NASSP Bulletin
96(1) 5–22

DOI: 10.1177/0192636511430551
http://bul.sagepub.com

Response to Intervention in Secondary Schools: Considerations for Administrators

Seth A. King[1], Christopher J. Lemons[1], and David R. Hill[1]

Abstract

Secondary school administrators are increasingly finding themselves in the position of implementing Response to Intervention (RTI). This system of providing progressively intensive levels of intervention for the purposes of preventing academic failure and identifying children with learning disability may be useful at the secondary level. However, many aspects of RTI are based on research conducted in elementary schools. The purpose of this article is to provide a basic description of RTI, to summarize research conducted at the secondary level, and to provide a set of considerations for secondary administrators regarding RTI implementation.

Keywords

high school, literacy, middle level, Response to Intervention

In secondary schools, the need for effective models of delivering intervention to struggling readers is alarmingly apparent (Heller & Greenleaf, 2007). Data from the National Assessment of Educational Progress (NAEP; Perie, Grigg, & Donahue, 2005) have shown that while schools have enhanced their effectiveness with elementary-aged students, similar gains have not been observed for secondary-school students—leading some scholars to conclude that "the education system is not effectively preparing some adolescents for reading success" (Edmonds et al., 2009, p. 263). The Carnegie Corporation of New York's Council on Advancing Adolescent Literacy

[1]University of Pittsburgh, Pittsburgh, PA, USA

Corresponding Author:
Christopher J. Lemons, University of Pittsburgh, 230 S. Bouquet Street, 5162 Posvar Hall, Pittsburgh, PA, 15260, USA
Email: lemons@pitt.edu

(Lee & Spratley, 2010) noted that as many as half of secondary school students lack the ability to read all but the most basic texts. Additionally, the reading difficulties of secondary students are not, as some may presume, confined to comprehension (see Vaughn et al., 2008). A substantial portion of adolescents struggle with basic reading skills (e.g., decoding, word-reading strategies, and fluency), prompting Fuchs, Fuchs, and Compton (2010) to label the situation as nothing less than "a public health crisis" (p. 26).

To address this crisis, an increasing number of secondary schools are implementing Response to Intervention (RTI) to improve student outcomes in literacy and other subject areas (Zirkel & Thomas, 2010). Given that RTI emerged exclusively within the context of early intervention and primary reading instruction, the studies of RTI at the elementary level currently serve as the frame of reference for initial efforts in secondary schools (Duffy, 2007). RTI is most often conceptualized as a framework for providing multiple tiers of increasingly intensive instruction in an attempt to prevent academic failure (Vaughn, Wexler, Roberts, & Barth, 2010). The instructional merit of many components of RTI, including early intervention, tiered instruction, universal screening, progress monitoring, and curriculum-based measurement, is well-established, at least at the elementary level (Duffy, 2007; Foorman & Al Otaiba, 2009; Vaughn & Fuchs, 2003). Additionally, the reauthorization of the Individuals with Disabilities Education Act (IDEA, 2004) allows states to use a student's lack of response to scientific, research-based intervention to identify children as having a specific learning disability (LD; Fuchs & Fuchs, 2006). IDEA provides further incentive for implementing RTI by permitting districts to allocate up to 15% of special education funds for early intervention services provided through general education (D. Fuchs, Fuchs, & Stecker, 2010). Although states are not required to implement RTI, many are taking initial steps toward incorporating RTI into their education systems (Zirkel & Thomas, 2010).

A joint report released by the National High School Center (NHSC), National Center on Response to Intervention (NCRTI), and Center on Instruction (COI) (2010) suggested RTI has the potential to enhance the ability of secondary schools to improve student academic performance. As a result of this recommendation, statutory support for RTI, and the success of RTI in elementary settings, school district leaders are increasingly recommending that secondary administrators implement RTI in their schools with the hopes of dramatically improving student performance (Zirkel & Thomas, 2010). As limited research has been conducted regarding the application of RTI beyond the elementary level, many readers of this article—particularly secondary school administrators—may feel as if they are being required to place the cart before the proverbial horse. Fortunately, research to date provides at least initial guidance for administrators in middle and high schools. The purpose of this article is to provide a basic description of RTI, to examine research concerning RTI at the secondary level, and to provide a set of considerations for secondary administrators who are responsible for moving forward with RTI implementation.

Overview of Response to Intervention

In a general sense, RTI provides tiers of evidence-based instruction through which students move based on their level of academic need. At Tier 1, all students receive high-quality, general education instruction. Progress is monitored and students who fail to respond are provided more intensive supplemental instruction (e.g., smaller group size, increased time) at Tier 2. Progress is again monitored and nonresponsive students are either placed into even more intensive Tier 3 interventions or are referred for a special education evaluation. (See Fuchs & Fuchs, 2006 and Fuchs, Mock, Morgan, & Young, 2003, for more in-depth description.)

In theory, this system of academic interventions and assessment is designed to serve two major purposes—prevention of academic failure and diagnosis of LD (Baker, Fien, & Baker, 2010; Torgeson, 2009). In terms of prevention, RTI addresses academic problems before they occur by ensuring that research-based general education and appropriate interventions are provided to all students (Scruggs & Mastropieri, 2006). In terms of diagnosis, RTI may be used to label those students who fail to respond to multiple layers of presumably high-quality, evidence-based, increasingly intensive interventions as having a LD (Fuchs & Fuchs, 2006). Both functions of RTI are predicated on the frequent assessment of students and the provision of high-quality, research-based Tier 1 instruction (Fuchs & Fuchs, 2006).

