

# RTI (Response to Intervention): Rethinking special education for students with reading difficulties (yet again)

**RUSSELL GERSTEN, JOSEPH A. DIMINO**

Instructional Research Group, Signal Hill, California, USA

doi:10.1598/RRQ.41.1.5

The field of special education seems to lurch forward in a seemingly never-ending series of reforms and initiatives. Legislation often has been influenced by the aspirations, hopes, and dreams of family members of those with disabilities coupled with the theoretical

models and aspirations of researchers. Rarely is there a strong empirical basis for the proposed reform.

Although this trend is true for many fields of human service, the speed of these reforms in the field of special education seems extraordinary. More

recently, every shift or change in special-education policy or procedure has had dramatic repercussions for the field of reading instruction. These reforms invariably have a profound effect on students with reading difficulties, because the largest groups of special-education students are those with LD, and the vast majority of these students demonstrate serious difficulties in reading. Response to Intervention (Fuchs & Fuchs, 1998; Vaughn & Fuchs, 2003), or RTI, is the latest of such innovations.

The purpose of RTI is not only to provide early intervention for students who are at risk for school failure but also to develop more valid procedure for identifying students with reading disabilities. As the authors of the accompanying articles in this volume explain, RTI allows teachers to judge which students need special education instruction in reading based on whether or not the student can respond to either typical classroom instruction, or the type of support that is possible in a typical classroom (e.g., brief but intensive small-group intervention on key skills). It seems much more direct and logical than relying on discrepancies between IQ scores and reading achievement scores. Another appealing feature is the fact that it is a form of dynamic assessment (e.g., Campione & Brown, 1987). Reading researchers have been trying to operationalize that concept for several decades, with minimal success until recently.

Unlike the innovative concept of the resource room in the 1970s, and prereferral interventions in the 1980s, this model is being scaled up based on a body of controlled scientific research. Admittedly, this body of research is small; as Fuchs and Fuchs (in this issue) note, there is considerable hype surrounding RTI. Having watched the problems with the resource-room model, prereferral intervention, and the consultation model in actual implementation, we feel it is important to raise issues and concerns as large-scale implementation begins to unfold. In this article, we discuss aspects of RTI that appear to be promising for the field of reading, and those that we view as problematic. Unlike many earlier models of innovation in special education service delivery, there is some research indicating promise. Most of that research has been conducted with students in the first two or three years of schooling (e.g., O'Connor, 2000; Speece, Case, & Molloy, 2003; Vaughn, Linan-Thompson, & Hickman, 2003), so RTI in early intervention will be the focus of this article.

## The way we were: Understanding why early intervention in reading did not always seem optimal

With the perspicacity of hindsight, it is easy to condemn the so-called "wait and fail" method commonly used by school districts since it seems to senselessly delay help for students who require assistance. As commonsensical as the RTI concept seems in 2005, in the 1980s and 1990s the concept of early identification of students with reading difficulties seemed cruel to many. Typically, districts wait until the end of second or beginning of third grade before determining that a student has significant disabilities in reading.

Until recently, identification was linked to referral for special education services, and the thought of labeling a 5- or 6-year-old as learning disabled was deemed improper. Special educators at that time failed to provide little but resource-room services for students with a label of LD. It seemed more humane to provide students with a chance to mature before making the serious determination that special education placement was necessary. Ironically, as Juel noted as early as 1988 in her longitudinal research, students who do not learn to read by the end of first grade almost invariably remain poor readers.

Many of the commonly used early screening measures had not yet been developed; the few phoneme awareness measures that were developed were not well known until the early 1990s along with the wide dissemination of Adams's (1990) *Beginning to Read: Thinking and Learning About Print*. The typical readiness tests from the 1970s and 1980s, such as the Metropolitan Readiness Test, possessed a predictive validity of close to zero. The reading field learned from Adams's synthesis that neither language proficiency measures nor IQ predicted the ability to learn to read (i.e., successfully and fluently decode at the first- and second-grade level). In fact, contemporary research on English learners continues to confirm these findings (e.g., Lesaux & Siegel, 2003). However, it was not until awareness that both phonological processing measures and measures of naming the letters of the alphabet were reasonably valid predictors of future reading ability that the field had some basis for making determinations with any type of precision. (Precision of many of these measures for kindergartners remains far from perfect.)

## Failure of the major intervention of the late 1980s: Prereferral interventions

The primary approach to providing help to struggling students in their classrooms in an earlier version of special education legislation was prereferral interventions. These refer to suggestions made by the Student Study Team, typically composed of a school psychologist, a special educator, and often an administrator or counselor.

