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Abstract

This case study chronicles the efforts of a small high school over a 2-year period as it designed an implemented a response to intervention (RTI) program for students at the school. Their efforts were largely successful, with improved achievement, attendance, and grade point averages and a decrease in special education referrals. Major themes include the need to focus on quality core instruction as a means for preventing school failure, adopting a schoolwide approach, and developing curriculum-based assessments that make intervention meaningful.

Keywords

high school, intervention, achievement

The current reauthorization of the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA, 2004) recognized response to intervention (RTI) as an alternative way to identify students as having learning disabilities, making sure that students who struggle are not misidentified as disabled when different and/or more intensive instruction addresses their needs. Part of the motivation for this change came from a realization that students identified using a discrepancy formula (achievement in comparison to IQ) had to “wait and fail” before receiving specialized instruction as required by federal law (IDEIA, 2004).

A learner’s responsiveness to intervention has been used in special education for decades (e.g., Fuchs, Deno, & Mirkin, 1985). Progress is measured using curriculum-based assessments that sample the course (Hintze, Christ, & Methe, 2006) and curriculum-based measurements that gauge skills (Deno, 1985). The decision-making loop in an RTI model concerns making adjustments to instruction to find the optimal levels of effective teaching and learning. A lack of responsiveness in the face of these changes signals a possible learning disability.

The hope was that RTI would ensure that all students receive high-quality instruction and intervention before being referred for special education services. The result, it was theorized, might be fewer referrals to special education, fewer students identified as disabled, and a way to address the overrepresentation of students of color in special education. However, as noted by Johnston (2010), these dual purposes of RTI—measurement and instruction—have caused confusion in the field. In some cases, the focus on measurement has overshadowed the instructional purposes of RTI, causing practitioners and administrators to view

students through a deficits-based lens and to see RTI as a more elaborate version of the prereferral process (Orosco & Klingner, 2010).

Research evidence suggests that RTI may be an effective way of identifying students, in terms of both allocating additional instruction and qualifying for special education services (Barnett, Daly, Jones, & Lentz, 2004; Dorn & Schubert, 2008; O’Connor, 2000). It has promise for students with disabilities as well as students who are gifted and talented (Pereles, Omdal, & Baldwin, 2009). For example, VanDerHeyden, Witt, and Barnett (2005) assessed 182 first and second grade students and then used that information to determine which students needed supplemental intervention. Their findings suggest that curriculum-based measures can be used to identify students in need of additional instruction and intervention and that providing that intervention is helpful in closing the performance gap. A meta-analysis of 21 studies indicated significant effect sizes (exceeding 1.0) when this approach was implemented (e.g., Burns, Appleton, & Stehouwer, 2005). The inclusion criteria for this meta-analysis required student- or school-level data and outcome data, either within groups or between groups. Naturally, this limited the types of studies that were included, and thick descriptions of implementation would not have been included unless they also met the data requirements.

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Although it is generally considered effective, there are a number of concerns about the implementation of RTI. Two concerns about going to scale with RTI as a means for improving instruction are addressed in this study. First, the data on RTI mostly come from large research centers with significant support provided to sites implementing this effort. Researchers and practitioners have questioned the feasibility of widespread implementation of RTI in the absence of the extensive support provided by federal research centers (Gerber, 2005; Mastropieri & Scruggs, 2005). Ardoin, Witt, Connell, and Koenig (2005) addressed this issue and demonstrated that the three-tier RTI system could be implemented by school-based practitioners "within normal school routines using commonly available interventions that are efficient and yet effective" (p. 375). In this study, nine of the students identified on screening measures make progress using the classwide intervention model, but five did not. When supplemental interventions were added, these five students also made progress. Although not provided by a federal research center, the intervention was designed and delivered by the researchers. In response to the fact that interventions have been effective "when implemented with high integrity by a research associate who is paid to do that job," VanDerHeyden, Witt, and Gilbertson (2007, p. 226) studied the implementation of RTI in five elementary schools where existing staff implemented the procedures. Their findings indicate that RTI, when structured and implemented by existing school staff, can reduce the number of referrals for special education assessments, and when students are evaluated, they are likely to qualify for services.

A second concern relates to the fact that the majority of RTI research focuses on students at the elementary level. There are a number of reports and recommendations focused on what high schools could do with RTI (e.g., Ehren, Deshler, & Graner, 2010; Torgesen, 2003) but little evidence for its effectiveness or how it can be implemented (Brozo, 2009–2010). As Fuchs, Fuchs, and Compton (2010) noted, "Many researchers avoid middle and high schools entirely because of the scheduling problems and compliance issues often encountered when working with adolescents" (p. 22).

In the published examples that have been provided, RTI at the high school level has generally required a whole-school effort as students tend to struggle in multiple classes. Often, these examples are not published in peer-reviewed journals, subject to rigorous review of research methodology. For example, Barton and Stepanek (2009) profiled Walla Walla School District's efforts, which included the development of specific goals to guide instruction, a formative assessment system, protected time for core instruction, and differentiated instruction that optimizes learning. Similarly, Samuels (2009) reported in *Education Week* that Palmer High School in Colorado Springs, Colorado, has focused on RTI with good results based on their assessment and tutoring efforts.

The studies that have been published to date with middle and high school students mainly focus on interventions rather than systemic implementation of RTI. For example, Vaughn and her colleagues (2010) studied sixth graders who struggled with reading. They provided professional development to content area teachers and researcher-delivered interventions to students. Their study focused on 241 students in Tier 2 interventions and 115 students in a comparison group. Their results were positive, indicating that the interventions were generally effective. Interestingly, 29 of the intervention students did not receive the intervention because of scheduling problems. Although the results of the intervention were positive, this study does not provide information about the implementation of RTI as a systemic effort in secondary schools. Ehren et al. (2010) provide recommendations about the systematic implementation of RTI in secondary schools, focused on content literacy and embedded strategy instruction, but did not study the implementation of this framework schoolwide.

The question remains, how do high schools organize their resources and staff to implement RTI to address the complexities associated with adolescent learners? As Duffy (2007) noted, "RTI constructs hold great promise for high schools, particularly for programs and progress monitoring of specific interventions that focus on high school-related issues like transitions and dropout prevention" (p. 7). With this promise in mind, we designed this study to investigate the impact that RTI could have on a high school. We were interested in the impact that an RTI construct could have on student achievement as well as the ways in which RTI can be implemented at the secondary level. The overall purpose of this study was to document the efforts of one high school staff and administration to implement RTI in response to their need to improve student achievement and meet the diverse needs of their student populations. To address this purpose, this study focused on two major questions: (a) As RTI is implemented in one high school, what happens to student achievement? and (b) How are interventions organized and delivered in a high school that focuses on RTI as a school improvement process?

Method

Given that there are very few examples of the implementation of RTI at the high school level, we used qualitative methodology to document the implementation efforts and outcomes in one building through a case study approach. Qualitative methods provide for an understanding of complex situations and "assume that reality is ever changing, that knowledge consists of understanding, and that the goal of research is examination of processes" (LeCompte & Preissle, 1993, p. 46).