There are two common approaches to the selection of supplemental interventions in RTI models—standard protocol and problem solving (Fuchs et al., 2003). In the first, students move in an almost lock-step fashion through a series of standardized, preselected, research-based interventions. Students who do not respond are referred to special education based on the hypothesis that they will need individualized, special education services to learn. Thus, the standardized sequence of interventions has become the "test" to determine whether a child qualifies as having a LD (Fuchs et al., 2003). In the second approach, teams of school leaders (e.g., teachers, reading coaches, administrators) devise differentiated sets of supplemental interventions based on student need (Carney & Stiefel, 2008). Researchers often recommend the standard protocol approach as a way for schools to decrease variability and to enhance feasibility; however, this approach relies on the availability of appropriate, standardized, empirically validated interventions. Although the individualized interventions composed within problem-solving frameworks are hardly "random, or unthinking" (Fuchs et al., 2003 p. 160), the research support for standard protocol models of RTI at the elementary level is far more robust (Carney & Stiefel, 2008). Nonetheless, practitioners often prefer the problem-solving approach due to the flexibility of the model and for the opportunity for educators to match interventions to student need. Currently, many schools are implementing hybrid versions of RTI that incorporate components of both approaches (Johnson, Smith, & Harris, 2009).

Studies supporting RTI at the elementary level, or Elementary RTI, have demonstrated various benefits. Several studies found that RTI improved the performance of at-risk students on measures of literacy and reduced the number of students identified

for special education (Carney & Stiefel, 2008; Mathes et al., 2005; O'Connor, Harty, & Fulmer, 2005; Scanlon, Gelzheiser, Vellutino, Schatschneider, & Sweeney, 2008; Vellutino, Scanlon, Small, & Fanuele, 2006). Others have demonstrated benefits for English-language learners (Linan-Thompson, Vaughn, Prater, & Cirino, 2006) and students in high-poverty schools (Gettinger & Stoiber, 2007). Vaughn et al. (2009) further suggest that long-term implementation of RTI can improve the performance of students found to be resistant to instruction. Additionally, RTI models have resulted in decreased rates of retention and special education placement (Murray, Woodruff, & Vaughn, 2010; Wanzek & Vaughn, 2008).

What About Secondary?

Because of the strong early reading focus of a majority of RTI research, academic leaders responsible for implementing RTI in middle and high schools—Secondary RTI—are justifiably hesitant to simply replicate the components of effective Elementary RTI models. Several researchers have acknowledged the wisdom in this tentativeness. Mastropieri and Scruggs (2005) raised concerns about the utility of RTI models in identifying students with disabilities in middle and high school. D. Fuchs and Deshler (2007) questioned whether RTI, at least in its common conceptualization, was even relevant to secondary schools or whether a very different model is necessary. L. S. Fuchs et al. (2010) noted that struggling students would benefit from RTI but highlighted assumptions of Elementary RTI that are likely to be problematic in secondary settings including the notions that (a) children should be screened to determine risk status prior to serious academic deficits, (b) children must demonstrate a lack of response to general education over a period of time, and (c) remediation approaches shown effective for younger learners will work the same for adolescents.

Critics of RTI (e.g., Batsche, Kavale, & Kovaleski, 2006; Brozo, 2009) anticipated problems scheduling interventions for struggling students at the secondary level. More specifically, the use of either a traditional or block schedule, which affects several aspects of instructional practice (e.g., Jenkins, Queen, & Algozzine, 2002; Veal & Flinders, 2001), will have an impact on Secondary RTI (Burns & Gibbons, 2008). In a traditional schedule, children attend a consistent set of 6 to 8, hour-long classes. In contrast, block scheduling features longer classes (approximately 100 minutes) on an alternating basis. It is unclear at this time which approach to scheduling may be most aligned with RTI.

RTI Research in Secondary Settings

Because of the relative lack of research, concerns regarding the efficacy of implementing Elementary RTI in secondary schools are legitimate. Experiments in which researchers explored the use of such models outside of elementary settings largely occurred at the sixth grade level (Dufrene et al., 2010; Faggella-Luby & Wardwell, 2011; Graves, Brandon, Duesbery, McIntosh, & Pyle, 2011; Vaughn, Cirino, et al.,

2010; Vaughn, Wexler, Roberts, & Barth, 2010). RTI research at the high school level is comparatively limited (NHSC et al., 2010; Somers et al., 2010). Nonetheless, the work that has been done provides at least initial guidance for administrators responsible for implementing RTI in middle and high schools. Next, we provide an overview of Secondary RTI research. Our purpose is to allow secondary administrators a better understanding of the types of approaches to Secondary RTI that are currently being empirically evaluated by researchers.

Middle School RTI Research

Two large-scale studies have assessed the effectiveness of RTI in middle schools over the course of multiple school years. Vaughn, Cirino, et al. (2010) tested a standard protocol model of RTI in seven urban middle schools in the southwestern United States. Sixth-grade teachers participating in the study received professional development concerning vocabulary and comprehension instruction to ensure adequate Tier 1 instruction (Vaughn, Cirino, et al., 2010). The authors used state test scores as the basis for assigning 241 struggling students to a Tier 2 intervention involving standardized, small-group instruction in vocabulary, fluency, and comprehension for 50 minutes a day throughout an entire school year. The authors used standardized probes to monitor student progress throughout the experiment. Vaughn, Cirino, et al. observed that students receiving Tier 2 instruction exhibited greater gains on measures of literacy skills than students in a comparison condition; however, effect sizes (ES) were modest on measures of skills targeted by the intervention—passage comprehension (0.19), passage fluency (0.24), and sentence reading efficiency (0.13). The cost of the program, the difficulty of implementing a standardized model of RTI at the secondary level, and the fact that the results did not indicate Tier 2 instruction to be "robustly, effective, especially in terms of closing the gap relative to typically achieving peers" (Vaughn, Cirino, et al., 2010, p. 18) prompted the authors to recommend more intense alternatives to Tier 2, such as special education, at the secondary level.

