Highlighting the need for further response to intervention research in general education

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ABSTRACT

Response to Intervention (RtI) provides a framework for effective prevention and intervention at all achievement levels. RtI also allows school districts to use an alternative method for identifying students with disabilities, but there is a paucity of published empirical research aimed to inform RtI best practices among general educators. The purpose of this paper was to systematically review empirical RtI research with regard to research dissemination and specific foundational components. Specifically, 47 peer-reviewed articles describing policy, intervention, or tiered supports within RtI were reviewed for content related to the six foundational RtI components: (a) screening, (b) primary prevention, (c) secondary intervention, (d) tertiary intervention, (e) progress monitoring, and (f) multidisciplinary evaluation. The findings suggest most RtI research is conducted within the context of special education, and the subsequent articles are published in special education journals. Therefore, additional RtI research outlining evidence-based practices for the primary and secondary tiers of RtI need be disseminated to administrators and general educators, specifically focusing on all six implementation components.

Keywords: Response to Intervention, screening, progress monitoring, leveled instruction, evidence based practices

INTRODUCTION

Response to intervention (RtI) is a multi-tiered approach to instruction, intervention, and identification of students at-risk for school failure (Glover & DiPerna, 2007; Kovaleski, 2007; Kratochwill, Volpianski, Clements, & Ball, 2007; Marston, 2005; Stecker, Fuchs, & Fuchs, 2008). RtI was initially designed as an alternative, more accurate way to diagnose learning disabilities in students experiencing academic underachievement (Fuchs & Fuchs, 2006) and has recently been expanded as a preventative tool. RtI is based on a three-tier model in which students advance through progressively more intensive prevention and intervention phases if their learning and/or behavior difficulties do not improve with the evidence-based treatments offered at the less intensive tiers of intervention. Movement between tiers is individualized and based on progress monitoring data. The logic of the three-tiered approach implies that if a student cannot make academic gains using procedures that are evidence-based and shown to be effective with the majority of students, then the student could benefit from additional support (which is typically tailored to address deficit areas and presented in smaller groups, sometimes in addition to curriculum and instruction already in place). The multidisciplinary teams monitor student progress to determine movement towards more or less intensive tiers. As a student ascends through each successive tier with insufficient change (as determined by previously set decision rules) in performance, the team can refer the student for a special education evaluation based on a failure to respond to previous treatments.

RtI was included in the most recent authorization of the Individuals with Disabilities Education Improvement Act (IDEA 2008). As it is written, IDEA 2008 permits schools to use RTI as an alternative method for identifying students with learning disabilities (LD). Prior to this piece of legislation, schools primarily used the IQ-achievement discrepancy model to determine LD eligibility. The procedure for the discrepancy model was to assess a student's intelligence (e.g., IQ) and achievement after he or she failed to make academic progress over a significant period of time. In order to determine LD eligibility, many states required at least a 15-point discrepancy between scores on measures of intelligence and achievement. Opponents of the discrepancy model cited several problems with this model including a lack of consistently used criteria across districts/states, statistical problems with discrepancy calculations, and difficulties identifying young students with LD. Conversely, proponents of RtI argue that it allows for the early identification of students who may be at risk for academic difficulties (Fuchs & Fuchs, 2001).

Effective implementation of the RtI process requires a foundation of early intervention, tiered instruction with research-based interventions, collaboration with parents and school personnel, and progress monitoring assessments (Reutebuch, 2008). According to Fuchs and Fuchs (2007; 2001), successful RtI models should specifically include (a) screening, (b) primary prevention, (c) secondary, targeted intervention, (d) tertiary, individualized intervention, (e) progress monitoring, and (f) multidisciplinary evaluation and collaboration.

Because screening is administered to all students in a school or grade level, screening procedures are the responsibility of general educators. Completing academic and behavioral screening assessments help to identify students at-risk for failure (Fuchs & Fuchs, 2001). While school-wide state assessment data can be used as screening results, students may also be identified as at-risk by teacher /parent report, or through informal, brief assessment data.

The second RtI component is Tier 1 (primary) instruction. Most of the student population is expected to require only primary, school-wide supports and strategies. At this primary

prevention tier students receive general education supports and are monitored through regular screening procedures for deficits. General, Tier 1 classroom instruction is delivered by general educators with evidence-based academic programming and behavioral support. An example of Tier 1 instruction is typical grade-level published reading curricula.