Yet this practice has posed severe challenges for educators. The goal was laudable, avoiding unnecessary standardized testing that merely confirmed that students were having reading problems and providing teachers with practical, sound ideas for working with struggling students. Realities were quite different. Student Study Teams typically made intervention recommendations on the basis of the classroom teacher's description of the students' academic or behavioral performance. Many of the descriptions were anecdotal; few were data based.

There was a fatal flaw in prereferral interventions. Usually classroom teachers requested a Student Study Team meeting only for students that they realized they were not helping. They felt that these students needed help that was far beyond the teacher's current skill level. Providing brief suggestions on how to help this one student often backfired. The classroom teacher was often at a breaking point, and the relationship between the teacher and the referred student was often troubled. Suggestions were rarely perceived as ways to help teachers build their capacity to teach reading or develop prosocial behavior in children; rather they were usually designed for helping the teacher work with one particular student, a student who teachers often felt did not belong in their classes. Thus, in general, prereferral interventions, despite the initial enthusiasm they generated in the profession, rarely helped students learn to read. In addition, because the norm was not to consider special education placement until a student completed second grade, they rarely involved early intervention in reading.

## Promises of RTI

RTI is integrally linked to the concept of providing intensive early intervention to prevent later reading failure. A key underlying tenet is the finding of Juel (1988) that students who did not learn to

read by the end of first grade tend to remain weak readers throughout the elementary grades. Stanovich (1986) labeled this phenomenon the Matthew effect, describing the mechanisms by which proficient readers continue to build vocabulary and fluency through reading, whereas weak, dysfluent readers tend to avoid reading and read less, thus thwarting their growth in vocabulary, basic word knowledge, and fluency.

RTI supporters assume that if students become proficient readers by the end of first grade, then they will remain good readers. As reflected by the recent comments by the Office of Special Education and Rehabilitation Services (U.S. Department of Education, 2005):

There are many reasons why use of the IQ-discrepancy criterion should be abandoned. The IQ-discrepancy criterion is potentially harmful to students as it results in delaying intervention until a student's achievement is sufficiently low so that discrepancy is achieved. For most students, identification as having an SLD (specific learning disability) occurs at an age when the academic problems are difficult to remediate (even) with the most intense remedial efforts (Torgesen et al., 2001). Not surprisingly, the "wait to fail" model that exemplifies most current identification practices for students with SLD does not result in significant closing of the achievement gap. (p. 44)

## *Comprehensibility and coherence*

The concept behind RTI appears to be easier for many teachers to understand than the prereferral intervention process. RTI can provide teachers with a consistent, straightforward framework for assessing students and making data-based instructional decisions. RTI is implemented typically by screening students three times a year in the academic and behavioral domains. Their performance is compared with established criteria that identify students who are progressing at the expected rate. Established rates can be determined by national benchmarks, local norms, or even classroom norms. Students performing somewhat below the desired rate often are monitored carefully to see if intensive intervention may be necessary. Students well below the criteria are considered at risk for reading problems and provided with immediate attention. Often, this is in the form of a small-group intervention. By providing additional help to the student in the classroom and monitoring progress on a measure such as word-identification fluency or oral reading fluency, the teacher can identify students who continue to fall behind the expected rate of progress. These are the students for whom special education or some type of specialized interven-

sive intervention (sometimes called a Tier 3 intervention) may be appropriate.

Of course, RTI requires development of valid and reliable assessments for all age levels and a reasonable amount of teacher training in its use. Reading First intentionally calls for this type of training in low-performing schools for primary-grade staff (No Child Left Behind Act, 2001). In our work with Reading First, we have noted that, after training and orientation, many teachers appear to grasp the logic underlying RTI. In other words, they see where help is provided for students who are falling behind without great discussion of whether the problem is perceptual, low IQ, motivational, or environmental. It merely calls for 20 minutes or so of small-group work to "catch students up" with their peers. Only when this type of catch-up procedure does not work are students given extensive diagnostic testing and possible placement into a special program.

The combination of progress-monitoring data and a record of the specific interventions, along with diagnostic information, gives the Student Study Team a practical, clear, data-based picture of how well the student is responding to instruction. In the past, the Student Study Team primarily worked from static measures of performance such as the scores on standardized tests from the previous spring and anecdotal evidence. The team now has a more dynamic picture of the student's reading progress. This can be used for the type of problem solving that Fuchs and Fuchs describe in this issue. Consequently, team recommendations are based on "hard," quantitative data about both the student and how she or he responded to instruction, rather than "soft," and perhaps biased, data sources that continue to play a large role in special education referral.