Because of the limited effects on student outcomes following 1 year of intervention (Vaughn, Cirino, et al., 2010), the research team decided to provide additional supplemental reading instruction to struggling readers through the end of eighth grade (Vaughn, Wexler, et al., 2010). The authors introduced individualized instruction at Tier 3 that featured modifications made in response to individual need, flexible time schedules, and texts selected to increase student motivation. The students, though they reported enjoying the intervention, achieved only limited gains in reading outcomes. Based on the results, Vaughn, Wexler, et al. suggested that RTI may not be sufficient to help middle school students with chronic reading problems achieve grade-level reading expectations.

Several studies have employed smaller scale, classroom-oriented methods to evaluate approaches to RTI in middle school. These approaches have examined Tier 2 interventions provided by peers, supplemental staff (i.e., graduate students), and classroom teachers. Dufrene et al. (2010) studied the effects of using peer tutors to administer a standardized Tier 2 intervention at the sixth-grade level. The authors conducted their

single-subject experiments in a rural southeastern middle school using Tier 2 as a means of bolstering word recognition and reading fluency. After attending a training session, three student tutors administered the Tier 2 intervention to four of their peers outside of class and monitored their progress (Dufrene et al., 2010). Each of the tutoring sessions lasted approximately 10 minutes and occurred no more than twice a week (Dufrene et al., 2010). The authors found that the peer tutors implemented the intervention with a high level of fidelity and that the fluency and accuracy of the tutees increased slightly over the duration of the experiment. Dufrene et al. (2010) suggested that the results supported the use of peer tutors in future iterations of RTI.

Additional, nonschool staff (i.e., graduate students) provided 3 hours of weekly, standardized reading instruction in fluency, decoding, and reading comprehension over a 10-week period to sixth graders at a low-income middle school in the study conducted by Graves et al. (2011). Standardized test scores from the previous year were used to identify 30 struggling students and place them into small instructional groups (Graves et al., 2011). The authors reported small increases for the experimental group in fluency (ES = 0.14) and comprehension (ES = 0.01), though students with LD exhibited substantially larger gains (ES = 0.52 and 0.89, respectively). However, the large effect sizes should be interpreted cautiously as there were only three students with LD in the study, and their average gains on oral reading fluency and MAZE measures were 7.7 words and 1.7 items per minute, respectively. The authors expressed enthusiasm about the prospects of RTI in secondary schools but cautioned that more intensive interventions may be necessary in order to bolster the reading comprehension scores of struggling students.

Faggella-Luby and Wardwell (2011) examined the effects of Tier 2 when implemented by classroom teachers. The authors randomly assigned 86 at-risk, urban middle school students in Grades 5 and 6 to one of three Tier 2 conditions: (a) a researcher-designed intervention focused on story structure, (b) a business-as-usual supplemental reading instruction designed by the reading specialists participating in the study, or (c) a period of sustained silent reading. Teachers provided the supplemental instruction in addition to the students' English/language arts curriculum in 30-minute sessions provided no more than three times per week. Results from the study were mixed. Statistically significant gains were demonstrated on a cloze measure for sixth-grade students in the structured Tier 2 conditions compared with students participating in sustained silent reading; however, no statistically significant gains were found for fifth-grade students (Faggella-Luby & Wardwell, 2011). The authors suggested the results provide support for additional research on Secondary RTI while acknowledging that additional instructional intensity will likely be required to increase the comprehension skills of struggling readers in middle school.

High School RTI Research

Somers et al. (2010) examined the impact of two supplemental literacy programs on ninth graders identified by the participating schools (n = 34) as reading 2 to 5 years below grade level. The researchers randomly assigned students (n = 5,595) to one of

two experimental interventions or a control condition. In the experimental conditions, content area teachers instituted either Reading Apprenticeship Academic Literacy (RAAL) or Xtreme Reading. Both interventions were designed to enhance reading comprehension, vocabulary, writing, phonics, and fluency. The students received the interventions as a substitute for an elective-level class for 225 minutes per week for one academic year at a cost of approximately $2,000 per student. At the end of the ninth grade, students receiving the reading interventions demonstrated statistically significant gains in reading comprehension (ES = 0.09), grade point average (ES = 0.07), and on standardized English language arts tests (ES = 0.11). However, 77% of students continued to read 2 or more years below grade level. Unfortunately, no differences on these measures were found between intervention and control groups 1 year later.

A descriptive report by NHSC et al. (2010) described the RTI frameworks implemented by 20 high schools throughout the United States. NHSC et al. outlined important facets of RTI in high schools—stressing the leadership of principals and administrators as central to the success of RTI models. The high schools featured in the report also emphasized the importance of evidence-based Tier 1 instruction in reading, which involved aligning instruction with state standards, integrating literacy strategies across content areas, and frequently assessing the progress of students. Decision making in the featured high schools relied on a "multiple failures" approach that, "in lieu of more sophisticated screening measures developed specifically for high school use" (p. 4), identifies students as at-risk if they fail numerous classes, perform poorly on tests, or exhibit attendance or disciplinary problems. In addition, the schools reported struggling with scheduling interventions, identifying standardized remediation techniques, evaluating the fidelity of implementation, and in providing authentic professional development for staff.

Summary of Secondary RTI Research

The research that has been conducted on Secondary RTI has evaluated the impact of replicating an Elementary RTI model in middle and high schools. In other words, struggling readers have been provided with an additional amount of supplemental reading instruction that was delivered in small groups by a peer, classroom teacher, or supplemental staff person. In some cases, modest improvements in student performance have been demonstrated. However, Secondary RTI has not produced the dramatic improvements seen at the elementary level. Academic gains have been relatively modest despite researchers' close monitoring of fidelity of implementation. Based on these findings, it should be clear to secondary administrators that caution is warranted in taking the same approach to tiered interventions as administrators working with younger students. It is likely that innovative approaches to delivering intensive interventions to struggling secondary students are necessary if meaningful academic gains are to be realized. Next, we summarize a few approaches that appear to hold some promise.