Case studies, which are a type of qualitative research design, have been used in disability-related research to document a variety of systems such as community supports for

individuals with disabilities (Taylor, 1991), literacy achievement for a student with a significant disability (Ryndak, Morrison, & Sommerstein, 1999), Mexican immigrant mothers and their children receiving speech-language therapy (Kummerer & Lopez-Reyna, 2009), and the due process system (Bateman, 2008). What these studies have in common is that they explore a phenomenon deeply enough to generalize findings and inform practice. This case study was designed to determine how instruction and interventions were organized in a complex high school environment and to collect data on student achievement over the course of the 2 years of this study. This time frame was necessary to ensure that we fully understood the context of the school and had a chance to observe the process of change. In addition, 2 years of data collection provided us with detailed information about the way that RTI was organized and delivered as teachers learned more and more about the process.

Participants

School and students. Carver High School (all names are pseudonyms) was selected because it provided an environment in which we could easily access students and their teachers while unobtrusively collecting data. Consistent with the case study methodology, cases are purposefully selected because they offer an opportunity to examine specific phenomena as they occur. A school located in an urban area in the southwestern portion of the United States, it did not yet have a formal RTI system. As well, the school did not have a long history of failed initiatives to overcome, making it an ideal place for faculty and administrators to design a system for instruction and intervention. With a mission of continuous improvement, Carver provided an environment to answer the questions raised about how students' needs could be met at the high school level. In addition, given that students with disabilities were included in content area classes, the teachers were already familiar with special educators and the role they could play in supporting learning for all students, not just those with identified disabilities.

Researchers. As university faculty involved in field placements and teacher education, we partner with a number of professional development schools (e.g., Breault, 2010). Our work involves supervising student teachers, providing professional development, teaching students and demonstrating lessons, collecting evidence, and providing leadership. Carver is one of the professional development schools where we work. Our roles provided us access to classrooms and teachers, but the school itself operates under the direction of an administrative team. As such, we were able to bracket our experiences at Carver and compare them with those at the other schools we support. Furthermore, we did not have a predetermined model of RTI to be implemented but rather engaged in discussions with teachers and

administrators about the overall operation of the school and how resources might be aligned to improve student achievement. As resources to the school, we provided professional development and coaching to the teachers and administrators within the building. The entire faculty met every other week for 1.5 hr. Over the course of each year, we led 30 of the 36 sessions. The content of the 60 professional development sessions that we led over the 2-year study period focused on quality core instruction and supplemental interventions, as is described in the findings section. As part of these professional development sessions, we used videos of teachers who were not known to Carver teachers so that they could analyze and freely discuss what they observed in the lessons.

Student population. At the time of this study, Carver High School enrolled 444 students in Grades 9–12, 62% of whom received free or reduced-price lunch. This size is consistent with the small learning community movement advocated for in federal funding priorities (www2.ed.gov/programs/slep/index.html) and by private foundations (e.g., Gates Foundation, 2010). Although Carver did not receive funding under the small learning communities, it did operate as a career-focused urban school. During the final year of the study, the ethnic composition of Carver included 44% Latino or Hispanic, 22% Black, 16% Asian, and 18% White. Approximately 15% of the students were from military families, 8.5% received special education services, 4% had formalized 504 plans, and 70% spoke a language in addition to English. More than 90% of students who started the school year remained through the end of the year.

Teachers. All 23 teachers (100% of the school staff) agreed to participate in this study. Although not all of them agreed that interventions were part of their responsibilities, they all agreed that the school would be a better place for learning if the system improved to address the needs of students underprepared for high school and/or who failed to make progress in academic content. Thus, buy-in with the teachers was an ongoing process as we engaged in professional development and experienced increased success. It is not the case that all of the teachers were committed to RTI at the outset but rather that they supported the efforts as we learned together. The teachers were all highly qualified in their respective subject areas, as measured by state and federal teacher credentialing guidelines. Three of them were special educators who provided in-class support, and another served as the intervention coordinator and was released full-time from classroom teaching responsibilities. Of the 23 teachers, 10 were male and 13 were female. The teachers had from 1 year to 23 years of previous experience. Of the 23 teachers, 11 held graduate degrees and 16 were White, 3 were Asian or Pacific Islanders, 2 were African American, and 2 were Latino/a. The school focused on inclusive education for students with disabilities and English learners, affording all teachers an opportunity to teach a diverse class of students, including a range of English

language learners and students in gifted and talented education (GATE), Title I, special education, and general education.

Procedure

Observations. Field notes detailing classroom observations, staff development, faculty meetings, and individualized education program (IEP) meetings and taken during random visits to the school were collected by the authors over the 2 years of the study, 2007–2009. In addition to our roles as researchers and teacher leaders, we also supervised student teachers at the school, conducted staff development, and provided coaching to teachers.

Data collection averaged just more than 3 days per month; a total of 56 days were focused on data collection. Classroom observation times were not scheduled and typically lasted 20–55 min per classroom. Every classroom was observed at least three times; a total of 112 classroom observations were conducted. In addition, 87 pages of field notes were collected during scheduled staff development sessions and faculty meetings. One of the authors attended every IEP meeting, student study team meeting, Section 504 planning meeting, and problem-solving meeting regarding students with disabilities. Over the 2 years of the study, 55 nonclassroom observations of this sort were conducted. The researchers used a standard format that included space for observations, quotes, and notes to followup during interviews. The format also included space for coding the data during successive reviews (LeCompte & Preissle, 1993).

Interviews. Interviews were scheduled during the second year of the study. The teacher interviews focused on the components of an RTI system that was emerging, their implementation efforts, and the successes and challenges they experienced. At least one interview was held for each of the 23 teachers on the staff of the school. Of the teachers who provided extensive information, 9 were interviewed a second time to capture additional examples. The interviews were scheduled during the school day, and substitutes were provided for release time. The interviews occurred in a private setting at the school and lasted 30–45 min. The interviews were recorded and later transcribed, resulting in 134 pages of transcribed dialogue.

We used a semistructured interview guide that covered three main topics: the individual's teaching experience, the perception of RTI at Carver, and the teacher's experiences with students who struggled at school. The initial questions were broad and open ended to allow participants to comment fully on a variety of factors contributing to (and possibly detracting from) intervention practices. The teachers often talked about the success of the school, so we included a question that allowed them to discuss their successes ("What things have contributed to the successes at Carver?"). This question was not specific to RTI but rather was used to

assess the ideas teachers had about what was working overall. We also asked about their past experiences with students who struggled with school ("Describe the interventions you've provided students over your teaching career.") As they responded to each of the additional questions, we probed and asked for examples:

1. What supports, services, and resources have you found to be useful in your intervention efforts?
2. How would you describe RTI to another teacher?
3. What still needs to be done to implement RTI and effective intervention?
4. What's not working and needs to be changed?

The interview format allowed teachers to describe and reflect on their own experiences with intervention and the larger social context of the school. As a result, we were able to explore these teachers' interpretation of RTI and the ways in which their classroom behavior reinforced that meaning.

Student achievement data. Over the 2 years of this study, we used student achievement data, progress monitoring data, grade point averages, and attendance records as part of the decision-making and discussion points. Each of these data points is automatically stored in the school student records management system and easily accessible to school staff.

Data Analysis

Quantitative measures. Measures of central tendency, across-group comparisons (Triola, 1989) were calculated for grade point averages and student attendance. Frequency measures were used to analyze the referral rate for special education testing, and student achievement changes were documented using state test scores and comparing changes on the state department website, which includes a similar schools ranking.