Benefits seen in our recent ongoing research on Reading First in urban districts follow: For the most part, teachers see RTI, unlike prereferral intervention, as a genuine part of the general education system. This conclusion is particularly true in Reading First schools, because RTI is an integral part of most states' Reading First program. In addition, unlike traditional special education reading programs or prereferral intervention ideas, the interventions suggested in trainings are integrally connected with the core reading program being used in the classroom. This fit seems to make sense to teachers.

(Of course, two obvious potential problems with RTI are the fact that the teacher may be providing reading instruction that has problematic aspects or the interventions designed by the teacher or the school's reading specialist may be far from ideal.

Neither is an easy problem to address; both need to be addressed through ongoing schoolwide professional development in reading. Yet, at least in schools with Reading First funding and qualified Reading First literacy coaches, teachers can build proficiency in reading instruction and extend their repertoire of strategies while providing the interventions to students.)

With RTI, reading coaches often suggest interventions to teachers. Often, they are closely linked to the actual curriculum the class is using. For example, coaches might suggest ideas for small-group work using the comprehension strategies presented in the core series, or booster sessions on the phonemic processing skills covered early in the month, but not yet mastered by a small group of students. Thus, the intent is that they "fit" the teacher's role more smoothly than the clinical suggestions often made as part of prereferral interventions. For those in the field of special education, the improvement in "fit" seems like a minor miracle compared with other attempts to provide service to students with reading disabilities in general education such as personalized behavior management plans or time-consuming textbook adaptations.

After decades of trying to provide teachers with adequate measures that could easily inform instruction, we believe, at least in our optimistic moments, that there is a chance that the screening and progress-monitoring measures such as the various oral reading fluency measures available, the measures of word-identification fluency and nonsense word fluency, and measures of phoneme segmentation might actually succeed in presenting teachers with information they can actually use to guide instruction, a long-held dream of many (e.g., Fuchs & Fuchs, 1986; Gersten, Keating, & Irvin, 1995). There are several reasons to be hopeful. The first is the clear benchmarks that accompany relatively easy-to-administer measures of reading and reading-related skills. Typically, these measures are timed (rate) measures such as phonemic segmentation fluency, word-identification fluency, and oral reading fluency. The fact that teachers can link the constructs measured (word identification, phoneme segmentation, word attack strategies) with many key objectives of their reading program and their state standards seems to enhance the perceived value. The direct linkage between these data and specific interventions or intervention targets appears to be a motivator for many teachers.

Years ago, we posited (Gersten & Dimino, 2001; Gersten, Morvant, & Brengelman, 1995) that the only way most classroom teachers would learn and routinely use research-based techniques for

teaching students with learning problems was for them to see that doing so was not primarily a means for helping one or two problem students, but rather a means to improve their skill as teachers. Asking adults to change routines and habits is difficult, and we reasoned that teachers would change only if they saw long-term benefits to themselves as professionals. We think research needs to be conducted that explores how interventions can be framed, communicated, and implemented in ways that mesh with the lives of teachers in classrooms and the realities of the core reading programs they are using. This type of research should include strong qualitative components and also should be linked to both student outcomes (i.e., growth in reading) and teacher outcomes (i.e., changes in observed teaching practices, enhanced knowledge of teaching reading to struggling students).

The likelihood of teachers making massive, difficult changes for the sake of a few students, we found in our research, was quite low (Gersten, Morvant et al., 1995). RTI provides such a linkage; in Reading First there is a major stress on professional development; that is, routine use of scientific research principles to teach virtually all students to learn to read. The fact that RTI is present in both Reading First and current special education legislation reinforces the message that skilled use of interventions for struggling readers will make teachers more effective.

## Lingering concerns

In RTI research studies, either the interventions are conducted by well-trained research personnel (Vaughn et al., 2003, in press), or teachers receive continued support and guidance as they proceed through the process (Speece et al., 2003). This is critical for rigorous research, for so-called efficacy studies. However, as we scale up the use of RTI, these conditions will not necessarily be in place. Realistically, teachers have varying degrees of aptitude and interest in implementing interventions (Gersten, Baker, Haager, & Graves, 2005) and adjusting instruction based on progress monitoring. Consequently, a child could be a nonresponder due to the teacher's lack of skill or training or failure to implement the RTI system regularly and with fidelity. Another possibility is the teacher implements the intervention with a one-size-fits-all approach rather than providing additional help to students in areas (e.g., decoding strategies, vocabulary development) where additional help is required. The small-group setting allows for this type of

individualization, but skill and artistry are required for quality implementation.