New Ideas

Several researchers and school leaders are currently exploring novel approaches to providing increasingly intensive, tiered models of literacy intervention to struggling adolescents. In an effort to encourage others to extend thinking on how RTI could be envisioned in secondary settings, we present a few of these ideas. Ehren and Whitmire (2009) have suggested that secondary school leaders look to speech-language pathologists (SLPs) to play a vital role in RTI—a group of professionals whose current involvement is minimal at best. The authors note that the language and literacy expertise as well as the diagnostic-prescriptive approach of SLPs uniquely qualifies them to play an integral role in implementation of RTI models in secondary settings. Troia (2005) outlined many ways in which the expertise of SLPs may be beneficial in Tiers 1, 2, and 3, including consultation, assessment, professional development, and intensive intervention. Furthermore, Staskowski and Rivera (2005) described real-world examples in which SLPs were incorporated into RTI implementation in Florida and Michigan. This reconceptualization of the function of SLPs presents one way that secondary administrators may be able to reconfigure current job responsibilities to enhance the impact of current staff. Given the intensity that will likely be required of Secondary RTI, this "all hands on deck" approach is likely to yield the greatest gains in student outcomes without substantially increasing the need for additional staff members.

Another example of a unique approach can be found in Mehlville School District in Louis, Missouri (D. Schultz, personal communication, July 16, 2011). Curriculum leaders had adopted and implemented Peer-Assisted Learning Strategies (PALS; Fuchs et al., 2001) in their elementary schools and had seen noticeable improvements in student outcomes. In an effort to extend these academic gains into upper grades, one motivated teacher adapted the program for implementation across content-area classes at the middle schools. Content-area teachers were trained on a component from PALS, on a decoding and vocabulary strategy, or on a reading-fluency routine (e.g., social studies teachers learned to implement paragraph shrinking from PALS). Each teacher then trained her or his students in the content-assigned strategy. Following training, each teacher was able to integrate all taught strategies into her or his instruction. After the success of this activity, teachers began creating and sharing other "PALS-like" strategies (i.e., students work in pairs and are provided with explicit directions and accompanying questions for completing the activity). These activities focused on teacher-identified areas of need, including cause and effect, inference, and reading of maps and graphs. Teachers also crafted a supplemental vocabulary mini-curriculum for language arts teachers to deliver. This concerted approach resulted in a distributed workload, made clear that literacy was part of all content classes and is leading to a more cohesive approach to literacy instruction across the district.

The district reported that students involved in the first year pilot demonstrated substantial gains in decoding, fluency, and comprehension. For example, in one middle school implementing the strategies, teachers monitored progress using the San Diego Quick (e.g., see Ekwall & Shanker, 1988) for decoding, oral reading-fluency passages from EasyCBM (Alonzo, Tindal, Ulmer, & Glasgow, 2006) for fluency, and maze

from AIMSweb (Shinn & Shinn, 2002) for reading comprehension. After 1 year of implementation, this school reported reducing the number of children who had scored below benchmark at the start of the year (e.g., grade level for decoding, 25th percentile for fluency, and 50th percentile for reading comprehension) by 91% for decoding, 75% for fluency, and 76% for reading comprehension. Based on the successes from the pilot, the school has decided to extend the model into other buildings in the district.

Marino and Beecher (2010) have embraced technology as a possibility for improving RTI for secondary schools. The authors are exploring the use of video games in science classes. This inventive use of technology allows teachers to collect progress monitoring data, supplement Tier 1 instruction with video game play that is motivating and standards aligned, and provide targeted Tier 2 intervention through game tutorials and explicit activities. Marino and Beecher noted that previous research evaluating the effectiveness of technology has demonstrated benefits for students with LDs in reading fluency, comprehension, and written expression. Furthermore, the authors review research that provided evidence that technology-based games can be more effective than traditional instruction for children with disabilities and that its use increases motivation, self-esteem, and the pace of learning. Whereas this work is in its beginning stages, we feel that Marino and Beecher's (2010) approach exemplifies one possibility to make RTI "work" for content area teachers in middle and high schools. Our rationale being that the use of technology can help schools more efficiently use staff, collect data, provide individualized instruction to struggling learners, and—perhaps most important—potentially entice struggling adolescents to become more engaged with remedial instruction.

Although these approaches have yet to be empirically evaluated and school leaders should move forward cautiously, we feel that each holds promise. The ideas correspond to challenges highlighted by extant research: *How can we improve Secondary Tier 1? Which of our current employees can provide additional support? How can we motivate our students to participate?* Involving a broader spectrum of school professionals (e.g., SLPs, school psychologists), infusing strategy instruction across content areas (e.g., PALS), and considering supplemental programs that are likely to be highly motivating for adolescents (e.g., video games) all merit further exploration.

Nonetheless, it is unlikely that any of these approaches will dramatically improve Secondary RTI when implemented individually. Researchers and practitioners alike will need to refine and systematically evaluate further innovation if we are to meet the challenges posed by successfully implementing RTI in secondary settings. Secondary school administrators are in an important position in which they can both encourage innovation and facilitate the development of research collaborations within their districts.

Research-Based Guidance

Many states, districts, and schools have mandated implementation of RTI; in others, school leaders are choosing to adopt the model in hopes of improving student outcomes (Berkeley, Bender, Peaster, & Saunders. 2009; Kavale, Kauffman, Bachmeier,

& LeFever, 2008; Zirkel & Thomas, 2010). Secondary administrators in these schools must decide which components of Elementary RTI they may attempt to duplicate, and they may turn to the limited research base on Secondary RTI for additional guidance. Next, we provide a set of considerations for secondary administrators derived from the existing research base on Secondary RTI.