Qualitative measures. We independently analyzed the interview and observation data for themes (LeCompte & Preissle, 1993). Each of us categorized the data into broad areas and highlighted quotes and examples that supported each area. Theoretical constructs emerged during data analysis using a constant-comparative method: specifically, the teachers' construction of RTI and how the school addressed the need for change. We discussed each theme until we reached consensus on each item. In doing so, themes were then named, explained, and illustrated with quotes from the transcripts. In cases where we initially disagreed, we set the information aside and came back to it the following week. We continued our discussions, sometimes integrating Internet searches and additional observations, until we reached consensus. After several months of analysis, we agreed on the selection of final themes and representative quotes.

A concern in a qualitative study such as this is whether or not the investigators have presented the social world of the actors as the actors themselves see it (Neuman, 1997). To address this problem, we showed the findings to four teachers randomly selected from those interviewed. This teacher member check meeting occurred after school in a classroom. We provided the four teachers with a draft copy of the findings section of this article and asked them to read it silently during the first part of the meeting. Teachers agreed that the information accurately described their school. The remainder of the meeting focused on ideas for sharing information with other schools, training new teachers, and collaborating with middle schools that would send them students. Thus, the teacher member check contributed greatly to the discussion and recommendation sections of this article.

Limitations. This study has a number of strengths, including intensive focus on one school, the diversity of the student population, significant amounts of data collection over a 2-year period, and direct contact with individuals closest to the situation under study, all factors increasing its validity. However, there are several limitations found in this study.

First, all participants were drawn from one school. Although this allowed for an in-depth look at the questions at hand, it compromises the ability to generalize results to other schools, districts, and states. Second, the study relies on correlational data, and thus causation cannot be implied. It may be that the findings presented in this study were affected by other factors. Given the amount of time we spent in the school, we believe that the implementation of RTI had a significant role in the outcomes, but that is still speculative. And third, the researchers are well known and trusted by the faculty of the school. The changes implemented might not have been so easily accomplished if such a partnership did not exist. Having said that, this study focused on what is possible when a high school faculty decides to turn its attention to students who require supplemental and intensive interventions.

Findings

Carver looks and feels different as a result of the collective effort to operationalize their motto, "It's never too late to learn." This motto was part of the school culture, which we used to introduce RTI. During our initial meeting with the teachers and administrators, we discussed the three-tier model of RTI, explaining recommendations from research to focus on quality core instruction and systematic interventions. The faculty agreed that creating an intervention system was a good idea and wanted to know more. Over the course of 2 years, the three tiers of RTI became a major discussion point and teachers developed an understanding of assessments used to identify areas of strengths and weaknesses as well as how interventions could address students'

needs. The school moved from a focus on individual teachers doing their best to improve achievement of the students assigned to them to a systematic focus on core instruction as well as supplemental and intensive interventions. We've organized the findings into the five themes that emerged during the case study. We have interspersed information about specific tiers into these themes.

Theme 1: Focus on Quality Core Instruction

Carver High School had selected an instructional framework based on the gradual release of responsibility theory (Pearson & Gallagher, 1983) as the core instructional model. As part of their RTI refocusing efforts, the faculty committed to using the instructional framework that they had previously adopted to "improve the overall school achievement," as a math teacher noted, and "ensure that all students have a fair chance of understanding the content the first time around," as an English teacher added. They agreed early on in our study that this instructional framework would constitute their Tier 1 efforts. Their framework consisted of four recursive elements that could be used in any order, including the following:

- *Purpose and modeling:* As part of every lesson, the teacher establishes the purpose with students. The purpose statements include both the content focus for the day as well as the language students need to understand as part of the content (Echevarria, Vogt, & Short, 2007). For example, as part of a science lesson, the biology teacher established the following purposes: identify the parts of a plant cell (content) using technical vocabulary when summarizing (language). In addition to an established purpose, the teacher modeled his or her thinking aloud for students. Rather than call on students to determine if they already had the answer, teachers demonstrated their expert thinking for students. As part of their modeling, we observed teachers demonstrate their comprehension of texts, problem solving in mathematics, scientific process, and use of visuals. For example, a math teacher modeled how to solve an equation by thinking aloud as she progressed from step to step.
- *Guided instruction:* As part of their instruction, the teachers at Carver focused on the scaffolds necessary for students to understand the content. Guided instruction occurred in both whole-class and small-group sessions. The teacher behaviors noted during guided instruction included prompting for cognitive and metacognitive work, as in "Does that make sense?" and "Think about the order of operations and try again." In addition, teachers used cues to refocus students' attention, as in "Reread

page 173” or pointing to the word wall or touching the students’ shoulder to shift attention. The teachers also used direct explanation when their prompts and cues did not result in student understanding. For example, while meeting with three students in small group and having attempted prompts and cues, an English teacher said, “The main idea, in this case, is the final sentence. Read that sentence again. The other sentences in that paragraph support that idea. Remember, the topic sentence is not always the first one.”

- *Productive group work:* On a daily basis, the instructional framework requires that students work collaboratively to consolidate their understanding of the content. In doing so, students are expected to talk with one another using the language of the lesson and to be individually accountable for some aspect of the task. In this way, the teacher can monitor student progress and determine which students need additional instruction or intervention and which students are progressing as expected. We observed a number of tasks such as reciprocal teaching (Palincsar & Brown, 1984) in which students focused on an aspect of comprehension as they read a piece of text together. We also observed students create collaborative posters in which each member of the group contributed ideas in a different colored marker. We saw students providing peer feedback and editing, signing forms that indicated that they had completed the tasks. The group tasks we observed provided students opportunities to engage with the curriculum and teachers with an opportunity to monitor student progress and provide additional instruction as necessary. For example, while students were working in productive groups, an English teacher we observed met with four students who had missed school the previous week and were falling behind in the lesson.
- *Independent learning tasks:* The final component of the instructional framework requires that students apply what they have learned and complete tasks independently. We observed formative assessments, in-class writing prompts, essays, and homework, each of which provided teachers with information about student understanding. The vast majority of independent tasks we observed were aligned with the stated content purpose and were things that students could complete because they had been the focus of instruction. There were some tasks that seemed out of context, and when asked, teachers would regularly say that they were format practice for the assessments students would take. As one teacher said, “My students don’t have a lot of experience with formal tests such as

the SAT, so I provide them with some practice so that they are familiar with the format when they sit for the exam.”

A significant number of professional development sessions (82%) and a great deal of the peer coaching (57% of the coaching time) at Carver focused on quality core instruction (Tier 1) during both years of the study. During professional development sessions, we discussed quality indicators of instruction, analyzed video clips of actual lessons, and discussed integration of quality instruction into teaching practices at Carver. As part of our ongoing coaching, we observed teachers using the indicators of quality agreed on during professional development sessions as our basis. During our debriefing discussions, we noted areas of strength as well as wonderings about the instruction observed. The majority of the follow-up discussion, however, centered on next steps for instruction and how to more fully implement the instructional model selected by the school.

As a special educator noted, “Without good first teaching, supplemental intervention doesn’t have a chance.” One of the teachers, when asked when he or she would change the focus of PD from core instruction said, “I’m not sure ever. Every time we work on this, it gets a bit deeper and I am more effective with one more student. It’s about how people learn and what we can do about it.” Every teacher at the school could talk about the framework and how it fit into their classroom.

