identify students as having SLD keeps the assessment focus on the student's learning. The RTI model switches the emphasis from assessment for identification to instructionally relevant assessment. It involves monitoring student progress and systematic testing of changes in instruction.

Risks. Despite the promise of an RTI model for identifying learning disabilities, key conceptual issues need to be sharpened. RTI methods need to be further specified and studied.

One potential pitfall of RTI is *whether strong intervention models and measures are available to produce strong learning outcomes*. For schools and teachers to be able to use RTI, instructional procedures that are shown to be effective across teachers and schools must be available. In addition, measures are required to follow learning over time. These tools are available for some, but not all, academic areas. They are better developed at some grade levels. For example, a fair amount of work has been accomplished in beginning reading to provide the groundwork for both RTI intervention and measurement procedures. By contrast, in math, spelling, and writing, measurement procedures for tracking growth are well established, but more research is needed on validated intervention methods for testing responsiveness to instruction. More information is available at the early grades than for older students.

A second potential pitfall concerns *having enough trained professionals available*. To use an RTI model in the thousands of school districts in this country, large numbers of trained professionals are required. They will need the knowledge and skills to put in place defined tutoring methods or to solve problems through research. They also will need the knowledge and skills to monitor student learning, to interpret the assessment results, and to make decisions about eligibility. Moreover, using RTI requires a new way of thinking about assessment and instruction for many professionals, including school psychologists, special and general educators, and principals. To date, RTI models have been implemented only on a small scale by highly trained personnel in research settings. Using RTI on a large scale, in many school systems and many states, has not yet been tested. It will require developing and carrying out an ambitious training agenda for school professionals.

Finally, *RTI practitioners will need to determine when to begin due process and parental involvement*. Does due process begin with problem-solving adaptations to gen-

eral education or with the intensive short-term preventive instruction? Is it delayed until the student is found to be unresponsive to instruction and a special education classification is imminent? On the one hand, due process early in the identification process may be essential to protect against students getting caught in a cycle in which they linger between general education and some layer of services short of special education, without parents being aware or having input. On the other hand, initiating due process early in identification will be costly and will add considerable time and personnel requirements to identification. Clearly, discussions are needed about due process in such a changed identification system.

How NRCLD's Research Is Helping Schools Implement RTI

Two large studies have been conducted, one in *reading* and the other in *math*, in which students were followed over time.

Reading. NRCLD worked in 42 classrooms across 10 schools. Some schools had large numbers of high-poverty families, and other schools had large numbers of middle-class families. Students from these classrooms were selected for taking part based on low scores on brief reading measures given at the beginning of first grade. These 252 students were randomly assigned to receive the instruction or not at the beginning of January, depending on how they actually improved during the fall.

Instruction Group. Students who had been randomly assigned to receive small-group instruction (and who did not improve much in reading during the fall) continued to receive reading instruction in the general education classroom. They also took part in Tier 2 small-group instruction for nine weeks. Small-group instruction consisted of three, 45-minute sessions per week.

Control Group. By contrast, students who had been randomly assigned to the control group (and who did not improve much in reading during the fall) continued to receive all of their reading instruction in the general education classroom. They did not receive small-group instruction.

Findings. At the end of first grade, students who had received small-group instruction read substantially better than students who did not receive small-group instruction. Many fewer students qualified as SLD given the various methods we used to define SLD. The alternative ways of defining SLD at the end of first grade, some based on traditional methods of discrepancy between IQ and achievement and others based on RTI approaches, designated different students as having a learning disability.

Math. We conducted a study similar to the reading study but not identical. We worked in 41 classrooms across 10 schools. Some schools had large numbers of high-poverty families, and other schools had large numbers of middle-class families. Based on their math scores near the beginning of first grade, students from these classrooms were designated as not at risk for SLD in math (127 children) or as at risk for SLD in math (569 children). The at-risk children were randomly assigned to receive small-group instruction or not beginning in November.

Instruction Group. Students who had been randomly assigned to receive small-group instruction continued to receive math instruction in the general education classroom. They also took part in Tier 2 small-group instruction for 20 weeks. This instruction consisted of three, 30-minute sessions per week.

Control Group. By contrast, students who had been randomly assigned to the control group continued to receive all of their math instruction in the general education classroom. They did not receive small-group instruction.

Findings. At the end of first grade, students who had received small-group instruction computed and understood math concepts substantially better than students who did not receive small-group instruction. Many fewer students qualified as SLD given the various methods we used to define SLD. The alternative ways of defining SLD at the end of first grade, some based on traditional methods of discrepancy between IQ and achievement and others based on RTI approaches, designated different students as having a learning disorder.

Conclusions. From these studies, we draw several conclusions that should influence how schools conduct RTI.

1. One-time testing at the beginning of the year does not provide an adequate basis for identifying children who need Tier 2 and Beyond small-group instruction intervention. Instead, one-time testing can be used to identify a pool of students whose progress then needs to be monitored, using brief weekly tests, for five to eight weeks. Then, a slope of improvement (that is weekly rate of gain) can be calculated to determine which children have progressed nicely in response to the Tier 1 general education program and which children require Tier 2 and Beyond intervention.
2. Tier 2 and Beyond small-group instruction can be effective in promoting better achievement. It also can be effective for sorting out children who will learn well with well-designed instruction versus children who require more intensive special education. With Tier 2 and Beyond small-group instruction, fewer children finish first grade with the kinds of academic deficits that make them appropriate for disability certification.
3. This RTI process can provide a sound basis for identi-

fying students to receive a comprehensive special education evaluation.