Third, students identified as at-risk require early intervention through targeted, Tier 2 supports and strategies. Fuchs and Fuchs (2001) suggest eight weeks of targeted instruction for students identified at-risk at Tier 1. Although general educators deliver Tier 2 instruction, special educators, school psychologists, speech and language specialists, and other school personnel should collaborate with general educators to design and monitor this instruction. Tier 2, targeted instruction should occur in small groups for approximately 30 minutes per session, with three sessions per week (Fuchs & Fuchs, 2001). An example of Tier 2 instruction is small group reading sessions that meet for 30 minutes three times per week during library time, where the general education teacher uses an evidence-based phonics curriculum.

Fourth, students who are not responsive to Tier 2 instruction are referred for evaluation and subsequently, special education. Special education services are intensive, individualized, occur in a variety of classroom settings, and are designed by a multidisciplinary IEP team. An example of Tier 3, special education instruction is a special education teacher collaboratively teaching reading to an inclusive classroom where students with disabilities receive intensive strategies and supports within the general education classroom.

The fifth RtI component is progress monitoring. The RtI process requires data-based decision making for tier movement. Determining responsiveness or lack of responsiveness to the level and type of support delivered involves collecting appropriate types and amounts of data on students in specific deficit areas. An example of progress monitoring is using benchmark oral reading fluency (ORF) assessments throughout the school year.

Lastly, coordination of all five of the first components should be conducted through multi-disciplinary evaluation and team-based decisions. RtI teams discuss screening and progress monitoring results, design instruction for Tiers 1, 2, and 3, and continually evaluate the effectiveness of the RtI model in place.

Adherence to this multi-component model yields positive results in preventing and treating academic and behavioral deficits, but adherence all requires participation in the RtI process across general and special education. Buy-in is one factor in increasing adherence to an intervention. In a recent survey of the perceptions of the RtI process by school staff members, researchers investigated who initiates the RtI process, the process for developing goals and interventions, and strategies for documenting and collecting data (Martinez & Young, 2011). Results from this study indicate school personnel generally approve of the RtI process but struggle with progress monitoring, providing appropriate interventions, and data-based decision making. Improvements in these areas are necessary for maintaining a high level of adherence to the RtI process.

For administrators, general educators, and special educators to be proficient at RtI implementation, sufficient literature supporting RtI implementation across these three groups should be available. The purpose of this study was to investigate the degree to which RtI research is published in journals targeted to school staff members in general and special education. General education represents two of the three primary RtI tiers, thus adequate amounts of published research describing RtI implementation in the primary and secondary tiers should be available to support practitioners and inform their practices. Further, RtI content described in the literature was also analyzed. Specifically, each of the six primary components of

RtI identified by Fuchs and Fuchs (2007) were explored. This study sought to answer three research questions:

1. How much of the literature concerning RtI is published in general education journals?
2. Of the literature concerning RtI published in general education journals, what proportion includes empirical research methodologies?
3. Of the literature concerning RtI published in general education journals, how often are each of the six foundational components of RtI included?

METHOD

Initial Search

The researchers began by identifying the following keyword search terms: (a) *response to* intervention; and (b) *response-to-intervention*. These search terms were then used by the researchers to conduct separate initial searches in the ERIC/EBSCO online database. The search was then refined through database sorting by choosing peer-reviewed academic journals published 2004 and 2011 by both researchers. The searches yielded a total of 528 articles for both researchers, resulting in 100% inter-rater agreement for the initial search.

Hand Searches

Next, the two researchers completed a basic hand search of the 528 identified articles to determine if all 528 articles discussed a RTI framework in the context of school settings. Of the 528 originally identified articles, 133 were kept through the initial hand search due to the predetermined exclusionary criteria of (a) early childhood education/ early intervention; (b) gifted education; (c) English Language Learners; and (d) initial findings of position pieces, conceptual pieces, and basic literature reviews. The two researchers conducted the basic hand search separately and compared results. The inter-rater agreement between researchers for this hand search was 90%.

Finally, the two researchers completed detailed hand searchers and coded the remaining articles for the 133 articles identified in the basic hand search applying the inclusionary criteria requirement of including only those articles with a research or strategic review component, excluding position pieces, conceptual pieces, and basic literature reviews. Researchers first coded the type of journal as (a) special education; (b) school psychology; (c) speech and language; or (d) general education. Next the researchers coded articles for article type, which included the following categories:(a) case study; (b) experimental study; (c) focus group; (d); survey; or (e) meta-analysis. Finally, the researchers coded the remaining articles for RTI components researched or discussed in the article: (a) screening; (b) primary prevention; (c) secondary prevention; (d) tertiary prevention; (e) progress/response monitoring; and (f) multidisciplinary evaluation. In order for an RTI component to be identified in an article the article had to present research about the specific component, or discuss the research in terms of the component. If a component was reviewed in the introduction to the research study but not revisited in the study itself or the discussion section, the component was not coded as present.