This is not to say that all of the conversations were initially positive, especially during the first year. Although Carver had adopted an instructional framework, our early observations suggested that it was not always implemented. When confronted with this, some teachers became defensive; others were reflective and thankful. As an example of a tense conversation, a social studies teacher said, “You came in during a movie day. What do you expect?” We shared ideas that we gleaned from another teacher at the school who regularly paused the video to share her thinking and to make connections for students about what they were learning. In another tense conversation, a science teacher challenged the feedback saying, “It’s like you don’t support inquiry. I want the students to discover this on their own.” Again, we were careful not to tell this teacher how to teach but rather asked about the focus on the instructional model and how it was or was not being used to guide instruction. This same teacher, 2 years later, said, “Having a purpose and modeling doesn’t ruin inquiry. It’s about when you do these things, versus group inquiry work. My students need to have examples of my thinking so that they can try things on.”

Across the 2 years of data collection, we observed a great deal of teacher modeling. In no case did we observe a classroom in which a lecture lasted longer than 20 min; the

average lecture, which included teacher modeling, across the data set was 12.4 min. For example, a science teacher described her modeling for students, saying,

Modeling helps students think like a scientist. They hear me consider various opinions and how I solve problems. They also hear my use of technical vocabulary. It's good for all of my students and helps those who struggle a bit with the content to have my support in this way.

The biggest instructional change over the 2 years was the increasing number of instruction minutes focused on productive group work. During our first few months, there were times when we saw no collaborative learning or productive group work. One of the teachers told us, "I don't use group work because students don't get anything out of it." By the end of the 2 years, we regularly observed classrooms that met the school goal of "50% of the instructional minutes devoted to student-to-student interaction with the content." A social studies teacher commented on the use of productive group work when he said,

Getting them working, and talking, really helps them learn the content. I know that history can be boring, but it comes alive when they get to produce things like iMovies, graphic novels, or skits. When they do this work, they're using content vocabulary in real situations and they're producing things that tell me if they still need help. It also helps because they're teaching each other some of this, or at least reinforcing concepts for one another.

During an observation in a science classroom, a group of six students were watching a video together, taking notes, and stopping periodically to remove their headphones and talk with one another. When we asked the teacher about this, he said, "I used to show science films to the whole class. Now I have them work together on them so that I can meet with others in small groups."

Another major difference, and one that caused a great deal of initial stress with teachers, was the focus on independent learning. They agreed, and our observations confirmed, that the independent learning that students did within the classroom was very productive and useful. The conflict came about when one of the teachers raised the issue of homework during one of the professional development sessions. The opinions on homework varied widely, from it should be abolished to students are not doing enough to ensure rigor. One of the special educators said, "It's not fair to students with disabilities when we don't provide them accommodations and modifications to the homework; we do it for all of their other work." An English teacher said, "I don't support homework because I want to be there

when they make mistakes so that I can guide their learning." A math teacher said, "They need a lot more practice and they're not going to get all of the practice they need here at school." This conversation was very divisive, with teachers taking sides. It took several months, and many conversations, some of which we were not privy to, to resolve this conflict. The result of this discussion was an eventual change in the grading and homework policies of the school. In March of the first year of the study, the faculty voted that homework could be counted as part of the participation grade, which was limited to 10% of the student grade. The policy also says that homework does not have to be included in the grade as it is often considered practice. Furthermore, the policy notes that homework should be spiral review rather than unfamiliar content and that accommodations and modifications must be provided, as outlined in a student's IEP or 504 plan. Our subsequent observations revealed very consistent implementation with this change. During the "back-to-school" night early in the second year of the study, the math teacher who was very adamant about homework told a group of parents,

We do homework here, but not a lot and not current course content. In fact, you'll see homework in February that still focuses on what we taught in September. It's so that they keep these concepts fresh. We work on the new content in class and they still practice and apply at home, just things that they know how to do.

Theme 2: Use Course Competencies to Monitor Progress

In addition to the instructional changes to the core program that we observed, progress monitoring changed dramatically. At the outset of the study, individual teachers created a range of assignments and tasks for students to do. The teachers routinely collected and graded these assignments, giving students feedback on their work. There were a number of students who did not complete any of the outside class work and thus received no credit for the assignments. Others did some of the work, and a few students completed all of the work. When asked about planning instruction based on student work, we were regularly told that it was not feasible. As one teacher said, "I can't plan based on student work as some of my students don't do a lot of the work." Another said, "I'm not sure it would help because so many don't do the work and others just copy the work from friends." In fact, at the outset of this study, we could not find any evidence of progress monitoring in place in the school. Grades were given based on the work completed, and teachers attempted to meet the diverse needs of their students as best they could. At that point in time, 55% of the students at Carver had at least one F grade on their

progress reports. By the end of the 2-year study, only 12% of the students had not passed a class and were enrolled in the extended school year to make up the work.

The dramatic change came about when the teachers in the math department proposed a new system for progress monitoring and grading. They were not satisfied with their current efforts and “found that [they] couldn’t implement an intervention effort when [they] didn’t know what students already knew.” They proposed a competency system in which students would be assessed and graded based on state standards. The proposal included a change in grading: Any score below 70% would be considered incomplete and would require that the student retake the competency. In effect, this eliminated the grade of D and required that students keep working to pass each competency. In addition, they proposed that any student could retake a competency to improve his or her grade as there were several versions of each competency. The one caveat for retaking competencies, both for students who received an incomplete and for students who wanted to improve their grades, was that all of the homework and in-class work had to have been completed. Homework, the team recommended, would not count in the grade but rather would serve as practice for the competencies. They noted that the format for the competencies could vary from multiple-choice items to constructed response items to projects. As an example, the Algebra I teachers proposed that their grades be based on the average scores on eight different competencies.

Once approved, the competency-based grading system provided teachers with accurate information about students’ current level of understanding as well as areas of weakness. As one of the math teachers noted, “When my students take a competency, I know who needs extra help and in which areas. Like on the factoring competency, I knew which students totally had it and which needed different aspects to be retaught to them.” Without naming it as such, the math department had designed a set of curriculum-based assessments that would make it possible to monitor progress and design subsequent interventions.

Within the first year of the study, the entire school moved to the competency system. Although there was some initial concern about a decline in student motivation when points for assignment completion were no longer given, the teachers trusted the success that their math colleagues had experienced. The English teachers, as a group, were excited by the change and developed their competencies quickly during a series of after-school meetings. The history and social studies teachers initially had a hard time identifying topics for the competencies and were at odds with one another about what were “the most important ideas” in their respective classes. They did not develop their competencies quickly and labored over the topics and methods of assessment. The principal offered them two release days and two paid summer curriculum development days to focus on their competencies.

One of us was in attendance at each of these sessions, which turned out to be productive and resulted in interesting assessments of students’ knowledge, ranging from multiple-choice tests to a project in which students create a graphic novel.

The development of the competencies for each course essentially ensured that there was an assessment of the knowledge and skills required for success. As a special educator noted,

There aren’t many tools for progress monitoring at the high school level. Our students are expected to develop their understanding of content standards so the competencies provide us with a way to design instruction and monitor how well students are doing. And then we can determine who needs supplemental interventions to be successful.

