Psicothema 2010. Vol. 22, nº 4, pp. 943-948
www.psicothema.com

ISSN 0214 - 9915 CODEN PSOTEG

Response to intervention: Are the Emperor's clothes really new?

Suzanne Carreker and R. Malatesha Joshi*
Neuhaus Education Center and * Texas A & M University

With the reauthorization of the Individuals with Disabilities Education Act in 2004, Response to Intervention (RTI) was officially introduced. Unlike the discrepancy model, which determines eligibility in special education with a discrepancy between achievement and ability, RTI was designed to provide intensive instruction to students in the general classroom as soon as difficulties in acquiring requisite reading skills are detected. The proposed goals of RTI include the improvement of reading achievement and the identification of students with learning disabilities (LD). Although RTI holds promise for the former goal when certain conditions are met, the latter goal is more elusive. The Component Model of Reading (CMR) is described in the current paper as an alternative to the discrepancy model and RTI. CMR, which consists of three domains, evaluates a poor reader's performance multidimensionally, so the most appropriate instruction for the reader can be designed to ensure reading success. Empirical evidence of CMR is presented.

Respuesta a la intervención: ¿son realmente nuevos los vestidos del emperador? Con la reautorización de la Ley de Educación para Individuos con Discapacidades en 2004, el modelo Respuesta a la Intervención (RTI) fue presentado oficialmente. A diferencia del modelo de discrepancia, que determina que para ser elegible en educación especial el alumno ha de presentar una discrepancia entre el rendimiento y la capacidad intelectual, RTI fue diseñado para ofrecer una instrucción intensiva a los estudiantes en el aula ordinaria tan pronto se comience a detectar la presencia de dificultades para la adquisición de la lectura. Los objetivos que se proponen en la intervención incluyen la mejora del rendimiento en lectura y la identificación de los alumnos con dificultades específicas de aprendizaje (DEA). A pesar de que RTI es un modelo prometedor para el primer objetivo cuando se cumplen ciertas condiciones, en cambio no lo es para el segundo objetivo. El Modelo de Componentes de la Lectura (CMR) se presenta en este trabajo como una alternativa al modelo de discrepancia y al modelo RTI. CMR, que contempla tres dominios, evalúa el desempeño de un lector desde una perspectiva multidimensional, lo que facilita que se pueda proporcionar una instrucción más adecuada al lector con mayor garantía de éxito. Evidencia empírica a favor del modelo CMR se presenta en este trabajo.

With the most recent reauthorization of the Individuals with Disabilities Education Act (IDEA) in 2004, Response to Intervention (RTI) was officially introduced as an alternative model for the identification of students with learning disabilities (LD). At last, the Emperor would have new clothes! The discrepancy model, which traditionally established eligibility for special education services, had been deemed a «wait-to-fail» model (Aaron, 1997; Fuchs & Fuchs, 2006a). In contrast, RTI purportedly would allow appropriate intervention to begin as soon as difficulty in acquiring any requisite reading skill (e.g., phonemic awareness, instant word recognition, fluency, text comprehension) was detected. Intensive intervention could begin in the general education classroom without the need to wait for a diagnosis and specific educational prescription. Fuchs and Fuchs (2006b) described RTI as a multi-tiered system designed to prevent long-term academic and social failure. Only students not responding to the instruction would be considered for eligibility in special education, which would greatly reduce the number of referrals for special education placement (Fuchs, Mock, Morgan, & Young, 2003).

However, six years later, did the Emperor really get new clothes? As the implementation of RTI has unfolded since 2004, the realities of RTI do not always match expectations. The current paper will discuss 1) the rationale of RTI, 2) the evidence that RTI improves students' reading achievement, 3) the viability of RTI as a means of identifying students with LD, and 4) considerations for insuring that RTI fulfills its promise in preventing reading failure.

The rationale for RTI

Hinshelwood (1895) heightened awareness of LD 115 years ago with observations of students with unexpected reading difficulties. Almost 50 years ago, Kirk (1962) first proposed the term LD. The term became part of our educational vernacular with the passing of the Education for All Handicapped Children Act of 1975. When LD became an accepted form of disability, the need to determine how students would be identified as LD and, consequently, eligible

Fecha recepción: 8-6-10 • Fecha aceptación: 8-6-10
Correspondencia: R. Malatesha Joshi
College of Education and Human Development
Texas A & M University
77843-4232 Texas (Estados Unidos)
e-mail: mjoshi@tamu.edu

for special education services became paramount. Because the definition of LD included the description of «average or above average intelligence», the logical determination would be that a student with LD would demonstrate a discrepancy between expected achievement and actual achievement (Aaron & Joshi, 2009). The discrepancy would represent «unexpected underachievement».