This detailed hand search resulted in all but 47 of the 133 articles identified in the basic hand search being excluded (see Table 1). Of the 47 that were included as the final number of research-based articles involving RTI components in general or special education, the

researchers tested inter-rater agreement on 20%. To complete inter-rater agreement, 20% of the articles were randomly chosen by each researcher and were given to the other researcher to check agreement on article coding (journal type, research type, and RTI components). Inter-rater agreement for this stage of the detailed hand search was 86%. Additionally, each researcher noted significant information included in articles that did not get recorded in the coding process (e.g. policy implementation study, focus on special education eligibility identification).

RESULTS

Journal Type

All of the 47 articles included in the final hand search were coded for type of journal that published the article in order to determine the primary audience for the research-based article. The 47 RtI articles were mostly (55%) published in special education journals (*n*=26). Psychology journals comprised 34% of the articles reviewed (*n*=16), and 10% of the articles (*n*=5) were published in general education journals. One article was published in a speech and language journal (2%).

Research Type

To address the need for empirical research, the 47 articles for the type of research conducted and reported in the article. Of the 47 articles, 55% (*n*=26) included an experimental research design. Another 11% (*n*=5) presented case studies of the RtI process. Survey studies made up 19% (*n*=9) of the articles reviewed. Three focus group studies were reviewed (*n*=6%). The remaining 8% (*n*= 4) articles were meta-analyses, survey studies, focus groups, or other mixed methodology studies.

RTI Components

All of the principal components of RtI presented by Fuchs and colleagues (Fuchs & Fuchs, 2001; Fuchs & Fuchs, 2007) were coded in this review to determine what aspects of RtI have been researched and discussed.

Screening. Of the 47 articles reviewed in the detailed hand search, 34% (*n*=16) discussed integrating screening into the RtI process through research or discussion of the research.

Primary prevention. Similar to the number of articles identified as including screening procedures, 30% (*n*=14) of the 47 articles reviewed included studying or discussing primary prevention in terms of instruction and support.

Secondary prevention. This component was present in 57% (*n*=27) of the 47 articles reviewed. Several articles researched secondary tier academic intervention specifically and several discussed secondary prevention in the 3-tiered RtI framework.

Tertiary prevention. While special education referral and identification was discussed throughout most of the 47 articles reviewed, tertiary prevention was only researched or discussed in 23% (*n*=11) of the articles reviewed.

Progress/response monitoring. The use of monitoring progress or response to levels of academic or behavioral interventions was researched or discussed in 64% (*n*=30) of the 47

articles reviewed. This component was most frequently identified of the six components included in the process.

Multidisciplinary evaluation. In contrast to the progress monitoring component, multidisciplinary evaluation and planning was only researched or discussed in 15% (*n*=7) of the articles reviewed, the lowest frequency of RtI components reviewed.

Additional results. In order to record pertinent information regarding the RtI process described in the articles, the researchers also noted important information not gathered through the coding process. The most frequent notation highlighted the RtI process being used for special education eligibility determination. Additional information noted included (a) fidelity to the RtI model; (b) reading and RtI; (c) training; (d) RtI in the social/behavioral domain; (e) problem solving versus standard treatment protocol approaches; (f) social validity of RtI; (g) teacher bias in referral and assessment; (h) policy implementation; (i) supplemental and tiered interventions separate from the RtI framework; and (j) teacher performance feedback.

DISCUSSION

In an article for the RTI Action Network (www.rtinetwork.org), Prasse (n.d.) contends "…While RTI began as a response to addressing student outcomes for special education students, it quickly emerged as a general education initiative, as obtaining successful outcomes for students requires an integrated education system that does not operate as two distinct entities." The goal of an "integrated educational system" is laudable and ambitious, but are review of the literature suggests that the majority of research and conceptual pieces about RTI are published in journals that target Special Educators and related service providers.