In addition to being well prepared (Denton, Vaughn, & Fletcher, 2003), teachers need consistent support to implement RTI whether this comes from the principal, the counselor, or the redefinition of the role of the Student Study Team. Observations in two studies indicated that teachers' implementation of research-based interventions and consistent progress monitoring was greater when they were supported and monitored. In one study (Haager & Madhavi, in press), a member of the research staff met with the teachers on a regular basis to discuss student progress-monitoring data, assist in forming intervention groups, observe intervention lessons, provide feedback, and model research-based interventions. The fidelity observations showed a consistent and high level of implementation. Furthermore, those schools with an active site-based person to support the teachers were continuing the program two years after the study was concluded. In a similar study, (Dimino, observational field notes, November 29, 2004; April 26, 2005) meetings were held with teachers twice per month to answer questions, address concerns, review student data, and discuss appropriate interventions. The quality and consistency of the implementation were not as strong as in the former study.

To date, we do not possess information on what large-scale implementation of reading interventions in the early grades looks like. We hope the various state evaluations or the national evaluation study being conducted by Abt Associates for Institute for Educational Sciences (2005) will shed some light on this issue, although it is not clear that any of the evaluation teams will disaggregate impacts of the interventions for struggling readers from impacts of other pieces of Reading First (extensive training and coaching in research-based principles for teaching the class, use of a core reading series). We need to know more about what these interventions look like in practice. We would hope that, as part of the various state and local evaluations of Reading First national evaluation, some case study observational research would examine and explore the nature of the actual interventions provided to struggling readers and their impacts.

Another disturbing trend we have observed in our field research is the treatment of many of the benchmarks on tests such as DIBELS (Good & Kaminski, 2001) as if they descended from Mt. Olympus and were inviolate. Benchmarks are merely guidelines for indicating which students are likely to be reading at grade level or below grade level by the

end of the year. As in medicine, where benchmarks are routinely used, we need to check that these numbers are stable over time for a given child before taking serious action. The concept of measurement error is not commonly understood by many teachers, nor apparently by some of those designing the tests or making recommendations about their use, but most assuredly should be.

## False positives: Providing intensive services to those with no need for them

In their review of the beginning reading intervention research, Jenkins and O'Connor (2000) concluded,

Over prediction occurs when predictive measures mistakenly over-identify children as at risk for becoming RD (reading disabled). Indeed, most efforts to identify reading problems before receiving reading instruction over predicts reading disabilities. Sixty-nine percent of the children predicted to be at risk in Felton's (1992) study, for example, were good readers by third grade; only 58% of Badian's (1994) at-risk preschoolers had confirmed reading problems. (p. 112)

One of the ironies of the screening measures used for detecting potential reading disabilities in young children is that the earlier a student takes these assessments, the less valid and potent a predictor the measure is. Thus, measures given at the beginning of kindergarten are much more inaccurate than those given at the end of kindergarten or early first grade (Torgesen, Wagner, Rashotte, Alexander, & Conway, 1997). Thus, as we try to implement early intervention in kindergarten, we use measures with less precision than those for even slightly older children. Given the limited resources that schools possess, providing intensive reading intervention to students who do not need it is a serious problem and a serious potential flaw, not to mention the potential effects on self-concept and the consternation of parents. By waiting a longer period, we will be more accurate but will miss the opportunity of teaching virtually all children to read by the end of first grade.

## The best way to screen students: Still emerging

Over the past decade, there have been numerous research studies linking performance on phono-

logical assessments and future success or failure in reading. Students' inability to blend and segment words and delete, add, and isolate sounds usually affects their ability to understand and learn sound-symbol correspondence, which, in turn, affects their ability to effectively and accurately decode text. Consequently, more mental energy is spent on decoding the text rather than comprehending it.

Scarborough (2005) cautioned us that this phonological model of predicting reading performance is not inaccurate, but it is incomplete; it is only one part of the picture. There are other non-phonological factors such as proficiency in oral language, expressive vocabulary, and sentence or story recall that also can predict long-term reading outcomes (e.g., grades 3–6). She contended that the model for predicting reading disabilities will be more accurate by including another path, nonphonological measures, as many students with reading disabilities have deficits in both phonological and semantic aspects of language.