Indeed, the practice for decades has been the classification of LD that rests on scores and cut-points to document that a student's achievement is not commensurate with his or her cognitive abilities. However, some researchers have argued that the use of test scores and cut-points are problematic in identification, because classifications based on scores and cut-points (i.e., IQ discrepancy) do not take into account the dimensional nature of learning disabilities, that is learning disabilities are not all or none in nature (Aaron, 1997), and the assessment instruments used are subject to measurement error (Fletcher, Denton, & Francis, 2005). Additionally, the assessment to determine eligibility is often only one measure in time (Francis et al., 2005). Lastly, the discrepancy model delays efficacious intervention until the student's achievement is discrepant (Aaron, 1997), which translates as learning failure.

In contrast to the discrepancy model, RTI models use a universal literacy screening to identify any students who are not keeping pace with their peers, provide immediate intensive instruction in the classroom for students identified as at-risk for reading failure, and utilize ongoing assessment. The «unexpected underachievement» is characterized as a response to instruction that is consistently poorer than would be expected from a reference group of students (Fletcher et al., 2005). Seemingly, RTI assuages concerns generated by the traditional discrepancy model as RTI takes into consideration the varying degrees of LD on a continuum, employs multiple measures, and preserves the definition of LD.

The inclusion of RTI in the Individuals with Disabilities Education Improvement Act (IDEIA, 2004) was a modification of the earlier IDEA (1990) legislation that outlined federal laws for eligibility. The inclusion of RTI has been viewed 1) as a positive step forward in redefining learning disabilities (e.g., Fletcher & Vaughn, 2009; Vaughn & Fuchs, 2003), 2) cautiously to preserve the construct of learning disabilities (e.g., Burns, Appleton, & Stehouwer, 2005; Reynolds & Shaywitz, 2009), and 3) with opposition to the need for change (e.g., Gerber, 2005; Kavale, Kauffman, Bachmeier, & LeFever, 2008). As states begin to implement RTI, there is great variation in how RTI is being implemented (Berkeley, Bender, Peaster, & Saunders, 2009). The question is can RTI ameliorate practices that have been in place for decades?

Evidence for RTI as an instructional model

Fletcher and Vaughn (2009) stated that the primary goal of RTI is the improvement of students' reading achievement through intensive evidence-based interventions, and the secondary goal of RTI is the identification of LD. A guiding premise of RTI is that evidence-based practices should take priority over standard practices that have no research base. With the idea of evidence in mind, we look to the evidence that supports RTI models.

Given that RTI is relatively new to the educational landscape, few studies attests to the efficacy of RTI or small group interventions. Mathes et al., (2005) studied the effects of two different theoretical approaches to intervention – proactive and responsive. The proactive intervention was highly scripted with systematic and intertwined introductions of phonemic awareness, word recognition, and comprehension strategies. Responsive interventions had no predetermined scope and sequence. Teachers responded to data to design instruction that moved students within their zone of proximal learning. The two interventions proved to be equally effective and at-risk readers did make statistically significant gains over those students who received only the enhanced instruction. However, the intervention students continued to have scores that were lower than the typically developing students. The limitations of the study make replication questionable (e.g., an additional 40 minutes of supplemental instruction; high level of coaching and support by the authors of the interventions).

Coyne, Kame'enui, Simmons, and Harn (2004) examined the reading progress of first-grade students who had reading intervention in Kindergarten. The first-graders had been at risk for reading failure based on Kindergarten assessments but achieved benchmarks on phonological awareness and letter recognition by October of first grade. The students were randomly assigned to one of two instructions – code-based with supplementary intervention or code-based instruction offered only in the classroom. The students performed the same in both groups. However, students who had not responded in kindergarten were not included in the present study. Their progress continued to lag behind the others in the group.

Burns et al., (2005) conducted a meta-analysis to study four different RTI models. However, the authors found inadequate sample sizes for some models, which made comparison of different models difficult. Burns et al., were cautious in their assessment of RTI, noting that more and controlled studies are needed to determine issues, such as placement in special education, length of intervention, and fidelity of implementation.

