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Introduction

The promise and potential challenges of RTI: Data-based evaluations of the concept and related practices

The use of IQ-achievement discrepancy procedures for the identification of children with learning disabilities (LD), and more specifically reading disabilities (RD), has come under widespread and persistent criticism (Francis et al., 2005). With the recent reauthorization of the Individuals with Disabilities Act, states now have the option of discontinuing use of IQ-achievement discrepancy procedures as part of the RD identification process in favor of a response to intervention (RTI) approach. RTI is based on the premise that students are identified as RD when their response to an effective educational intervention is dramatically inferior to that of peers (Fuchs & Fuchs, 1998). RTI advocates suggest the following advantages of an RTI model for RD identification: (a) an earlier identification of RD to avoid a "wait to fail" model, (b) a strong focus on providing effective instruction and improving student outcomes, and (c) a decision-making process supported by continuous progress monitoring of skills closely aligned with desired instructional outcomes (Fletcher, Coulter, Resschly, & Vaughn, 2004; Vaughn & Fuchs, 2003).

An important feature of RTI is its multi-tier structure: primary prevention refers to classroom instruction (tier-one); secondary prevention usually involves more intensive small-group instruction (tier-two); and tertiary prevention denotes most intensive instruction (tier-three). Students demonstrating unsatisfactory progress in the regular classroom enter more intensive secondary prevention. In most RTI models, this involves one or more rounds of small-group tutoring in which instruction is driven by evidence-based practice. Students who do not respond adequately to this secondary prevention are seen as demonstrating "unexpected failure" and become candidates for the most intensive, tertiary prevention. In most RTI frameworks, secondary prevention represents the best opportunity to boost at risk student's academic performance, enabling them to successfully re-enter general instruction. It also serves as a test of the child's capacity to learn in a more supportive, explicit, systematic instructional environment. Those chronically unresponsive to primary and secondary prevention are viewed as requiring individualized, data-based, and recursive tertiary prevention. Despite RTI's popularity and promise, many questions about how to implement it effectively and efficiently remain unanswered. Some of the more critical questions addressed in this special issue include: Who should enter the RTI process?; What is a valid and practical method of monitoring responsiveness to instruction/intervention and how should cut-points be established?; Can RTI be implemented beyond elementary school?; and How should school systems prepare personnel for RTI implementation? The articles presented in this special issue represent the most current thinking regarding these issues.

Considering first the question of who should enter the RTI process? Samuelsson, Byrne, Wadsworth, Corley, DeFries, Willcutt, Hulslander, and Olson present behavioural-genetic data in reading and spelling across kindergarten and Grade 1 from a longitudinal twin sample tested in the United States, Australia, and Scandinavia. Results indicate that the onset of formal reading instruction coincides with an increase in genetic influence on individual differences in literacy development. Results suggest that as early reading instruction becomes more effective in schools, the proportion of children identified as unresponsive to instruction should increasingly be accounted for by capabilities within the child. Extrapolating results downward it seems reasonable to assume that RTI may be successful in kindergarten, or perhaps earlier, if systematic instruction in reading is implemented.

However, even though genes are highly related to individual differences in children's response to instruction, it does not necessarily follow that the identification of children who are unresponsive to effective instruction is a trivial task. The success of RTI, both in terms of prevention and identification, hinges on the accurate determination of a risk pool of children to enter tier-two intervention. Identification of a risk pool of kindergarteners and first graders facilitates their participation in second-tier intervention prior to the onset of significant reading problems, and increases the possibility that they will establish and maintain normal levels of growth in critical early reading skills. Several of the studies in this special issue examined the issue of how to identify children who are unresponsive to instruction. In the second study Barth, Stuebing, Anthony, Denton, Mathes, Fletcher, and Francis examine the extent to which operationalizations of response to intervention (RTI) overlap and agree in identifying adequate and inadequate responders in first grade children. Results clearly indicate that cut-point is the most significant determinant of responder status. Barth et al. argue in favor of using multiple criteria for determining responder status and major decisions like special education status.