Scarborough's (2005) model accounts for those students who decode well but cannot comprehend what they read. These students may have deficits in nonphonological areas. Currently, there are no efficient screening measures for language deficits that are analogous to those used to predict student outcomes and consistently monitor student progress in phonemic awareness, sound-symbol correspondence, and fluency.

Scarborough's (2005) contention has an impact on the effectiveness and validity of the RTI model in identifying students with learning disabilities. Imagine a student who progresses well. Her phonemic awareness skills are good; she decodes well, applies those skills, and consequently presents herself as a fluent reader. However, she cannot comprehend what she reads. With the addition recommended by Scarborough, proactive, early intervention in comprehension and vocabulary may ameliorate the difficulty. If not, the student would receive more intensive educational services earlier in her school career.

In the absence of appropriate screening and progress-monitoring assessments in this area, it is essential to begin integrating vocabulary instruction and listening comprehension activities with the curricula in the primary grades. Students who may have deficits in these areas can be identified by the teacher on the basis of the student's response to daily instruction. Those students who are not responding can be assessed with the norm-referenced assessment in the nonphonological areas. Once identified, the student can receive intervention and be monitored for possible identification as a student with learning

disabilities. Although these approaches are in their infancy, important research has been conducted by Beck and McKeown (2001) and others on use of “read-alouds” to promote vocabulary development and comprehension skill.

We can get a sense of this phenomenon by examining the profiles of students in a recent RTI study on second-grade reading conducted by Vaughn et al. (2003). Vaughn reviewed the pretest scores of three groups of at-risk readers: those who reached oral reading fluency benchmarks in 10 weeks, 20 weeks, or 30 weeks, as well as those who remained below benchmark levels after almost a year of intensive small-group intervention in reading on a daily basis. Not surprisingly, the groups were often significantly different in initial oral reading fluency scores, with those who reached the benchmarks quickly being significantly more fluent readers than those who still needed help after an intensive one-year intervention. However, two other measures also discriminated between the groups: passage comprehension (on the Woodcock Reading Mastery Test) and rapid automatized naming. These data, along with the research of Scarborough (2005), suggest that, for long-term prediction, some type of measure of comprehension of written or oral language is also important, a point emphasized by O'Connor and Jenkins (1999).

In addition, rapid automatized naming, the speed at which a student can name pictures of common objects, consistently predicts reading ability. Of the two types of measures, the first assesses skills and abilities that teachers can directly influence by the nature and quality of instruction in reading, including vocabulary, comprehension instruction, and through read-alouds of storybooks (Coyne, Simmons, & Kame'enui, 2004; Robbins & Ehri, 1994). We envision this component of reading intervention as the next wave for development. Due to the complexity of teaching vocabulary and comprehension, we believe that implementing interventions in these areas will be even more demanding than earlier work on intervention in the considerably less complex elements of phonemic awareness, decoding, and word-reading skills area. Certainly our classroom observational research of first-grade teachers' reading instruction demonstrated that skill levels in these areas were far more limited, on average, than for decoding and phonological work (Gersten et al., 2005).

## Next steps for RTI research

We envision several quite different research areas in RTI research and at least one important

methodological advance. As mentioned earlier, it will be important to conduct RTI studies with actual classroom teachers, rather than graduate students or substitute teachers or retired teachers trained by university personnel. These studies, so-called “scaling up” studies, should differ from earlier RTI research (often called efficacy trials) in that the study of implementation becomes as important as the study of outcomes. For efficacy trials, researchers attempt to control for fidelity of implementation so that we can attribute effects to a specified intervention. With large-scale field studies, we want to reliably describe and analyze how teachers who receive training actually implement the various interventions. Good implementation research can include an embedded qualitative component (e.g., use of the Concerns-Based Adoption Model; Hall & Hord, 2001) or a host of other qualitative methodologies (e.g., Huberman & Miles, 1984).

Equally important is research on RTI that addresses students with problems with vocabulary, listening comprehension, and reading comprehension. Recently completed longitudinal research (e.g., Scarborough, 2005) suggests that a group of students will learn to read, but be seriously hampered beginning in third and fourth grade by limited vocabulary knowledge and limited strategies for comprehension of either spoken or written discourse. From our understanding of instructional research in these areas (e.g., Beck & McKeown, 2001; Coyne et al., 2004; Gersten, Fuchs, Williams, & Baker, 2001), it is unclear that the same time of intense, explicit systematic small-group instruction that is effective in teaching phonological processing and decoding to most students will be the optimal style for development of semantic aspects of language. We envision this as a critical area for research in the near future.