Wanzek and Vaughn (2007) conducted a meta-analysis of 18 reading interventions that demonstrated promise for RTI. Five of the intervention studies used experimental design. Thirteen of the intervention studies had sufficient data to calculate effect sizes. Effect sizes for the interventions were from medium to large. In particular, effect sizes were larger in the kindergarten and first-grade interventions, which support early intervention for the resolution of reading difficulties (Snow, Burns, & Griffin, 1998). Additionally, 14 of the interventions were implemented using school personnel for all or part of the implementation, which would bode well for replication. Because the students in the studies were already identified as having LD, the interventions in the meta-analysis did not lend support for the secondary goal of RTI as an identification model, but the meta-analysis provided evidence for RTI as an instructional model.

Although there is evidence of the efficacy of RTI as a means to improve students' reading achievement, this goal is predicated on the notion that there are highly knowledgeable teachers who can provide research-based literacy instruction that is adequately differentiated to meet the needs of diverse learners in all classrooms. Alarmingly, numerous studies have demonstrated that teachers do not always have sufficient knowledge of literacy-related content to teach reading and spelling effectively (cf., Moats, 1994). Insufficient literacy-related content knowledge, according to McCutchen and Berninger (1999), has resulted from inadequate preservice preparation on how to teach reading and spelling, and inservice training is rarely more comprehensive than preservice preparation. Additionally, a body of converging scientific evidence on effective practices of teaching reading and spelling was not

available to many teachers before the advent of reports such as Snow et al., (1998) and the National Reading Panel (NRP; 2000). However, even with existing scientific evidence, the preparation that preservice teachers receive continues to be incomplete or incorrect (Joshi, Binks, Graham et al., 2009a; Joshi, Binks, Hougen et al., 2009b).

Berkeley et al., (2009) stated that a concern is «…general educators do not currently have the background knowledge or skills needed to implement an RTI model even in beginning reading» (p. 94). Furthermore, Gerber (2005) cautioned that the RTI instruction that has been demonstrated experimentally cannot be meaningfully scaled and some of the manifestations of LD and the identification of those forms of LD are beyond the scope of identification through instruction. Beyond the specific use of instruction techniques and curricula, improving educational practices need to include teachers' motivation, knowledge, and skills.

Viability of RTI as an identification model

Haager, Klingner, and Vaughn (2007) stated that «RTI is the most promising method for identifying individuals with learning disabilities» (p. 5). However, not all researchers hold this view. For example, Velluntino, Scanlon, Zhang, and Schatschneider (2008) reported on an intervention that was presented in kindergarten (Tier II) and first grade (Tier III) to students were identified at the beginning of Kindergarten as at-risk. The students were tracked through first grade, where some students were found to be no longer at risk. Students who continued to be at risk were given intervention through first grade as Tier III. Only 16% experienced difficulties after second or third grades. These students could be classified as LD. Although the researchers deemed RTI superior to traditional cognitive models, the researchers had to take into account the complexity of the model. RTI was more effective for identification; however, it began intensely in Kindergarten, and there were many false positives.

Schatschneider, Wagner, and Crawford (2008) compared the predictive measures of achievement status versus growth and predictive measures of achievement with growth of first-grade students in an at-risk school. First-grade oral reading fluency growth was not found to be predictive of later reading success. Furthermore, Schatschneider et al. found scant evidence supporting the reliability of the RTI model and noted that teacher quality and differential effectiveness of instruction negatively affect the model. Additionally, the much-maligned use of cut-points in the discrepancy model has not been eliminated because there must be cut-points to determine who moves through additional tiers. The authors did not advocate a return to the discrepancy model, rather they were skeptical of the lack of evidence supporting RTI as an identification model.

Al Otaiba et al., (2009) investigated the growth in oral reading fluency for three groups of Latino students: 1) those receiving ESL services, 2) those exited from ESL services, and 3) those designated not needing ESL services. The oral reading fluency level, not slope, reliably differentiated students with LD compared to SL (speech-language delays) or general education students. A caveat is that oral reading fluency is useful in determining student growth under the RTI model, but may not be sufficient for identification of LD.

Reynolds and Shaywitz (2009) cited «lack of a trustworthy evidence base» (p. 130), scaling issues in terms of fidelity and treatment, and the «dangerous slippery slope of an RTI definition of LD» (p. 139) among the issues that need to be carefully considered. Reynolds and Shaywitz contended that IQ is relevant in the diagnosis of LD, because it differentiates slow learners from students with LD, such as dyslexia. If, as proposed in RTI, a student's «unexpected underachievement» is determined in comparison to the progress of his or her reference group, then the student's disability is dependent upon the overall cognitive ability of the reference group. Hence, a bright student in a group of students with average or below-average cognitive abilities will not stand out as a student needing specialized instruction.