4. Tier 2 and Beyond instructors need to be well trained and supervised for Tier 2 and Beyond benefits to accrue. With training and supervision, formal teaching certification is not necessary. Continuing problem solving to address the learning needs and behavioral challenges of individual students needs to be provided by a licensed teacher who has a strong teaching background.
5. Different methods for quantifying "response" to Tier 2 and Beyond small-group instruction will result in different numbers of students being identified for comprehensive special education evaluation. Some methods work better than others at identifying students with severe academic deficits. One method that appears to work well is to define adequate response as students demonstrating (a) a strong rate of improvement during small-group instruction as well as (b) adequate final performance at the end of small-group instruction.
6. Some students who demonstrate adequate response to small-group instruction will fall behind again when they return to Tier 1 general education without the continuing support of small-group instruction. For this reason, it is important that schools continue to monitor the progress of these students with brief weekly assessments so that corrective actions may be taken when needed, including returning to Tier 2 and Beyond small-group instruction.

Frequently Asked Questions about RTI

Will this process delay identification?

The RTI process takes longer than a traditional one-step comprehensive evaluation. However, beginning at Tier 2, students are receiving services designed to remediate their learning problems—a prevention strategy. The aim is that the prevention built into RTI will reduce the number of students incorrectly identified as having a disability because they have not received strong instruction. It may help many students get on an upward track toward successful academic outcomes. Also, RTI facilitates prevention and identification early in the primary grades. In contrast, the traditional method of identifying a discrepancy between IQ and achievement often occurs later in schooling, since it may be many grades before a sizeable discrepancy accrues.

Does each child have to go through RTI or can a child have a traditional assessment?

Schools honor parent requests for a traditional one-step comprehensive evaluation, in lieu of the RTI process. Legislation suggests that the evaluation of a child suspected of having a disability must include a variety of assessment tools and must not rely on any single measure.

What does "research-based intervention" mean?

A research-based intervention constitutes a set of practices. Each of those practices is tested and evaluated in controlled studies. Each practice must be shown to be effective. In a controlled study, students are matched (found to be similar) according to the criteria important to the study. Students are randomly assigned to a treatment or no treatment group. The outcomes for students in both groups are compared.

Who initiates an RTl process?

Typically, children are identified to take part in Tier 2 and Beyond interventions based on their universal screening scores, when students are tested once, at the beginning of the school year. Many times, such universal screening is supplemented with short-term progress monitoring (for example, over five weeks) to determine the student's response to general education.

What will be required for professional development?

An RTI process of SLD identification will require professional development to prepare school staffs to do the following activities:

- Collect and interpret screening scores using existing data or individually administered brief assessments on all students
- Ensure the quality of general education by selecting strong curricula and by conducting observations to document that those strong curricula have been used well. This requires examining class-wide patterns of response to determine when teachers require assistance to improve the quality of their instructional programs and then providing that assistance
- Collect continuing progress-monitoring data and interpret the data
- Design Tier 2 and Beyond programs that incorporate validated intervention protocols
- Implement those Tier 2 and Beyond programs with fidelity.

Who is responsible for the various activities required to implement RTI as a method of SLD identification?

Faculty in a school building must work collaboratively to implement RTI as a method of SLD identification. In some schools, the work is distributed as follows:

Task	Responsibility
Collecting screening data using existing data or individually administered brief assessments on all students	Teachers & trained aides
Interpreting screening data	Special educators & school psychologists
Ensuring the quality of general education	Curriculum specialists at the school or district level, school psychologists, teachers, & parents
Collecting continuing progress-monitoring data	Teachers & trained aides
Interpreting progress-monitoring data	Special educators & school psychologists
Designing Tier 2 and Beyond programs that incorporate validated intervention protocols	Special educators & school psychologists
Implementing Tier 2 and Beyond programs with fidelity	Trained aides under the supervision of special educators & school psychologists
Conducting the Step 4 evaluation	Special educators & school psychologists

How long will the comprehensive evaluation be and what professional is likely to give the Step 4 assessment?

The comprehensive evaluation should be specifically targeted to answer questions that arise during Tier 2 and Beyond instruction. It should be done in collaboration with the perspective of the student's general education teacher. Typically, answering these relevant questions involves only a small number of relatively brief tests. For example, if mental retardation is suspected as the disability category, school psychologists might administer the Vineland Adaptive Behavior Scale along with a two-subtest Wechsler Abbreviated Scale of Intelligence instead of giving a full-blown intelligence test to rule out mental retardation.

What proportion of students is likely to be identified as at risk (for Tier 1 monitoring) and for the Tier 2 and Beyond diagnostic trial?

The proportion of students identified for different steps in the RTI process depends largely on the quality of general education. When general education instruction is of questionable quality, research suggests that 20 percent to 25 percent of a school population is likely to be identified as at risk and demonstrate unresponsiveness to Tier 1. Of course, providing the Tier 2 and Beyond diagnostic instructional trial to 25 percent of a school population challenges a school's resources. In contrast, research also suggests that with high-quality general education, only 9 percent to 10 percent of students will be identified as at risk and respond inadequately to Tier 1, with approximately half those students responding to high-quality Tier 2 and Beyond instruction. Clearly, a need exists to ensure high-quality general education. In a similar way, integrity of the RTI process requires a strong Tier 2 and Beyond diagnostic instructional trial.

Are there schools currently carrying out RTI as a method of SLD identification and, if so, how can I learn more about their methods?

Yes, some schools are implementing RTI as a method of SLD identification. You can obtain a list of the sites with which NRCLD has worked and information about their implementation of RTI from NRCLD staff at www.NRCLD.org.