## RTI and regression-discontinuity designs: A perfect match (we hope)

As researchers continue to investigate the effectiveness of various RTI approaches, we wish to bring to their attention to the potential utility of the regression-discontinuity design (Shadish, Cook, & Campbell, 2002). Although this design has been discussed in the literature for nearly 40 years, it has rarely been used in educational research. This design is virtually as rigorous as randomized controlled trials for assessing the effectiveness of interventions, as

Shadish et al. elucidated. It seems a perfect fit for RTI for a reason that will become obvious.

For a regression-discontinuity design, a research team assigns all students below a certain quantitative score (say a score on a DIBELS phoneme segmentation screening test), or a composite of quantitative scores (say the total of scores on a word-identification test and an oral reading fluency measure for a second grader), to the intervention group. This would seem a relatively easy research procedure to implement with an RTI procedure because it is common practice. (In fact, Shadish et al., 2002, clearly indicated that if a school or district or classroom deviates from a strictly quantitative criterion, the design can deal with this. Students assigned by teacher judgment receive the instructional intervention, but are simply excluded from the regression analysis.)

All students above the cutoff score are assigned to a control condition. For RTI designs, this will almost invariably be a good fit because students scoring over a benchmark typically receive no special instructional intervention. Data analyses indicate whether or not intervention students perform better than one would anticipate given the nature of typical instruction in the school. (Data analyses are described in detail in Shadish et al., 2002; they provide a discussion of the importance of analysis for interaction effects and how the design is not hindered by regression to the mean. These discussions are fairly technical and go beyond the scope of this article. The analyses are, of course, extensions of linear regression.)

Shadish et al. (2002) argued that regression discontinuity (RD) does not suffer from most of the problems associated with nonexperimental designs (i.e., typical quasi-experiments) because with regression discontinuity, (a) students come from the same population and setting and (b) the selection process is fully specified. With a typical quasi-experiment we are never quite sure if the classes in the comparison group really are similar to the classes in the experimental group because there may be other underlying variables that differentiate them (e.g., more motivated teachers, students with equal word-reading skill but different levels of vocabulary knowledge). With RD, these other potential confounds do not exist because experimental and comparison school students come from the same classrooms or same settings. We also know that the two samples differ systematically on one variable, the score we used to assign them to intervention or control groups. The assumptions of regression or covariance are more likely to be met because we fully know the one way in which students in the intervention and control groups systematically differ and, because they come from the same setting,

we can reasonably safely assume other differences are due to chance. For example, with the DIBELS example mentioned before, we would know that students in the RTI group differ from others in that their score on phoneme segmentation fluency is below 35. We would know that students receive the same instruction as the control group (in that they come from the same school or same classes) and come from the same neighborhood and so forth.

With conventional quasi-experimental designs; that is, where a researcher finds a set of similar classrooms or similar schools based on demographics or last spring's scores on a standardized test, we can only make educated guesses about what other factors may differentiate the RTI students in the experimental schools from the students in comparison schools. We would know both sets of RTI students scored below 35 on the phoneme segmentation fluency measure, but could only guess at differences in school climate or quality of teaching.

Although this regression-discontinuity design seems counterintuitive at first, it has been endorsed by many of the leading research methodologists in the United States. RTI research provides a perfect venue for its use. We believe the logic behind it is sound, and it can be an excellent approach for experimental control studies of RTI that are easy to negotiate with schools.

## Conclusions

RTI, like other innovations in special education such as prereferral interventions, the resource room, mainstreaming, inclusion, and the mandate to provide access to the general curriculum to students with disabilities, holds great promise for the reading field. It seems a much more sensible and comprehensible path than earlier attempts to actively assist classroom teachers in their work with struggling students such as full-inclusion models for students with LD (Baker & Zigmond, 1990), or individualized prereferral interventions tailored to the needs of one and only one student.

RTI can lead to intensive work with struggling students in learning phonological processing skills and decoding strategies as early as kindergarten and first grade, without all the cumbersome bureaucracy involved in special education referral. The hope of many is that it will reduce the inappropriate placement of students into the LD category when their only problem was that they were taught improperly in the early grades or could not keep up with the rest of the class.