Recognize That RTI at the Secondary Level Is Different From Elementary Models

Because of their strong association with the identification and prevention of LD, standard protocol models used in Elementary RTI are incompatible with the needs of adolescents (D. Fuchs et al., 2010). Students at the secondary level who struggle with reading have typically already been identified and are thus past the point of "prevention" (Batsche et al., 2006). Furthermore, the often considerable gap between the ability of struggling adolescents and grade-level standards undermines the use of continued screening of students and gradual application of services that characterize elementary models of RTI (L. S. Fuchs et al., 2010; Vaughn & Fletcher, 2010). Many of the hallmarks of the standard protocol approach associated with diagnosing LD (e.g., reliable measures of universal screening, progress monitoring) have yet to be developed for all levels of secondary education (Johnson et al., 2009; NHSC et al., 2010). Given the qualified success of experiments testing the standard protocol models of RTI at the secondary level, problem-solving models of RTI should be of greater interest to secondary administrators. Problem-solving models offer flexibility in terms of (a) who provides instruction, (b) the types of instruction provided, and (c) the autonomy local education professionals exercise in creating and implementing interventions needed to address the demands of struggling adolescents (Berkeley, Bender, Peaster, & Saunders, 2009; Carney & Stiefel, 2008). Secondary models of RTI will likely exhibit considerable variability as educators and administrators experiment with various approaches of collecting information and targeting instruction within the content areas.

Another purview of secondary administration with singular relevance to Secondary RTI is the issue of scheduling. Specifically, the structure of the interventions offered within an RTI framework will vary based on whether a school uses a traditional or block schedule. Burns and Gibbons (2008) proposed administrators operating a traditional schedule either (a) allow for a course specifically dedicated to supplementary instruction or (b) encourage content area teachers to deliver interventions within their courses. Schools using block schedule should be subdivided into smaller groups of students who would receive instruction from a team of instructors.

Establish a Mission for Your RTI Framework and Provide the Necessary Resources

Secondary administrators have a greater opportunity to establish goals for RTI as LD diagnosis plays a reduced role in Secondary RTI. We advise administrators to

reexamine their school's mission statement to see if it is still relevant or effective—and link it to the goals of their RTI model. Helping students graduate, for example, is a measurable goal that frequently underpins models of Secondary RTI (Johnson et al., 2009; NHSC et al., 2010).

Some (e.g., Brozo, 2010) have raised concerns regarding the impact of the Common Core State Standards Initiative (CCSSI, 2010) on Secondary RTI. We believe that RTI and CCSSI are related components of a larger effort to improve general instruction that will ultimately prove beneficial. First, as schools adopt a common set of academic standards and high-stakes assessments, researchers will devote more effort to evaluating interventions and progress monitoring measures that are aligned with the Common Core. Second, school administrators will be better able to communicate with one another about the impact of improvement efforts. As Secretary of Education, Arne Duncan (2011) recently stated, moving to Common Core ". . . will help put an end to the insidious practice of establishing 50 different goalposts for educational success". Common core standards may improve Secondary RTI because schools from different districts and states will be focused on a common set of goals, improving the likelihood that successes in one school can be replicated in another.

Regardless of their goals, school-based administrators must schedule time to monitor the delivery of their teachers instruction and to encourage these educators to develop supplementary instruction in the content areas for students at risk (Johnson et al., 2009). In this respect, related service providers (e.g., occupational therapists and physical therapists) are potential assets. IDEA permits related service providers to collaborate with regular educators regarding best practices for struggling students. This stipulation eliminates prior barriers to their participation with regular education students and makes them ideal members of the RTI team. The knowledge these professionals possess on educational interventions for struggling students make them an invaluable school resource. In addition, RTI is largely a data-based initiative that can be undermined if educators are not accustomed to using data for instructional purposes (Mellard, McKnight, & Woods, 2009). Administrators pursuing Secondary RTI should provide educators with the training necessary to use data for instructional purposes and foster a school-wide commitment to the pursuit of common goals.

Use RTI to Emphasize the Importance of Intensive Secondary Literacy Instruction

For schools systems that are exploring RTI implementation in order to decrease dropout rates or increase academic performance in STEM subjects, improving literacy skills will likely play a key part of achieving the intended goal. Although presenting a complete description of current evidence-based recommendations for adolescent literacy is beyond the scope of this article, there are a few salient points that connect directly with RTI. According to the Carnegie Council on Advancing Adolescent Literacy (CCAAL, 2010), teaching literacy skills should be a priority of every core content area teacher. These teachers should be providing instruction in vocabulary and comprehension that is direct, systematic, and explicit (Kamil et al., 2008) and should

be embedding effective instructional practices across the content areas (Biancarosa & Snow, 2006). We are not advocating for these teachers to take on the challenges of teaching basic reading skills to the most struggling readers—this should be the responsibility of a specialist—however, each academic discipline includes essential reading and writing skills that content teachers are responsible for teaching (Heller & Greenleaf, 2007). Furthermore, content teachers are responsible for ensuring that all students in their classes learn the academic content—regardless of reading skill (CCAAL, 2010). As with any goal related to RTI, unless principals explicitly set the expectation that everyone is a literacy teacher, the cross-content connections that are necessary to improve literacy among adolescents will likely not occur.

Next, students who struggle with reading and writing must receive targeted, supplemental interventions (Biancarosa & Snow, 2006; CCAAL, 2010; Heller & Greenleaf, 2007; Kamil et al., 2008). The types of Tier 2 interventions outlined in the review of research provide some guidance in what this instruction could look like. Biancarosa and Snow (2006) have suggested that typical middle school and high school students should receive "approximately two to four hours of [daily] literacy instruction and practice that takes place in language arts and content-area classes" (p. 4). Accomplishing such a task within the typical school day will require content educators to integrate components of literacy instruction into the general curriculum. In addition, students who lack decoding and reading-fluency skills will need intensive, individualized, direct instruction provided by a reading specialist or other specially trained teacher (Heller & Greenleaf, 2007; Kamil et al., 2008). The structural changes that such initiatives entail can only occur under the dedicated supervision of engaged school leadership.