An English teacher noted,

I have a profile for each student now, based on the competencies, and I know what each of them really needs. Some of my students need to focus on literary response, which I can teach them in a small group as they read novels. Others need vocabulary work, which I can also teach in a small group. I can also provide those students with more independent vocabulary practice. I’ve never had this much information about my students; information that I can use to plan my instruction.

A science teacher and coach confirmed the value of competencies in both grading and progress monitoring:

My grades used to be a mix of homework, class work, labs, projects, and tests. I assumed my students understood the content because of the total points they earned. Now I get to see who understands and who needs more practice. The homework, class work, labs, and projects are all practice and I don’t score the practice. The practice helps me figure out who needs more help, who needs to attend the tutorials, and who is ready for the game.

Theme 3: Schedule Intervention to Supplement, Not Supplant, Core Instruction

At the outset of the study, supplemental intervention (Tier 2) was defined as the after-school program, which was provided to any student who stayed after dismissal. The after-school program coordinator and the teachers recruited students to attend, parents scheduled their children to attend, or students volunteered to attend. The offerings in the after-school program included homework help, tutoring, sports, driver’s

education classes, computer access, library time, and various recreational activities. In essence, the program operated to “keep the kids off the street,” as the director said, by providing anything they could to motivate students to attend.

Over the 2 years of the study, the definition of supplemental services evolved. Having a progress monitoring system was critical to this evolution and the resulting improvements documented previously. As one of the teachers noted,

I didn't have a clear sense of who needed help before, so I just moved on with the lessons. I let the grades reflect their understanding, not really knowing what else I could do. Now I know that I can provide a lot of supplemental intervention in my own classroom while other students work productively.

A true Tier 2 approach to small-group supplemental intervention was one of the first noticeable changes observed as a result of the progress monitoring made possible by the competencies. Within 3 months of implementing the competencies, we regularly observed teachers interacting with small groups of students, whereas this was much less common and mostly limited to English classrooms previously. As students worked in productive groups, teachers meet with small groups of students who had been identified as needing additional instruction and intervention to be successful. As a social studies teacher commented,

I never thought I'd be working with small groups like our kids get in elementary school. But it works! I can meet a lot more of the needs when I provide supplemental intervention within my class. I take parts of the competency and figure out who still needs to learn that information and I go for it. The rest of the class is still working, and I get some time to tailor my instruction. And it feels good to know that I can do something to help them learn this stuff.

Although small-group guided instruction is part of the school's definition of Tier 1 (quality core instruction and differentiation), specific students who had been identified during screening assessments or as part of their performance were scheduled for additional, supplemental interventions that were delivered by the classroom teacher while other students in the class engaged in productive group work. In addition, the special education faculty provided some of the supplemental interventions to students targeted for Tier 2 support as part of their early intervening services. This was relatively easy to schedule because the special education teachers were regularly in classrooms to support students with identified disabilities.

During the second year of the study, the teachers voted to lengthen the lunch period so that they could provide additional supplemental intervention to students who needed it.

Each teacher scheduled time twice a week for lunchtime tutorials. As part of the college-going culture that the school was fostering, these were identified as “office hours,” and the specific days and times were posted on the door outside each classroom. Students who had an incomplete were required to attend office hours for the class in which they needed supplemental intervention. These office hours were also open to students who wanted to retake competencies to improve their grades or for students who wanted to have questions answered. The comment of one teacher resonated with several others when she said,

I used to make more referrals for special education when students needed a lot of help. I don't even think about that now. I know that our supplemental and intensive interventions will help almost all of our students. If they aren't successful, then there is a ton of information about what has been tried that really helps the team decide what to do next.

Within 2 months of implementation, the office hours became too crowded to be effective. As a remedy, the teachers decided that students could attend office hours with any content teacher in which they had an incomplete rather than their specific teacher. This provided students with more options for receiving supplemental interventions and allowed them to select the days that they wanted to attend office hours. One of the students, walking in a math classroom, said that he chose this teacher “because I get to hear it explained a different way, which helps me learn it. Then I do better on the comps [competencies] and don't have to retake them.” In addition, the school hired students as peer tutors who worked during the 20-min tutorial period under the direction of the classroom teacher. These peer tutors applied for their jobs, submitted resumes, and were interviewed before being offered a position. The peer tutors focused on students who needed to complete homework or in-class work so that they were eligible to retake competencies. They signaled the teacher to join the conversation when a student did not understand something after the tutor attempted an explanation. On a daily basis, the school funded 20 office hour peer tutors at a cost of \$80 per day.

Theme 4: Dedicate Resources to Support Intervention Efforts

As part of the effort for the second year, the school hired a full-time reading specialist who was released from her regular duties so that she could coordinate all of the supplemental and intensive intervention efforts. During the first year of the study, it was up to individual teachers to identify and track students who needed supplemental interventions. By the second year of the study, the intervention teacher spent part of her time identifying students in need of

supplemental intervention. The rest of her time was spent focused on the academic component of the after-school program, supervising peer tutors, and providing intensive intervention.

As part of her job, the intervention teacher (reading specialist) redesigned the academic part of the after-school program. Like office hours, the after-school program provided students with supplemental intervention based on the needs identified on competency assessments. Every student who had an incomplete for more than 2 weeks was enrolled in an after-school class. Attendance was required for at least 1 hr per day for 3 days a week. This requirement was included in the student handbook and in the back-to-school mailing. In addition, as students approached the 2-week time frame to clear an incomplete, the intervention teacher drafted a written contract with the student and notified the parent by phone of the added hour of school. These after-school classes were staffed by teachers earning extra pay, staff members from the after-school program, and peer tutors. Observations of these classes revealed students working independently or with tutors and adults in completing assignments. We did not see the adults stand in the front of the room and speak to the whole group. When we asked about this, a teacher said, "They know what they need to focus on when they get here. They take a look at their scores on [the online grade system] and get to work." The cost of the after-school academic recovery efforts averages \$3.80 per student who attends. This is funded by Title I dollars, special education monies for students with disabilities, and after-school program funds.

We did regularly observe students being escorted from a classroom to another location after the school day ended. This change involved significantly more guidance and structure than was previously provided for students. As one of the students said, on his way to after-school academic recovery (the school's name for this supplemental support), "It's good for me, but I don't really want to do it." The teachers joked about this and noted that they regularly selected a student in their last period class to walk to another room for after-school intervention. As one of them said, "It's just a little more motivation for them to get there and get done." Another teacher commented, "Right now I want it more for her than she wants it for herself, but that will change. Once she tastes success, she'll be hooked and start getting herself the help she needs." Interestingly, we regularly observed teachers walking students to after-school classes in other content areas. An English teacher said, "He's doing fine in my class, but needs a little push in math [laughing and looking at the student]. A few more doses of extra good teaching and you'll have it; that competency will be behind us."

In addition to the competencies, the intervention teacher instituted several screening measures, which were administered annually to all students during the first week of school

and to all new students who enrolled during the school year. Although technically part of Tier 1, they were not included until the intervention teacher was hired and wanted to further the implementation of RTI at Carver. The goal of the screening tools was to identify students in need of supplemental intervention, including a standards-aligned assessment in mathematics designed by the County Office of Education, a reading assessment that includes vocabulary and comprehension, a writing assessment that includes spelling and mechanics as well as common traits of quality writing, and a basic skills and knowledge assessment developed by the content teachers at the school.