With the extensive data reporting requirements of No Child Left Behind, we will have a chance to track these changes more systematically than in the past. Although data only will be collected beginning in third grade on reading performance, we can obtain reasonable estimates of long-term effects of early intervention as it is increasingly utilized both as part of special education policy and as part of Reading First. These quantitative analyses can and should be supplemented by rigorous research studies of which RTI components really work in practice, and both formal and informal examinations of RTI in practice.

**RUSSELL GERSTEN** is executive director of Instructional Research Group, a nonprofit educational research institute in Long Beach, California, and president of RG Research Group. His major research interests are reading comprehension, research on professional development and coaching, reading instruction for English-language learners, and meta-analysis. He is also professor emeritus in the College of Education at the University of Oregon. Gersten is a nationally recognized expert in research on English learners and special education. He can be contacted at the Instructional Research Group, 2525 Cherry Ave., Suite 300, Signal Hill, CA 90755, USA, or by e-mail at rgersten@inresg.org.

**JOSEPH A. DIMINO** is a research associate at the Instructional Research Group in Signal Hill, California. He has codirected research grants focusing on research to practice topics. His research interests include reading comprehension, early literacy, content area instruction, and translating research into classroom practice. He can be contacted at the Instructional Research Group, 2525 Cherry Ave., Suite 300, Signal Hill, CA 90755, USA, or by e-mail at joe.dimino@inresg.org.