Kavale et al., (2008) reviewed the purpose of RTI and the importance of appropriate identification of LD and echoed the concerns of Reynolds and Shaywitz (2009). Kavale et al. contented that RTI is best viewed as an instructional model, not an identification model and should not be the basis for LD identification. As Kavale et al., stated, «…RTI is not a proxy for SLD [Specific Learning Disabilities] but, unlike discrepancy, which validates the presence or absence of an accepted construct (i.e., underachievement), RTI can only validate the self-evident fact that a student is experiencing reading problems» (p. 142). Additionally, Kavale et al. stated, «The dearth of research literature on RTI as an identification process suggests either that RTI is difficult to conceptualize as a diagnostic model or that there is limited interest in doing so» (p. 146). The authors concluded that it may be that as states respond to the RTI mandate, both RTI and cognitive assessments will be used to meet the eligibility guidelines outlined in IDEIA.

Feifer (2008) reviewed the basic assumptions and components of RTI as an alternative to the discrepancy model. The primary advantage of RTI is that this model reduces over-identification of minority students and the disproportionate number of minority students in special education. The primary advantage of the neuropsychological model in eligibility for special education is the comparison of a student to his or her ability, so proper intervention can be prescribed. The models, Feifer contended, are two sides of the same coin on issues such as early invention and evidence-based identification techniques. However, both models have their shortcomings as identification models. In the end, Feifer concluded as did Kavale et al., (2008) that a fusion of the two models provides the most well-rounded evaluation of a student's abilities and academic needs to determine if placement in special education is appropriate.

A possible solution

Existing evidence suggests that the primary goal of RTI as an instructional model is achievable, with the caution that appropriate preparation of teachers at the preservice and inservice levels and necessary procedures and policies at school, district and state levels be in place. However, RTI as a diagnostic or identification model, the secondary goal, lacks the same compelling evidence that students with LD will be identified any earlier than with the discrepancy model (Wagner, 2009). Many of the issues found in the discrepancy model are not yet resolved through RTI. As Wagner stated, «Although identification models based on response to instruction appear potentially promising, the notion that they represent real progress for identification and intervention for children with dyslexia should be considered a *popular myth* [italics added] until evidence from rigorous evaluation is available» (p. 188).

Because the discrepancy model dichotomizes poor readers as readers with LD and readers without LD (Aaron & Joshi, 2009), the model fails to consider the dimensional nature of reading (i.e., not all or none). Additionally, although RTI advocates the multidimensional nature of reading (i.e., a multitude of variables that influence reading development), many dimensions that are the focus of identification in RTI are limited to aspects of beginning reading that may not predict later reading success (Catts, Petscher, Schatschneider, Bridges, & Mendoza, 2009). Instead, what may predict later reading performance better, according to Aaron, Joshi, Boulware-Gooden, and Bentum (2008), is a combination of three factors or domains– the *cognitive* (e.g., phonemic awareness, decoding, vocabulary, comprehension), the *psychological* (e.g., motivation, locus of control, teacher expectations), and the *ecological* (e.g., home environment, culture, parental involvement, dialect). These domains predict later reading performance and can be used to assess reading difficulties.

The component model of reading

When evaluating the performance of a poor reader, a comprehensive approach, that is both dimensional and multidimensional, is required because not all poor readers will be alike and the origins of their reading difficulties will be varied (Aaron, Joshi, & Williams, 1999; Catts, Hogan, & Fey, 2003). Questions that need to be answered are 1) where on a continuum between a soundly proficient reader and an absolute nonreader does the poor reader fall, and 2) how does the poor reader perform on, or how is the reader impacted by components within the cognitive, psychological, and ecological domains? It is in answering these questions that the «*why is the reader struggling?*» and «*now what do we do*?» can be answered. The Component Model of Reading (CMR; Aaron et al., 2008) is a possible solution to the dilemma of how best to help struggling readers, because the model utilizes the cognitive, psychological, and ecological domains to identify the cause or causes of reading difficulties. CMR proves to enhance the instructional goal of RTI by providing a definitive description of a poor reader's performance on multiple components and potential underlying causes for the reader's difficulties. However, instead of identifying the poor reader as a reader with or without LD, the reader's overall profile is used to adjust and design the most appropriate instruction for the reader. As Aaron et al. (2008) stated, «…CMR provides a framework for teachers and psychologists for navigating their course through the various assessment formats and determining remedial strategies for use in the classroom» (p. 69).