The results of the screening tools are shared with the student and his or her family as well as each of the student's teachers. Based on the identified needs, students are scheduled for office hours and/or academic recovery after school. As one of the teachers commented,

I know who needs help with reading from the first week of school. I can build that into my class and know that the student is getting focused attention at other times of the day as well. That doesn't mean that the student has a disability; often it's just about the opportunities that they haven't had to be successful.

Theme 5: Adopt a Schoolwide Approach to RTI to Maximize Intervention Impact

At the outset of this study, we could not find any student who received individualized intensive intervention (Tier 3), other than those students who were already identified as having a disability. When we asked about this, the common reply suggested that individualized instruction was not possible in a high school and that a student who needed that level of support would need an IEP. As one of the teachers at the time suggested, "I wish I could individualize for all of my students, but it's just not real. The sped [special education] teachers are the only ones who have time for that."

During the first year of the study, not much changed in terms of Tier 3 intensive interventions other than the purchase and use of an online intervention program that students could use at home or at school, provided they had time and access to the Internet. This resource was often recommended during parent meetings when students were experiencing difficulty, yet an English teacher commented, "Almost no one uses it." During the second year of the study, the intervention teacher focused on intensive interventions and scheduled time within English classes for specific students to work on the computer program. She also set goals with students to complete various tasks online, either at home or as part of their after-school activities. Thus, part of the Tier 3 intervention was delivered via an approved intervention curriculum, Jamestown Reading

Navigator, that provided students with practice and reinforcement of reading skills.

In addition, the intervention teacher identified a number of students who were not successful in supplemental, Tier 2 interventions and scheduled time with each of them. These lessons were explicit and intentional. Each started with a targeted text, and the student was asked to read aloud while the intervention teacher collected assessment data, related to decoding, fluency, and vocabulary. Following the familiar reading, the teacher and student talked about the text and the teacher assessed the student's comprehension. The teacher provided direct instruction in an area of need as identified on the assessment, and each session ended with a writing task. For example, we observed Uriel receive intensive intervention. The focus for part of the lesson was on vocabulary. The intervention teacher directly explained the meaning of several prefixes and provided examples of the use of morphology while reading. Uriel was then asked to determine the meaning of a number of words with these prefixes and then read from a text in which some of these words were used.

Over the course of the second year, as students made progress, the intervention teacher met with a classroom teacher and invited that person to assume the mentoring of the student. By the end of the second year of the study, every teacher and certificated adult on campus had provided individualized intervention to at least one student. The decision to do so was borne out of a series of staff meetings about redistributing workloads to reduce redundancy and maximize human and fiscal resources. The administration and staff agreed that each of them would be responsible for delivering Tier 3 intensive interventions, including the principal and vice principal. The net effect was that students could be served without placing the burden on the English and mathematics departments alone. We observed these lessons occurring before school, during class time while other students were working, during lunch, and after school.

The intervention teacher suggested that the students receive at least three intensive instruction sessions each week, and we regularly observed this happen. As one of the elective teachers noted,

I see her every day. Our time together is short, about 15–20 minutes a day. I help her read her textbooks and assignments. And I help her be a better reader. We keep a journal that is private between us. She writes to me and I write back. I give her feedback on her language use and on the topics she wants to talk about. I really think it's more about behavior with her; she didn't do well in school because she didn't like herself and she didn't think that anybody liked her. She doesn't need special education; she just needs a mentor, a tutor, and friends.

As students were transferred to teachers, the intervention teacher assumed the intensive intervention role for additional students, maintaining the direct teaching of about 14 students each week. During the second year of the study, the intervention teacher and the classroom teachers provided intensive intervention to 45 students. Of those, only one did not make progress and was referred for special education testing. She qualified for special education services as a student with a learning disability and now receives accommodations and modifications to her curriculum.

In reflecting on the intensive intervention provided to students at Carver, the intervention teacher said,

We can do so much better, and we will. But it's pretty good. When a student makes progress and you see that learning take off, you go home proud. I was thinking about Maria. When she came to the US, she didn't speak any English. Her eighth grade records say that she was silent and didn't come out of that silent phase very quickly. She didn't make much progress and they considered special education testing, but the year ended before anyone took action. She didn't do well on the screening measures, so she was scheduled for both supplemental and intensive intervention. She didn't have time to spare. Her Spanish is beautiful; very academic. All we really did was build her confidence and let her know that translating in her mind was fine; she could take her time and think about her response. And then she was off. She increased her proficiency by three levels in one year and was redesignated recently. She doesn't have a disability, but without the intervention we might never have known that.

Achievement, Grade Point Average, and Attendance Rates

Overall, students at Carver High School improved on these measures over the 2 years of the study. Although we cannot claim that the implementation of RTI was the sole cause of the improvement, it is noteworthy that student achievement accelerated during the 2 years of the study compared with previous years, and the presence of a developing RTI system did not appear to depress these markers.

By the end of the 2 years, Carver outperformed the state-identified similar schools by 11%. Comments from an independent audit organized by the administration noted that Carver "outperforms all [local] schools in the percentage of students at or above proficiency in ELA and math." Compared to the baseline year, student achievement at Carver increased overall by 4% on state achievement measures. This improvement held for all significant subgroups including African American students, Hispanic or Latino students, and students living in poverty. Although some

Table 1. Indicators of Success.

Indicator	Baseline	2-Year Growth Level
Overall GPA	2.89	3.36
GPA for students living in poverty	2.26	3.12
GPA for students with disabilities	1.30	3.02
Attendance rate (%)	90.4	95.6
Referrals for special education testing (%)	17.0	3.0

achievement gaps remained (e.g., between African American and White students), the gap narrowed over the 2 years despite the fact that White students performed better over that same time. By the end of the study, students with disabilities performed similarly to their matched ethnicity peers with the exception of Hispanic or Latino students with disabilities outperforming their Hispanic or Latino peers without disabilities. As one of the teachers noted, “Our interventions aren’t just about identified students, it’s about learning overall.”

In addition to state test scores, other indicators of success were evident (see Table 1). For example, overall grade point averages (GPAs) increased from 2.89 to 3.36, which was statistically significant ($t = 12.58$, $df = 742$, $p < .001$). The largest gains in GPA came from students living in poverty and students with disabilities. For students living in poverty, average GPA increased from 2.26 to 3.12 ($t = 16.84$, $df = 414$, $p < .001$). For students with disabilities, average GPA increased from 1.30 to 3.02 ($t = 7.26$, $df = 61$, $p < .0001$). Although GPA is influenced by a number of factors other than student understanding, when combined with test scores it is reasonable to suggest that students are learning more. As one of the teachers noted, “I’ve never given so many good grades even though my competencies [tests] are harder than ever. They really understand what I’m teaching and it shows in everything we do.”

Attendance also improved over the 2 years of the investigation. By the end of the 2-year data collection period, attendance had increased from 90.4% to 95.6%, which compares favorably to the attendance at suburban schools in the area. We analyzed attendance data for patterns based on student ethnicity, socioeconomic status, and disability, and no significant trends were identified. In other words, as part of the intervention efforts, students started coming to school more often. As one of the teachers noted in her interview, “We do a lot in one day, so they don’t want to miss. School’s interesting now, and they do real work in every class. In fact, I get texts during every break that my students would rather be at school.” Another teacher said,

Students miss us and each other on weekends and breaks; they tell us all the time. They know that they

can be successful now and they don’t want to give up that feeling. School is a confidence builder, not something you just have to endure.