## REFERENCES

- ABT ASSOCIATES FOR INSTITUTE FOR EDUCATIONAL SCIENCES. (2005). Retrieved June 9, 2005, from <http://www.abtassociates.com/index.cfm>
- ADAMS, M.J. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: MIT Press.
- BADIAN, N.A. (1994). Preschool prediction: Orthographic and phonological skills, and reading. *Annals of Dyslexia*, 44, 3–25.
- BAKER, J., & ZIGMOND, N. (1990). Are regular education classes equipped to accommodate students with learning disabilities? *Exceptional Children*, 56, 515–526.
- BECK, I.L., & MCKEOWN, M.G. (2001). Text talk: Capturing the benefits of read-aloud experiences for young children. *The Reading Teacher*, 55, 10–20.
- CAMPIONE, J., & BROWN, A. (1987). Linking dynamic assessment with school achievement. In C.S. Lidz (Ed.), *Dynamic assessment* (pp. 82–116). New York: Guilford.
- COYNE, M.D., SIMMONS, D., & KAME'ENUI, E.J. (2004). Vocabulary instruction for young children at risk for experiencing reading difficulties: Teaching word meanings through shared storybook readings. In J.F. Baumann & E.J. Kame'enui (Eds.), *Vocabulary instruction: From research to practice* (pp. 41–58). New York: Guilford.
- DENTON, C.A., VAUGHN, S., & FLETCHER, J.M. (2003). Bringing research-based practice in reading intervention to scale. *Learning Disabilities Research & Practice*, 18, 201–211.
- FELTON, R.H. (1992). Early identification of children at risk for reading disabilities. *Topics in Early Childhood Special Education*, 12, 212–229.
- FUCHS, D., & FUCHS, L.S. (1998). Treatment validity: A unifying concept for reconceptualizing the identification of learning disabilities. *Learning Disabilities Research & Practice*, 13, 204–219.
- FUCHS, L., & FUCHS, D. (1986). Effects of systematic formative evaluation: A meta-analysis. *Exceptional Children*, 53, 199–208.
- GERSTEN, R., BAKER, S., HAAGER, D., & GRAVES, A. (2005). Exploring the role of teacher quality in predicting reading outcomes for first grade English learners: An observational study. *Remedial & Special Education*, 26, 197–206.
- GERSTEN, R., & DIMINO, J. (2001). The realities of translating research into classroom practice. *Learning Disabilities Research & Practice*, 16, 120–130.
- GERSTEN, R., FUCHS, D., WILLIAMS, J., & BAKER, S. (2001). Teaching reading comprehension strategies to students with learning disabilities. *Review of Educational Research*, 71, 279–320.
- GERSTEN, R., KEATING, T.J., & IRVIN, L.K. (1995). The burden of proof: Validity as improvement of instructional practice. *Exceptional Children*, 61, 510–519.
- GERSTEN, R., MORVANT, M., & BRENGELMAN, S. (1995). Close to the classroom is close to the bone: Coaching as a means to translate research into classroom practice. *Exceptional Children*, 62, 52–66.
- GOOD, R.H., & KAMINSKI, R.A. (2001). *Dynamic indicators of basic early literacy skills* (6th ed.). Eugene, OR: Institute for the Development of Educational Achievement.
- HAAGER, D. & MADHAVI, J.N. (in press). What can we reasonably expect of teachers in a three-tiered Intervention model? In D. Haager, S. Vaughn, & J.K. Klingner (Eds.), *Validated practices in three-tiered reading intervention models*. Baltimore: Paul H. Brookes.
- HALL, G.E., & HORD, S.M. (2001). *Implementing change: Patterns, principles, and potholes*. Boston: Allyn & Bacon.
- HUBERMAN, A.M., & MILES, M.B. (1984). *Innovation up close: How school improvement works*. New York: Plenum Press.
- JENKINS, J.R., & O'CONNOR, R.E. (2000). Early Identification and intervention for young children with reading learning disabilities. In R. Bradley, L. Danielson, & D. Hallahan (Eds.), *Identification of learning disabilities* (pp. 99–149). Hillsdale, NJ: Erlbaum.
- JUEL, C. (1988). Learning to read and write: A longitudinal study of 54 children from first through fourth grades. *Journal of Educational Psychology*, 80, 437–447.
- LESAUX, N., & SIEGEL, L. (2003). The development of reading in children who speak English as a second language. *Developmental Psychology*, 39, 1005–1019.
- NO CHILD LEFT BEHIND ACT OF 2001, Pub. L. No. 107–110, 115 Stat. 1425 (2002).
- O'CONNOR, P.D., & JENKINS, J.R. (1999). Prediction of reading disabilities in kindergarten and first grade. *Scientific Studies of Reading*, 3, 159–197.
- O'CONNOR, R.E. (2000). Increasing the intensity of intervention in kindergarten and first grade. *Learning Disabilities Research & Practice*, 15, 43–54.
- ROBBINS, C., & EHRI, L. (1994). Reading storybooks to kindergartners helps them learn new vocabulary words. *Journal of Educational Psychology*, 86, 54–64.
- SCARBOROUGH, H. (2005). Developmental relationships between language and reading: Reconciling a beautiful hypothesis with some ugly facts. In H.W. Catts & A.G. Kamhi (Eds.), *The connections between language and reading disabilities* (pp. 3–24). Mahwah, NJ: Erlbaum.
- SHADISH, W.R., COOK, T.D., & CAMPBELL, D.T. (2002). *Experimental and quasi-experimental designs for general causal inference*. Boston: Houghton Mifflin.
- SPEECE, D.L., CASE, L.P., & MOLLOY, D.E. (2003). Responsiveness to general education instruction as the first gate to learning disabilities identification. *Learning Disabilities: Research & Practice*, 18, 147–156.
- STANOVICH, K.E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly*, 21, 360–406.
- TORGESSEN, J.K., RASHOTTE, C.A., & ALEXANDER, A.W. (2001). Principles of fluency instruction in reading: Relationships with established empirical outcomes. In M. Wolf (Ed.), *Dyslexia, fluency, and the brain* (pp. 333–335). Timonium, MD: York Press.
- TORGESSEN, J.K., WAGNER, R.K., RASHOTTE, C.A., ALEXANDER, A.W., & CONWAY, T. (1997). Preventive and remedial interventions for children with severe reading disabilities. *Learning Disabilities: A Multidisciplinary Journal*, 8, 51–61.
- U.S. DEPARTMENT OF EDUCATION. (2005). The Office of Special Education and Rehabilitation Services. Retrieved June 22, 2005, from <http://www.ed.gov/about/offices/list/osers/index.html>
- VAUGHN, S., & FUCHS, D. (2003). Redefining learning disabilities as inadequate response to instruction: The promise and potential problems. *Learning Disabilities Research & Practice*, 18, 137–146.

VAUGHN, S., LINAN-THOMPSON, S., & HICKMAN, P. (2003). Response to instruction as a means of identifying students with reading/learning disabilities. *Exceptional Children*, 69, 391–409.

VAUGHN, S., MATHES, P., LINAN-THOMPSON, S., CIRINO, P., CARLSON, C., FRANCIS, D., ET AL. (in press). First-grade English language learners at-risk for reading problems: Effectiveness of an English intervention. *Elementary School Journal*.

#### AUTHORS' NOTE

This research was supported in part by a grant (Grant # R305M030052) from the U.S. Department of Education, Institute of Education Sciences (IES) on Teacher Quality in Reading.