CMR was inspired by the Gough and Tunmer's (1986) Simple View of Reading (SVR), which denoted two constituents of reading – decoding (D) and linguistic comprehension (L). Although not refuting the complexity of learning to read and many other variables that influence reading development, SVR succinctly and simply explained the information-processing aspect of reading (R) as deciphering the print and attaching meaning to the deciphered print, which leads to successful reading (i.e., $R = D \times L$). Failure in decoding or deciphering print leads to overall reading failure as does failure in attaching meaning to the deciphered print. CMR is an extension of SVR that includes other influential factors. To understand how CMR works, an understanding of the three domains illustrated in Figure 1 is in order.

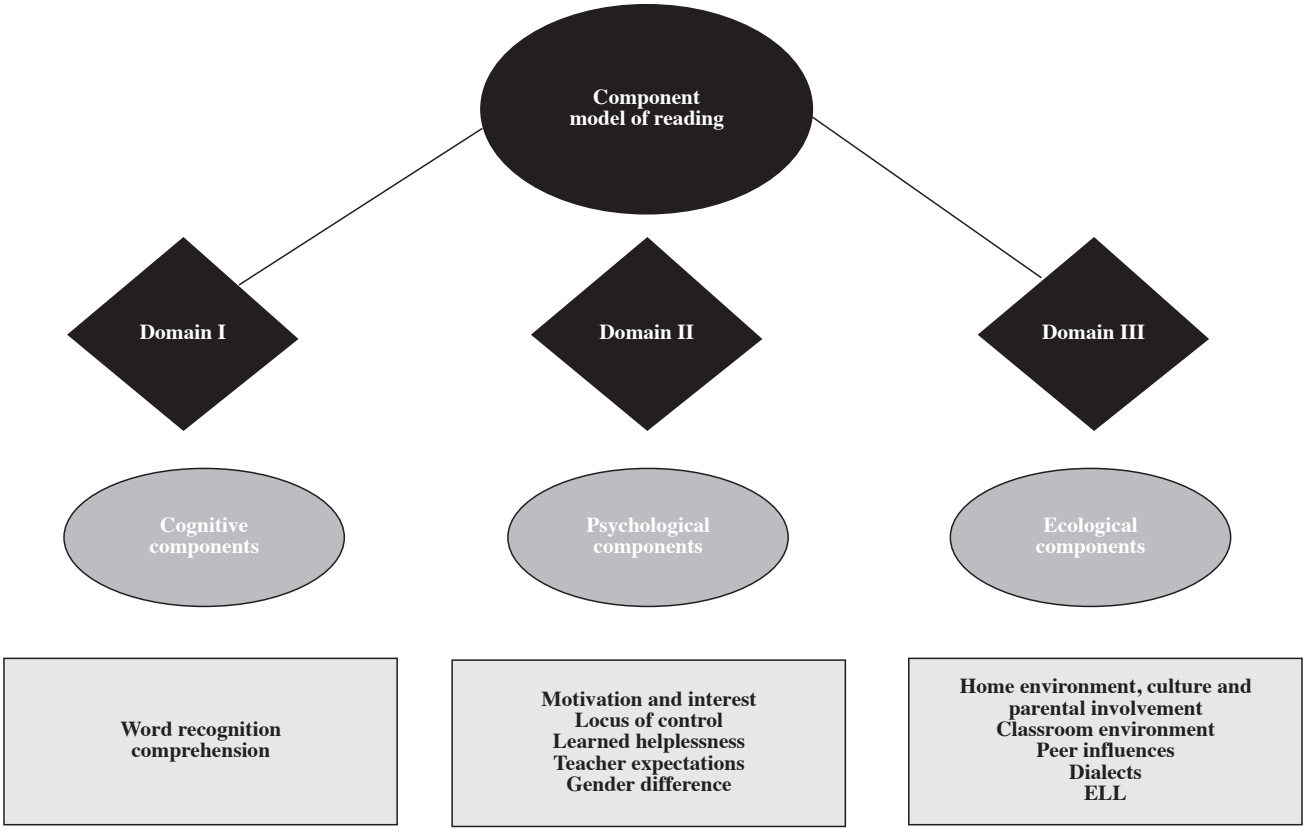

Figure 1. *An overview of the component model of reading*

The domains of CMR

The psychological domain includes components such as motivation and interest, locus of control, learned helplessness, teacher expectation, and gender differences (Aaron et al., 2008).