Referrals to special education also decreased over the 2-year investigation. During the baseline year, 17% of the general education population was referred for special education testing, compared to 3% during the final year of the study. By the end of the data collection period, 8.5% of Carver students had an IEP, which compares to the county average of 11.5%. As an English teacher commented during her interview, “I used to refer students to special education when I needed help with them. Now I have that help, and I am part of that help.” Another said, “Other than for state and college testing, it doesn’t matter if the student has an IEP. They’re still in the class getting good instruction and supports to be successful.” A special educator commented, “I’m in a lot of classrooms every day for supplemental intervention, but not only for students with IEPs. Sometimes I’m there as part of the RTI efforts, helping a student become successful.”

Discussion

The findings from Carver High School suggest that RTI can be implemented in a high school setting and that it might be a way to reduce referrals to special education, decrease the numbers of students receiving special education services, and improve the achievement of students overall through responsive instruction. Although Carver is a smaller learning community, it is important to note that there are more personnel available at larger schools. Thus, it seems reasonable to suggest that this work can be scaled to an appropriate level at nearly any high school. Of course, this assumes that there is funding provided for interventions.

At Carver, it took 2 years to reach the level of success documented in this case study. But everyone involved with the school suggests that there is still work to be done. The achievement gap has not been fully closed, teaching practices can continue to improve such that more and more students master content during core instruction, and there are still students who need extensive support to be successful. In other words, Carver is a work in progress, but one in which real students and real teachers have made a difference for students with histories of educational failure. As Khan and Mellard (2008) noted, “RTI can be viewed as a framework of system reform” (p. 4). In reflecting on the successes and challenges of implementing RTI as a system reform at the high school level, we identified several factors that served to facilitate the success.

First, our experience with Carver High School suggests that the whole school has to be involved with the effort for it to be successful. In other words, every one of the adult staff members and some peer tutors need to become involved

in intervention efforts. We documented elemental themes around the concepts of *focusing efforts on quality core instruction* as well as *adopting a schoolwide approach to RTI to maximize its impact*. The major breakthroughs in teaching and learning came from the focus the school had on developing an intervention system, not a suggestion that individual teachers do their best to improve student learning. It took the whole school to commit to competencies so that all teachers had access to progress monitoring data. Had a teacher not used competencies, his or her students would not have been included in progress monitoring based on course content knowledge. It took the whole school to organize supplemental and intensive interventions, from getting students where they needed to be to providing instruction during office hours and after school. It also took a commitment from the entire school to implement an instructional framework that guided lesson planning and delivery. The instructional framework served as an overarching guarantee that students had access to quality teaching in the first place. We question whether the successes at Carver could have been realized had the faculty been fractured or disinterested in collaboration. This is an important point that deserves additional research attention. When secondary schools are places where teachers engage in professional learning communities or other systems of collaboration, RTI is likely to be easier to implement. As a future study, we would like to examine the implementation of RTI in a high school that has been resistive to change and where teachers do not have a history of cooperation. The present study presents what is possible in one type of school, and data are needed on a variety of different types of schools.

Clearly, professional development was critical to ensure that RTI efforts at Carver were successful. Carver teachers are a knowledgeable group and a group committed to their own learning. The professional development sessions were well attended and participatory. Part of the success of the professional development, we think, comes from the fact that we were visitors to their classrooms regularly. We did not profess to have all of the answers but clearly communicated our interest in learning how RTI could, or could not, be used to improve student achievement. Although the topics for professional development were derived from the school's instructional framework and our observations, teachers regularly asked for additional information on specific topics. As such, we did not have a professional development calendar with topics throughout the year. Instead, we had scheduled professional development time and made decisions about the most necessary topics as part of our ongoing engagement with the school's faculty and administration. Our data are consistent with those of Kratochwill, Volpiansky, Clements, and Ball (2007): "As with other systemic school improvement efforts, implementing RTI requires change on many levels, with the most significant

change pertaining to the professional practice of education and mental health professionals" (p. 619). Carver devoted 80% of their professional development time to Tier 1, quality core instruction, during the 2 years of this study. During those sessions, teachers were engaged in discussions about quality instruction and how to implement effective practices. They also received coaching, at least monthly, on their actual implementation. Given that high schools are often void of teacher modeling and productive group work, it seemed reasonable to focus on this level with the entire faculty. Having said that, Carver teachers will need a great deal of future professional development in other aspects of RTI for the initiative to become the school's operating system. But, as Johnson, Smith, and Harris (2009) remind us, "It is impossible to recommend a standard sequence of professional development topics here because each building's needs will vary" (p. 44). Instead, the professional development should be based on needs assessments and questions that arise in the process. That is not to say that the professional development is not rigorous, evidence based, and coordinated. Our data just suggest that professional development should be based on the aspects of the RTI framework that are underdeveloped and ready to be implemented.

Second, assessments are critical to the operation of an RTI framework. As Kratochwill et al. (2007) note,

Successful implementation of RTI is multifaceted and involves knowledge of evidence-based interventions, multitiered intervention models, screening, assessment and progress monitoring, administering interventions with a high degree of integrity, support and coordinated efforts across all levels of staff and leadership within the school, and sustaining systems of prevention grounded in an RTI framework. (p. 624)

Our data suggest that lack of assessment information results in an inability to provide meaningful intervention. Screening tools are important and generally available, but may not be regularly used to identify students in need of supplemental and intensive intervention. If they are not, intervention is likely to be unfocused or unsuccessful. But screening tools are only the start. Progress monitoring is key to the operation of an RTI framework. Unfortunately, there are too few tools available for high school teachers to use in progress monitoring (Brozo, 2009–2010). When the faculty of Carver *defined course competencies to make intervention meaningful*, an emerging theme of this study, Tier 2 and Tier 3 interventions took on a purposeful tone that motivated students and guided teachers.

Third, the school was propelled forward when *personnel were assigned the task of coordinating intervention efforts*. Although progress was made before the study, and steady progress continued during the first year, the real breakthroughs came when intervention efforts were coordinated

and organized. Although this finding should not be a surprise, busy high schools often do not allocate sufficient funds for personnel to direct intervention efforts. Instead, schools often buy programs or require that classroom teachers do “intervention on the side,” as one teacher told us during the outset of the study.

In essence, the intervention teacher became the “conscience of intervention,” as one teacher said. Another commented,

When we see her or talk with her, we’re reminded of our commitments to focus on students who are at risk. Without her, it is too easy to get caught up in all of the other things, class advisor, student government, grades, etcetera. Her presence around the school helps keep us focused.

A simple Internet search reveals the range of job openings and job responsibilities for the “RTI coordinator,” from assessment coordination to direct instruction to professional development. Given the critical role that the coordinator played at Carver, our data suggest that schools should allocate funds for this type of position and that this person needs to have a specific skill set that includes working with both adults and students.