Though modest, the results of studies in which students received several hours of supplementary reading instruction throughout an entire year (Somers et al., 2010; Vaughn, Cirino, et al., 2010; Vaughn, Wexler et al., 2010) suggest that literacy instruction for struggling adolescent readers should be *as intense as possible*. Instruction consisting of brief, periodic reading intervention (Dufrene et al., 2010; Faggella-Luby & Wardwell, 2011; Graves et al., 2011) simply does not have the same effect as the more intensive methods. We believe that the comprehensive nature of RTI makes it an ideal tool for administrators to use to enhance literacy instruction.

Stay Informed

We encourage administrators and school leaders to increase their knowledge of RTI. NHSC et al. (2010) cited the leadership of principals and school psychologists as a key component in the success of RTI at the secondary level. Similarly, Johnson et al. (2009) identified the involvement of informed leadership figures as crucial to the success of RTI in middle and high schools. Nonetheless, a survey conducted by Sansosti, Noltemeyer, and Goss (2010) indicated that high-school principals, though they generally acknowledge the merits of RTI, possess very little information about appropriate interventions for secondary students. Administrators unfamiliar with RTI should attempt to augment their understanding by consulting school professionals, such as

school psychologists, whose disciplines are increasingly engaged with the development of RTI (Sullivan & Long, 2010). However, an analysis of secondary-school psychologists conducted by Sansosti, Telzrow, and Noltemeyer (2010) in which focus group participants expressed uncertainty about the implementation of RTI suggests that administrators should not exclusively rely on the input of local professionals.

Despite its prominence, RTI constitutes a relatively new and rapidly evolving approach to education. To enhance the likelihood for success, administrators need to familiarize themselves with RTI and monitor its progress. Resources that provide professional development materials or that may serve as points of departure include:

- *How RTI works in secondary schools* (2009) by Johnson et al.; Available at www.corwin.com
- *Literacy instruction in the content areas: Getting to the core of middle and high school improvement* (2007) by Heller and Greenleaf; Available at www.all4ed.org/files/LitCon.pdf
- *Reading next: A vision for action and research in middle and high school literacy: A report to Carnegie Corporation of New York* (2006) by Biancarosa and Snow; Available at www.all4ed.org/files/ReadingNext.pdf
- *Time to act: An agenda for advancing adolescent literacy for college and career success* (2010) by Carnegie Council on Advancing Adolescent Literacy; Available at carnegie.org/publications
- Center on Instruction: www.centeroninstruction.org
- National Center on Response to Intervention: www.rti4success.org
- The IRIS Center: iris.peabody.vanderbilt.edu

Conclusions

The knowledge base for Secondary RTI is continually expanding. We encourage school leaders to reach out to local educational researchers to form collaborative partnerships. The type of work that needs to be done next regarding Secondary RTI is an effort that neither group can manage without the other. In the current climate of high-stakes testing and accountability, some school districts are reluctant to participate in research. But, without schools in which to conduct research, empirical evaluations of interventions and RTI models cannot happen. Furthermore, in the problem-solving framework of Secondary RTI, it is essential that researchers have a high level of input from, access to, and collaboration with real-world practitioners. Related to research, school leaders should also ensure that their district has access to the most current published research. Multiple teams of researchers have recently received large grants (e.g., See Reading for Understanding Research Initiative at ies.ed.gov) to study issues related to adolescent literacy and RTI. These findings will most likely be disseminated through scholarly journals in advance of other venues (e.g., practitioner journals, professional development conferences).

School leaders have two basic options regarding RTI implementation. They can sit back and wait for a few more years until more empirical guidance exists. RTI can be

avoided for now, status quo programs—and rates of student failure—can be maintained. This is likely not an attractive option for most. Instead, many school leaders will likely take on the challenge of becoming an RTI pioneer. We encourage these administrators to foster a pioneering attitude in their classroom teachers. Without support (both emotional and tangible), teachers may be unwilling to devote the time, energy, and resources needed to implement RTI. Principals should make it clear that they expect teachers to (a) try new approaches, (b) base these approaches on research-grounded principles, (c) make literacy a priority by incorporating strategy instruction into their classes and to make accommodations for students with limited literacy skill, (d) use data to evaluate the effectiveness of their attempts, and (e) use an iterative process to refine approaches until student success is demonstrated. Schools will likely experience successes and failures as they move forward with implementation of Secondary RTI; however, the potential for enhanced student outcomes make this a worthy endeavor.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

References

Alonzo, J., Tindal, G., Ulmer, K., & Glasgow, A. (2006). *EasyCBM online progress monitoring assessment system.* Eugene: University of Oregon, Behavioral Research and Teaching.

Baker, S. K., Fien, H., & Baker, D. L. (2010). Robust reading instruction in the early grades: Conceptual and practical issues in the integration and evaluation of Tier 1 and Tier 2 instructional supports. *Focus on Exceptional Children, 42(9)*, 1-20.

Batsche, G. M., Kavale, K. A., & Kovaleski, J. F. (2006). Competing views: A dialogue on response to intervention. *Assessment for Effective Intervention, 32*, 6-19.

Berkeley, S., Bender, W. N., Peaster, L. G., & Saunders, L. (2009). Implementation of response to intervention: A snapshot of progress. *Journal of Learning Disabilities, 62*, 85-95.

Biancarosa, C., & Snow, C. E. (2006). *Reading next: A vision for action and research in middle and high school literacy: A report to Carnegie Corporation of New York.* Washington, DC: Alliance for Excellent Education.

Brozo, W. G. (2009). Response to intervention or responsive instruction? Challenges and possibilities of response to intervention for adolescent literacy. *Journal of Adolescent & Adult Literacy, 53*, 277-281.

Brozo, W. G. (2010). The role of content literacy in an effective RTI program. *The Reading Teacher, 64*, 147-150.