An example of the psychological domain includes how students perceive the locus of control – internally or externally. When students feel they control an outcome, the locus is internal. When students feel that control is due to chance or the control of others, the locus is external. Internal control can boost self-efficacy and motivation. A classroom that is structured to the needs of students can provide students with a sense of internal control, which increases motivation and self-efficacy and motivation (Aaron & Joshi, 2009).

The second domain, the ecological domain, includes home environment and culture, parental involvement, classroom environment, dialect, and speaking English as a second language (Aaron et al., 2008). Home environment is an example of a component in this domain and includes factors such as the quantity and quality of reading materials available, quantity and quality of parent-child verbal interactions, educational levels of the parents, number of hours spent watching television, and absenteeism. Additionally, the teacher needs to be aware of students with regional or socially distinctive varieties of language (e.g., a particular accent, grammatical structures, sound substitutions or deletions) and students learning English as a second language. Often these students experience decoding and spelling difficulties that masquerade as symptoms of reading disability and may require specific attention to deal with or resolve their decoding and spelling difficulties (Aaron & Joshi, 2009).

The cognitive domain mirrors the simple view of reading (Gough & Tunmer, 1986) with the components of word recognition and comprehension (Aaron et al., 2008). Word recognition encompasses decoding words that have reliable patterns and the instant recognition of words held in memory. Comprehension is a generic term for both listening and reading comprehension. Poor readers may have difficulties with one or both components. Poor readers who have difficulties with comprehension may lack comprehension strategies and/or adequate vocabulary. According to Aaron and Joshi (2009), CMR identifies the weak component or components that underlies reading difficulties and focuses instruction to the remediation of the weak component or components.

Validation of the CMR

A seven-year study of 330 students in Grades 2 through 5 provides evidence of the efficacy of CMR (Aaron et al., 2008). Of the 330 students, 171 students were instructed in a remedial program based on CMR (treatment), and 159 students were identified with LD based on the discrepancy model and were instructed in resource room settings (comparison). The students in the treatment group were matched with students in the comparison group grade by grade. The ethnic composition and SES of the two groups were comparable, with the exception of 2% of students in the comparison group who were Native American or Asian.

The comparison group (n = 159) was comprised of students from Oklahoma, Illinois, and Washington state. The pre- and post-test reading scores of these students were obtained from the files of the students' respective school districts during the period of 1998 through 2004. The post-tests were administered 3 years after the pretests. Students in the comparison group were given a variety of reading instruction methods in small groups for an hour a day. Instruction was described in generalities and did not target specific weaknesses of students. In fact, during the diagnostic process, once students demonstrated a discrepancy between achievement and ability, no other reading tests were given. Without additional testing, a comprehensive view of each student's weaknesses in reading was not available and instruction could not be tailored expressly for each student's needs. This, in fact, is a concern Reynolds and Shaywitz (2009) expressed about the narrow assessment of academic skills in RTI. Such assessment does not give enough information about a student's strengths and weaknesses.

The students in the treatment group (n = 171) were from seven different cohorts taught over 7 years, from 1998-2005, in a midsize Midwest town. The students were grouped for instruction in a special remedial program using the domains and components of CMR – 125 students received word recognition instruction and 46 received reading comprehension instruction. Students were taught in small groups by graduate students with specialized reading knowledge for an hour a day, 4 days a week for 3½ months. Students with below-average word attack and spelling scores were given instruction in word recognition skills as were students who had listening comprehension scores that were higher than their reading comprehension scores. Students with below-average listening and reading comprehension and word attack scores in the average range were given instruction in comprehension. Students with deficits in both word recognition skills and comprehension began with word recognition instruction and then moved to comprehension instruction. Aaron et al., (2008) provides complete descriptions of the assessment and instructional programs for both groups. In addition to pre-testing, parents were interviewed to ascertain noncognitive reasons for the students' reading difficulties.

Comparison of the two groups produced several findings. For the students with word attack and spelling deficits who received differential instruction in word recognition (i.e., treatment), a repeated measures ANOVA showed that gains in word recognition for these students was statistically significantly higher ($F_{1, 106}$ = 0.147, p<.006, η^2 = 0.4) than for the students in the comparison group. Additionally, students with word attack and spelling deficits in the treatment group also demonstrated statistically significantly higher scores in comprehension ($F_{1, 220}$ = 13.05, p<.001, η^2 = 0.56) than the students in the comparison group. Lastly, the comprehension skills of students who received differentiated instruction in comprehension scored statistically significantly higher ($F_{1, 141}$ = 3.855, p<.05, η^2 = 0.26) than students in the comparison group. This study demonstrates that CMR identifies the underlying causes of the reading difficulties and the most appropriate instruction.