Although Prasse (n.d.) and other researchers have advocated for viewing RTI as a "general education initiative, only a small number of RTI-focused articles have been published in journals that address a broader audience, including general educators and educational leaders. This disparity may attributable to a variety of factors (e.g., limited funding to support RTI-related investigations by teacher education and educational leadership scholars or researchers' philosophical opposition to RTI models and procedures). Whatever the cause, the paucity of RTI-focused scholarship in fields beyond special education and school psychology is a barrier to successful implementation and sustainability of RTI.

Of the six RTI components, progress monitoring and targeted (secondary) inventions were most frequently investigated and discussed in the articles we reviewed. This may reflect the perceived level of importance researchers and policymakers place on these components in implementing RTI. Conversely, progress monitoring assessments and small-group interventions may be relatively easy to investigate, resulting in a larger number of studies of these components. Moreover, there were relatively few articles that investigated or described universal interventions (e.g., quality general education classroom instruction) within the context of RTI. There is a need for additional research on how the quality of classroom instruction contributes to (or undermines) the successful implementation of RTI models.

A few methodological limitations of this review should be considered. Throughout the search for articles focusing on RtI, the authors encountered inconsistent use of the terminology surrounding RtI. Due to terminology confusion, it is possible that articles focusing on RtI were not included in this review because the article was not identified in the search due to RtI not being a keyword or phrase in the title, which were required by the search.

An effective RtI model consists primarily of interventions, supports, and assessment in general education. The review presented in this study highlights the importance for additional research and information dissemination focusing on RtI applied in general education. Although RtI frameworks encourage educators to seek out and adopt evidence-based practices, the research to guide general educators in RtI implementation is scant at best. To insure the viability and sustainability of the RtI movement, committed researchers must address this gap in the literature.

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APPENDIX

Table 1. Article Review Descriptions

	Journal	Research	Screening	Primary	Secondary	Tertiary	Progress	Evaluation
AlOtaiba, 2011	SPED	Exp		X			X	
Ardoion, 2005	PSY	Exp	X	X	X		X	
Bolt, 2005	SPED	Case	X	X	X	X	X	
Burns, 2008	PSY	Other			X		X	X
Burns, 2010	PSY	Other					X	
Burns, 2005	PSY	Exp			X			
Calhoon, 2007	SPED	Exp			X			
Carney, 2008	SPED	Exp			X		X	X
Chapman, 2010	GEN	Survey		X	X	X	X	
Cheney, 2008	SPED	Exp	X	X	X		X	
Deno, 2009	SPED	Exp	X				X	
Denton, 2010	SPED	Exp	X		X		X	
Duff, 2008	GEN	Exp			X			
Duhon, 2009	PSY	Exp			X		X	X

Easton, 2011	PSY	Survey					X	X
Fairbanks, 2007	SPED	Exp		X	X	X	X	
Fletcher, 2011	PSY	Exp	X	X				
Goodman 2006	SPED	Other			X			X
Graves 2011	SPED	Focus			X			
Griffiths, 2009	SPED	Exp	X			X	X	
Hale, 2006	PSY	Case			X		X	
Johnson, 2011	GEN	Case						
Kelly, 2010	GEN	Survey			X	X	X	
Kerins, 2010	SLP	Exp			X			
Martinez 2011	SPED	Survey	X		X	X	X	X
Mellard, 2009	SPED	Survey	X				X	
Moors, 2011	SPED	Survey						
Pavri, 2009	SPED	Focus		X	X	X	X	
Powers, 2011	PSY	Case					X	
Sansoti, 2010	PSY	Survey					X	X
Sansositi, 2011	PSY	Focus	X		X			
Schatschneider, 2008	SPED	Exp	X	X			X	
Schuele, 2008	GEN	Exp		X	X			
Shepherd, 2006	SPED	Other						
Simmons, 2008	SPED	Exp					X	
Speece, 2010	SPED	Exp	X					
Sullivan, 2010	PSY	Survey						
Tran, 2011	SPED	Exp					X	
Tuckwiller,	SPED	Exp		X	X			

2010							
VanDerHeyden, 2005	PSY	Exp	X		X		X
Vaugh, 2009	SPED	Exp	X	X	X	X	
Vaughn, 2010	PSY	Exp		X	X		X
Vellutino, 2006	SPED	Exp	X				X
Volpe, 2011	PSY	Exp				X	X
Weston, 2010	SPED	Survey					
Wanzek 2009	SPED	Case			X	X	X
Wanzek 2011	SPED	Exp	X	X	X	X	X

Note. SPED= special education, PSY= school psychology, GEN= general education, SLP= speech and language, Exp= experimental