Burns, M. K., & Gibbons, K. (2008). Implementing response-to-intervention in elementary and secondary schools: Procedures to assure scientific-based practices. New York, NY: Routledge.

Carnegie Council on Advancing Adolescent Literacy. (2010). *Time to act: An agenda for advancing adolescent literacy for college and career success.* New York: Carnegie Corporation of New York.

Carney, K. J., & Stiefel, G. S. (2008). Long-term results of a problem-solving approach to response to intervention: Discussion and implications. *Learning Disabilities: A Contemporary Journal, 6(2)*, 61-75.

Common Core State Standards Initiative. (2010). *Common core state standards for English, language arts, and literacy in history/social studies, science and technical subjects.* Retrieved from http://www.corestandards.org/the-standards

Duffy, H. (2007). *Meeting the needs of significantly struggling learners in high school: A look at approaches to tiered intervention.* Washington, DC: U. S. Department of Education, National High School Center.

Dufrene, B. A., Reisener, C. D., Olmi, D. J., Zoder-Martell, K., McNutt, M. R., & Horn, D. R. (2010). Peer tutoring for reading fluency as a feasible and effective alternative in response to intervention systems. *Journal of Behavioral Education, 19*, 239-256.

Duncan, A. (2011). *Beyond the Bubble Tests: The next generation of assessments*. Speech presented at American Diploma Project Leadership Team Meeting, Alexandria, VA. Retrieved from http://www.ed.gov/news/speeches/beyond-bubble-tests-next-generation-assessments-secretary-arne-duncans-remarks-state-l

Edmonds, M. S., Vaughn, S., Wexler, J., Reutebuch, C., Cable, A., Tackett, K. K., & Schnakeberg, J. W. (2009). A synthesis of reading interventions and effects on reading comprehension outcomes for older struggling readers. *Review of Educational Research, 79*, 262-300.

Ehren, B. J., & Whitmire, K. (2009). Speech-language pathologists as primary contributors to Response to Intervention at the secondary level. *Seminars in Speech and Language, 30*, 90-104.

Ekwall, E., & Shanker, J. L. (1988). *Diagnosis and remediation of the disabled reader* (3rd ed.). Boston, MA: Allyn & Bacon.

Faggella-Luby, M., & Wardwell, M. (2011). RTI in a middle school: Findings and practical implications of a Tier 2 reading comprehension study. *Learning Disability Quarterly, 34*, 35-49.

Foorman, B., & Al Otaiba, S. (2009). Reading remediation: State of the art. In P. McCardle & K. Pugh (Eds.), *How children learn to read: Current issues and new directions in the integration of cognition, neurobiology, and genetics of reading and dyslexia research and practice* (pp. 257-274). New York, NY: Psychology Press.

Fuchs, D., & Deshler, D. D. (2007). What we need to know about responsiveness to intervention (and shouldn't be afraid to ask). *Learning Disabilities Research & Practice, 22*, 129-136.

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

Fuchs, D., Fuchs, L. S., & Stecker, P. M. (2010). The "blurring" of special education in a new continuum of general education placements and services. *Council for Exceptional Children, 76*, 301-323.

Fuchs, D., Fuchs, L. S., Thompson, A., Svenson, E., Yen, L., Al Otaiba, S., . . . Saenz, L. (2001). Peer-assisted learning strategies in reading: Extensions for kindergarten, first grade, and high school. *Remedial and Special Education, 22*, 15-21.

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

Fuchs, L. S., Fuchs, D., & Compton, D. L. (2010). Rethinking response to intervention at middle and high school. *School Psychology Review, 39*, 22-28.

Gettinger, M., & Stoiber, K. (2007). Applying a response-to-intervention model for early literacy development in low-income children. *Topics in Early Childhood Special Education, 27*, 198-213.

Graves, A. W., Brandon, R., Duesbery, L., McIntosh, A., & Pyle, N. B. (2011). The effects of Tier 2 literacy instruction in sixth grade: Toward the development of a Response-to-Intervention model in middle school. *Learning Disability Quarterly, 34*, 73-86.

Heller, R., & Greenleaf, C. (2007). *Literacy instruction in the content areas: Getting to the core of middle and high school improvement.* Washington, DC: Alliance for Excellent Education.

Individuals with Disabilities Education Improvement Act. (2004). Public Law 108-446.

Jenkins, E., Queen, A., & Algozzine, B. (2002). To block or not to block: That's not the question. *Journal of Educational Research, 95*, 196-202.

Johnson, E. S., Smith, L., & Harris, M. L. (2009). *How RTI works in secondary schools*. Thousand Oaks, CA: Corwin.

Kamil, M. L., Borman, G.D., Dole, J., Kral, C. C., Salinger, T., & Torgesen, J. (2008). *Improving adolescent literacy: Effective classroom and intervention practices: A practice guide*. Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from http://ies.ed.gov/ncee/wwc/practiceguide.aspx?sid=8

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

Lee, C. D., & Spratley, A. (2010). *Reading in the disciplines: The challenges of adolescent literacy.* New York: Carnegie Corporation of New York.

Linan-Thompson, S., Vaughn, S., Prater, K., & Cirino, P. T. (2006). The response to intervention of English language learners at risk for reading problems. *Journal of Learning Disabilities, 39*, 390-398.

Marino, M. T., & Beecher, C. C. (2010). Conceptualizing RTI in 21st-century secondary science classrooms: Video games' potential to provide tiered support and progress monitoring for students with learning disabilities. *Learning Disabilities Quarterly, 33*, 299-311.

Mastropieri, M. A., & Scruggs, T. E. (2005). Feasibility and consequences of Response to Intervention: Examination of the issues and scientific evidence as a model for the identification of individuals with learning disabilities. *Journal of Learning Disabilities, 38*, 525-531.

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*, 148-182.

Mellard, D. F., McKnight, M., & Woods, K. (2009). Response to intervention screening and progress-monitoring practices in 41 local schools. *Learning Disabilities Research & Practice, 24*, 186-195.