Conclusion

Initially, RTI was hailed as a model for both the improvement of reading achievement and the identification of students with LD. Although there is potential for improving reading achievement, RTI could fall short if assessment of reading difficulties is too narrow (Reynolds & Shaywitz, 2009). Evidence currently available suggests that RTI as the mainstay for the identification of students with LD does not hold the promise it once seemed to hold. Here, the Emperor is without clothes! It is doubtful that RTI will identify

students with LD any earlier than the discrepancy model (Wagner, 2009). Cut-points still exist in RTI to determine who moves through additional tiers (Schatschneider et al., 2008). Furthermore, without consideration of IQ or some cognitive ability marker in RTI, a bright student's «unexpected underachievement» is dependent on the cognitive abilities of his or her peers (Reynolds & Shaywitz, 2009). CMR overcomes the limitations of RTI by providing a comprehensive and multidimensional evaluation of a student's reading difficulties, the underlying causes of the difficulties, and the remedial instruction that will improve reading achievement. Key limitations of CMR include 1) the reality that many of the components of the domains are beyond the control of the teacher, and 2) the need for highly knowledgeable and skilled teachers for successful implementation of CMR.

References

Aaron, P.G. (1997). The impending demise of the discrepancy formula. *Review of Educational Research, 67*, 461-502.

Aaron, P.G., & Joshi, R.M. (2009). Why a component model of reading should drive instruction. *Perspectives, 35*, 35-40.

Aaron, P.G., Joshi, R.M., Boulware-Gooden, R., & Bentum, K. (2008). Diagnosis and treatment of reading disabilities based on the component model of reading: An alternative to the discrepancy model of reading. *Journal of Learning Disabilities, 41*, 67-84.

Aaron, P.G., Joshi, R.M., & Williams, K.A. (1999). Not all reading disabilities are alike. *Journal of Learning Disabilities, 32*, 120-127.

Al Otaiba, S., Petscher, Y., Pappamihiel, N.E., Williams, R.S., Dyrlund, A.K., & Connor, C. (2009). Modeling oral reading fluency development in Latino students: A longitudinal study across second and third grades. *Journal of Educational Psychology, 101*, 315-329.

Berkeley, S., Bender, W.N., Peaster, L.G., & Saunders, L. (2009). Implementation of response to intervention: A snapshot of progress. *Journal of Disabilities, 42*, 85-95.

Burns, M.K., Appleton, J.J., & Stehouwer, J.D. (2005). Meta-analytic review of responsiveness-to-intervention research: Examining field-based and research-implemented models. *Journal of Psychoeducational Assessment, 23*, 381-394.

Catts, H.W., Hogan, T.P., & Fey, M.E. (2003). Subgrouping poor readers on the basis of individual differences in reading-related abilities. *Journal of Learning Disabilities*, 36, 151-165.

Catts, H.W., Petscher, Y., Schatschneider, C., Bridges, M.S., & Mendoza, K. (2009). Floor effects associated with universal screening and their impact on the early identification of reading disabilities. *Journal of Learning Disabilities, 42*(2), 163-176.

Coyne, M.D., Kame'enui, E.J., Simmons, D.C., & Harn, B.A. (2004). Beginning reading intervention as inoculation or insulin: First grade reading performance of strong responders to kindergarten intervention. *Journal of Learning Disabilities, 37*, 94-104.

Denton, C.A., Vaughn, S., & Fletcher, J.M. (2003). Bringing research-based practices in reading intervention to scale. *Learning Disabilities Research & Practice, 18*, 201-211.

Feifer, S.G. (2008). Integrating response to intervention (RTI) with neuropsychology: A scientific approach to reading. *Psychology in the Schools, 45*, 812-825.

Fletcher, J.M., Denton, C., & Francis, D.J. (2005). Validity of alternative approaches for the identification of learning disabilities: Operationalizing unexpected underachievement. *Journal of Learning Disabilities, 38*, 545-552.

Fletcher, J.M., & Vaughn, S. (2009). Response to intervention: Preventing and remediating academic difficulties. *Child Development Perspectives, 3*, 30-37.

Francis, D.J., Fletcher, J.M., Stuebing, G., Lyon, G.R., Shaywitz, B.A., & Shaywitz, S.E. (2005). Psychometric approaches to the identification of LD: IQ and achievement scores are not sufficient. *Journal of Learning Disabilities, 38*, 98-108.