In the third study Schatschneider, Wagner, and Crawford compared the predictive validity of measures of achievement status, growth, and both achievement status and growth, in a two-year, longitudinal study beginning in first grade. Results suggest that growth does not uniquely predict reading development above and beyond what can be obtained using a single time point. These results argue for benchmarking approaches to identification of the risk pool. However, reliance on benchmarking procedures alone removes the decision-making and instructional modification processes afforded by progress monitoring procedures that have been demonstrated to improve student outcomes (see Deno, 2003; Fuchs & Fuchs, 1998, 1999). Further exploration into the most efficient way to both identify the pool of at risk children and structure effective instruction based on formative evaluation data for this group of children is warranted.

Shapiro, Solari, and Petscher continue this basic theme in the fourth study of the issue. The authors examined the diagnostic validity

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of various screening measures for identifying risk of poor performance on state high stakes assessments of reading in grades 3 through 5. Previous research has tended to rely almost exclusively on passage oral reading fluency (ORF) as a proxy for reading skill development in grades 2–6. ORF represents a unique reading skill that is linked to both lower-level word identification and higher-level reading comprehension skills. The strong link between ORF and comprehension and the relative ease of assessing ORF over comprehension has allowed ORF assessments to be used as proxies to monitor student growth in reading. However, results from Shapiro et al. indicate that adding a measure of reading comprehension improves the classification accuracy of students at risk for reading failure above and beyond the use of oral reading fluency alone. These results question the use of a single component of reading skill to predict child risk of reading failure and instead support Barth et al. conclusions that multiple measures are needed to accurately classify children in risk groups.

Taking a somewhat different approach in the fifth paper of the series, Compton, D. Fuchs, Fuchs, Elleman, and Gilbert examined an important group of children who may be missed by the early identification procedures associated with RTI. Compton et al. used latent transition analysis to identify students who did not display reading disability (RD) until later in elementary school. These so called "late-emerging" RD children present a particular challenge to the early identification and prevention aims of RTI. Children with late-emerging RD, by definition, are not identified as at risk during early screening procedures and therefore represent false negatives. These false negatives undermine the intent of the RTI process by depriving at-risk children of the early intervention they require. Results from the study suggest that late-emerging children exist and cannot be simply considered as late-identified. Unfortunately, Compton et al. were unable to accurately identified children who would develop late-emerging RD using indicator variables assessed in fall of first grade.

In the sixth paper, Vaughn, Fletcher, Francis, Denton, Wanzek, Cirino, Barth, and Romain move us into uncharted territory by examining what RTI might look like for older children. This question has been generally ignored by researchers, but answers are paramount for secondary school personnel who are in the process of moving to an RTI approach for older students. One of the problems facing secondary school personnel implementing a RTI system to the identification and treatment of older students is the large variation in reading-related difficulties in older students; such as limited vocabulary and concept knowledge, lack of knowledge of comprehension strategies for reading diverse text types, and low motivation for reading. Vaughn et al. describe an approach to enhanced literacy instruction for middle school students that includes the essential components of any RTI model: universal screening, progress monitoring, and multitiered instructional service delivery. This description provides a blueprint for those interested in examining issues of implementing a RTI approach in secondary schools.

Scanlon, Gelzheiser, Vellutino, Schatschneider, and Sweeney wrap up this special issue by exploring the influence of instruction on children's risk status by contrasting the effects of professional development of general education teachers and providing tier-two intervention to at risk kindergarten children. While it is widely held that effective classroom instruction should decrease the prevalence of early RD, little research has examined the characteristics of classroom instruction or the potential effectiveness of professional development for classroom teachers in helping to reduce the incidence of early RD within a RTI model. Scanlon et al. report that professional develop and tier-2 intervention, both separately and in combination, were effective in helping to substantially reduce the incidence of early reading difficulties. Results suggest providing PD for kindergarten classroom teachers as the first phase of providing effective instruction to at risk readers.

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