Murray, C. S., Woodruff, A. L., & Vaughn, S. (2010). First-grade student retention within a 3-tier reading framework. *Reading & Writing Quarterly, 26*, 26-50.

National High School Center, National Center on Response to Intervention, & Center on Instruction. (2010). *Tiered interventions in high schools: Using preliminary "lessons learned" to guide ongoing discussion*. Washington, DC: American Institutes for Research.

O'Connor, R. E., Harty, K. R., & Fulmer, D. (2005). Tiers of intervention in kindergarten through third grade. *Journal of Learning Disabilities, 38*, 532-538.

Perie, M., Grigg, W., & Donahue, P. (2005). *The nation's report card: Reading 2005* (NCES 2006-451). Washington, DC: U. S. Department of Education.

Sansosti, F. J., Noltemeyer, A., & Goss, S. (2010). Principals' perceptions of the importance and availability of response to intervention practices within high school settings. *School Psychology Review, 39*, 286-295.

Sansosti, F. J., Telzrow, C., & Noltemeyer, A. (2010). Barriers and facilitators to implementing response to intervention in secondary schools: Qualitative perspectives of school psychologists. *School Psychology Forum: Research in Practice, 4*, 1-21.

Scanlon, D. M., Gelzheiser, L. M., Vellutino, F. R., Schatschneider, C., & Sweeny, J. M. (2008). Reducing the incidence of early reading difficulties: Professional development for classroom teachers versus direct interventions for children. *Learning and Individual Differences, 18*, 346-359.

Scruggs, T. E., & Mastropieri, M. A. (2006). Response to competing views: A dialogue on response to intervention. *Assessment for Effective Intervention, 32*, 62-64.

Shinn, M. R., & Shinn. M. M. (2002). *AIMSweb training workbook: Administration and scoring of reading maze for use in general outcome measurement.* Eden Prairie, MN: Edformation.

Somers, M., Corrin, W., Sepanik, S., Salinger, T., Levin, J., Zmach, C., . . . Silverberg, M. (2010). *The enhanced reading opportunities study final report: The impact of supplemental literacy courses for struggling ninth-grade readers* (NCEE 2010-4021). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U. S. Department of Education.

Staskowski, M., & Rivera, E. A. (2005). Speech-language pathologists' involvement in responsiveness to intervention activities: A complement to curriculum-relevant practice. *Top Language Disorders, 25*, 132-147.

Sullivan, A. L., & Long, L. (2010). Examining the changing landscape of school psychology practice: A survey of school-based practitioners regarding response to intervention. *Psychology in the Schools, 47*, 1059-1070.

Torgeson, J. K. (2009). The response to intervention instructional model: Some outcomes from a large-scale implementation in reading first schools. *Child Development Perspectives, 3*, 38-40.

Troia, G. A. (2005). Responsiveness to intervention: Roles for speech-language pathologists in the prevention and identification of learning disabilities. *Top Language Disorders, 25*, 106-119.

Vaughn, S., Cirino, P. T., Wanzek, J., Wexler, J., Fletcher, J. M., Denton, C. D., . . . Francis, D. J. (2010). Response to intervention for middle school students with reading difficulties: Effects of a primary and secondary intervention. *School Psychology Review, 39*, 3-21.

Vaughn, S., & Fletcher, J. M. (2010). Thoughts on rethinking response to intervention with secondary students. *School Psychology Review, 39*, 296-299.

Vaughn, S., Fletcher, J. M., Francis, D. J., Denton, C. A., Wanzek, J., Wexler, J., . . . Romain, M. A. (2008). Response to intervention with older students with reading difficulties. *Learning and Individual Differences, 18*, 338-345.

Vaughn, S., & Fuchs, L. S. (2003). Redefining learning disabilities as inadequate response to instruction: The promise and potential problems. *Learning Disabilities Research & Practice, 18*, 137-146.

Vaughn, S., Wanzek, J., Murray, C., Scammacca, N., Linan-Thompson, S., & Woodruff, A. L. (2009). Response to early reading intervention: Examining higher and lower responders. *Exceptional Children, 75*, 165-183.

Vaughn, S., Wexler, J., Roberts, G., & Barth, A. (2010). *Minimal responders over time: Year 3* [PowerPoint slides]. Retrieved from: www.meadowscenter.org/files/PCRC_Vaughn_2010.pdf

Veal, W. R., & Flinders, D. J. (2001). How block scheduling reform effects classroom practice. *The High School Journal, 84(4)*, 21-31.

Vellutino, F. R., Scanlon, D. M., Small, S., & Fanuele, D. P. (2006). Response to intervention as a vehicle for distinguishing between children with and without reading disabilities: Evidence for the role of kindergarten and first-grade interventions. *Journal of Learning Disabilities, 39*, 157-169.

Wanzek, J., & Vaughn, S. (2008). Response to varying amounts of time in reading intervention for students with low response to intervention. *Journal of Learning Disabilities, 41*(2), 126-142.

Zirkel, P. A., & Thomas, L. B. (2010). State laws and guidelines for implementing RTI. *Teaching Exceptional Children, 43*, 60-73.

Bios

Seth A. King is a teaching fellow and doctoral student at the University of Pittsburgh. He has worked with at-risk adolescents in a residential psychiatric environment and is interested in empirical methods that improve outcomes for students at the secondary level.

Christopher J. Lemons, PhD is an assistant professor of special education at the University of Pittsburgh and a center trainer for the National Center on Response to Intervention. His research focuses on effective methods to improve reading and literacy instruction for children who struggle with learning to read.

David R. Hill is a task development coordinator, teaching fellow, and doctoral student at the University of Pittsburgh. He has served as an administrator and teacher in special education. His research interests include enhancing the assessment of children with disabilities and identifying effective methods to help schools implement research-based practices.