Fuchs, D., & Fuchs, L.S. (2006a). Introduction to response to intervention: What, why and how valid is it? *Reading Research Quarterly, 41*, 93-99.

Fuchs, L.S., & Fuchs, D. (2006b). A framework for building capacity for responsiveness to intervention. *School Psychology Review, 35*, 621-626.

Fuchs, D., Mock, D., Morgan, P. L., & Young, C.L. (2003). Responsiveness-to-intervention: Definitions, evidence and implications for the LD construct. *Learning Disabilities Research & Practice, 18*, 157-171.

Gerber, M. M. (2005). Teachers are still the test: Limitations of response to instruction strategies for identifying children with learning disabilities. *Journal of Learning Disabilities, 38*, 516-524.

Gough, P., & Tunmer, W. (1986). Decoding, reading and reading disability. *Remedial & Special Education, 7*, 6-10.

Haager, D., Klingener, J., & Vaughn, S. (Eds.) (2007). *Evidence-based reading practices for response to intervention*. Baltimore: Brookes.

Hinchelwood, J. (1895). Word-blindness and visual memory. *The Lancet, 21*, 1564-1570.

Individuals with Disabilities Education Act of 1990, 20 U.S.C. § 1400 *et seq* (1990).

Individuals with Disabilities Education Imporvement Act of 2004, II.R. 1350, 108 Cong., 2nd Sess (2004).

Joshi, R.M., Binks, E., Graham, L., Ocker-Dean, E., & Smith, D. (2009a). Do textbooks used in university reading education courses conform to instruction recommendations of the National Reading Panel. *Journal of Learning Disabilities, 42*, 458-463.

Joshi, R.M., Binks, E., Hougen, M., Dahlgren, M.E., Ocker, E., & Smith, D. (2009b). Why elementary teachers might be inadequately prepared to teach reading. *Journal of Learning Disabilities, 42*, 392-402.

Kavale, K.A., Kauffman, A.S., Bachmeier, R.J., & LeFevers, G.B. (2008). Response- to- intervention: Separating the rhetoric of self-congratulation from the reality of specific learning disability identification. *Learning Disabilities Quarterly, 31*, 135-150.

Kirk, S.A. (1962). *Educating exceptional children*. Boston: Houghton Mifflin.

Mathes, P.G., Denton, C.A., Fletcher, J.M., Anthony, J.L., Francis, D.J., & Schatschneider, C. (2005). The effects of theoretically different instruction and student characteristics on the skills of struggling readers. *Reading Research Quarterly, 40*, 148-82.

McCutchen, D., & Berninger, V. (1999). Those who know teach well: Helping teachers master literacy-related content knowledge. *Learning Disabilities Research and Practice, 14*, 215-226.

Moats, L.C. (1994). The missing foundation in teacher education: Knowledge of the structure of spoken and written language. *Annals of Dyslexia, 18*, 207-235.

National Reading Panel (NRP, 2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction*. Washington, DC: National Institute of Child Health and Human Development.

Reynolds, C.R., & Shaywitz, S. (2009). Response to intervention: Ready or not? Or, from wait-to-fail to watch-them-fail. *School Psychology Quarterly, 24*, 130-145.

Schatschneider, C., Wagner, R.K., & Crawford, E.C. (2008). The importance of measuring growth in response to intervention models: Testing a core assumption. *Learning and Individual Differences 18*, 308-315.

Snow, C.E., Burns, M.S., & Griffin, P. (Eds.) (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.

Vaughn, S., & Fuchs, L. (2006). A response to «Competing views: A dialogue on response to intervention. *Assessment for Effective Intervention, 32*, 58-61.

Velluntino, F.R., Scanlon, D.M., Zhang, H., & Schatschneider, C. (2008). Using response to kindergarten and first grade intervention to identify children at-risk for long-term reading difficulties. *Reading and Writing: An Interdisciplinary Journal, 21*, 437-480.

Wagner, R. (2008). Rediscovering dyslexia: New approaches for identification and classification. In G. Reid, A.J. Fawcett, F. Manis, & L.S. Siegel (Eds.): *The sage handbook of dyslexia* (pp. 174-191). Thousand Oaks, CA: Sage Publication.

Wanzek, J., & Vaughn, S. (2007). Research-based implications from extensive early reading interventions. *School Psychology Review, 36*, 541-561.