The fifth theme that emerged in this case study concerned the *scheduling of intervention efforts to supplement, but not supplant, core instruction*. Although there is a certain surface logic in taking this on first, the faculty at Carver allowed this to change over time. Because they valued their core instruction through the constant attention in professional development and coaching, it became apparent early on that students participating in interventions needed to be present. Therefore, Tier 2 became an in-class phenomenon, made possible by an instructional framework that emphasized guided instruction and productive group work. As this became the norm for organizing the classroom, opportunities for Tier 2 interventions appeared. As well, the faculty agreed that it was necessary for Tier 3 interventions to occur outside of classroom time and established innovative tutorial times during lunch and after school.

At the high school level, the rigor of the content rises dramatically, and students who have gotten by in middle school may quickly fall behind in the upper grades. Some may be students with undiagnosed learning disabilities, whereas others may struggle with work habits or language demands. It is difficult to tell the difference among them when the only evidence available is a declining GPA. This was not the result at Carver and may be attributed to the opportunities teachers had to work closely with struggling students.

Future Directions

The results of this case study suggest that further research into RTI at the high school level is warranted. For example,

the teachers in this study seem to have developed a promising progress monitoring approach through their competencies. This could be the basis of an empirical study in which some randomly selected teachers use competencies to monitor progress and others do not. In addition, the focus of Tier 1 seemed important in this study, which also suggests additional research efforts. And finally, a clinical trial of whole school implementation of RTI at the high school level would provide further evidence of the effectiveness of this approach in improving student achievement.

Conclusion

Although an RTI framework was used and Carver staff figured out how to implement this framework, it was a difficult process. Fuchs and Deshler (2007) remind us that RTI requires, among other things, “willingness to stay the course,” whereas Daly, Martens, Bamett, Witt, and Olson (2007) suggest that “selecting, organizing, and delivering intervention programs to meet the needs of all students requiring assistance may be one of the most formidable challenges faced by schools” (p. 575). In retrospect, Carver attempted to implement both of the processes that Shinn (2007) describes: “little rti” and “big RTI.” Big RTI is the entitlement process by which students with learning disabilities are identified. The little rti, on the other hand, is a school improvement process designed to ensure that students receive the instruction, intervention, and support necessary to be successful. In other words, there really are two different RTI/rti models possible within a school. Carver focused on both. Although this was a lot to accomplish, the school and its students seem to be better off because the teachers focused on ensuring that students benefited from the instruction they received (little rti) and, along the way, ensured that special education eligibility decisions were considered only after a student had access to quality instruction and a range of interventions (big RTI). In acknowledging this task, and the difficulty of accomplishing a great deal in a short time, we asked teachers for advice for high schools considering implementation. The quote that stands out comes from a first year teacher who said, “I can’t imagine schools could operate in any other way. I just couldn’t let my students fail.”

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References

- Ardoin, S. P., Witt, J. C., Connell, J. E., & Koenig, J. L. (2005). Application of a three-tiered response to intervention model for instructional planning, decision making, and the identification of children in need of services. *Journal of Psychoeducational Assessment, 23*, 362–380.
- Barnett, D. W., Daly, E. J., III, Jones, K. M., & Lentz, F. E. (2004). Response to intervention: Empirically based special service decisions from single-case designs of increasing and decreasing intensity. *Journal of Special Education, 38*, 66–79.
- Barton, R., & Stepanek, J. (2009). Three tiers to success. *Principal Leadership, 9*, 16–20.
- Bateman, D. (2008). Due process hearing case study. *Teaching Exceptional Children, 41*, 73–75.
- Breault, R. (2010). Finding meaning in PDS stories. *Teacher Education Quarterly, 37*, 177–194.
- Brozo, W. G. (2009–2010). Response to intervention or responsive instruction? Challenges and possibilities of response to intervention for adolescent literacy. *Journal of Adolescent & Adult Literacy, 53*, 277–281.
- Burns, M. K., Appleton, J. J., & Stehouwer, J. D. (2005). Meta-analytic review of responsiveness-to-intervention: Examining field-based and research-implemented models. *Journal of Psychoeducational Assessment, 23*, 381–394.
- Daly, E. J., III, Martens, B. K., Bamett, D., Witt, J. C., & Olson, S. C. (2007). Varying intervention delivery in response to intervention: Confronting and resolving challenges with measurement, instruction, and intensity. *School Psychology Review, 36*, 562–581.
- Deno, S. L. (1985). Curriculum-based measurement: The emerging alternative. *Exceptional Children, 52*, 219–232.
- Dorn, L. J., & Schubert, B. (2008). A comprehensive intervention model for preventing reading failure: A response to intervention process. *Journal of Reading Recovery, 7*, 29–41.
- Duffy, H. (2007). *Meeting the needs of significantly struggling learners in high school: A look at approaches to tiered intervention*. Washington, DC: National High School Center. Retrieved from http://www.betterhighschools.org/docs/NHSC_RTIBrief_08-02-07.pdf
- Echevarria, J., Vogt, M., & Short, D. (2007). *Making content comprehensible for English learners: The SIOP model* (3rd ed.). Upper Saddle River, NJ: Allyn & Bacon.
- Ehren, B., Deshler, D., & Graner, P. (2010). Using the content literacy continuum as a framework for implementing RTI in secondary schools. *Theory Into Practice, 49*, 315–322.
- Fuchs, L. S., Deno, S. L., & Mirkin, P. K. (1985). The effects of frequent curriculum-based measurement and evaluation on pedagogy, student achievement, and student awareness of learning. *American Educational Research Journal, 21*, 449–460.
- 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, L. S., Fuchs, D., & Compton, D. (2010). Rethinking response to intervention at middle and high school. *School Psychology Review, 39*, 22–28.
- Gates Foundation. (2010). *Transforming the high school experience: How New York City's new small schools are boosting student achievement and graduation rates*. Retrieved from <http://www.gatesfoundation.org/highschools/Documents/2010-transforming-high-school-experience.pdf>
- 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.
- Hintze, J. M., Christ, T. J., & Methe, S. A. (2006). Curriculum-based assessment. *Psychology in the Schools, 43*, 45–56.
- Individuals with Disabilities Education Improvement Act of 2004, Pub. L. No. 108-446, 118 Stat. 2647 (2004).
- Johnson, E. S., Smith, L. A., & Harris, M. L. (2009). *How RTI works in secondary schools*. Thousand Oaks, CA: Corwin Press.
- Johnston, P. (2010). An instructional frame for RTI. *Reading Teacher, 63*, 602–604.
- Khan, C., & Mellard, D. (2008). *RTI in the language of a classroom teacher: Improving student success through collaboration*. Lawrence, KS: National Center on Response to Intervention.
- Kratochwill, T. K., Volpiansky, P., Clements, M., & Ball, C. (2007). Professional development in implementing and sustaining multitier prevention models: Implications for response to intervention. *School Psychology Review, 36*, 618–631.
- Kummerer, S. E., & Lopez-Reyna, N. A. (2009). Engaging Mexican immigrant families in language and literacy interventions: Three case studies. *Remedial and Special Education, 30*(6), 330–343.
- LeCompte, M. D., & Preissle, J. (1993). *Ethnography and qualitative design in educational research* (2nd ed.). San Diego, CA: Academic Press.
- Mastropieri, M. A., & Scruggs, T. E. (2005). Feasibility and consequences of response to intervention. *Journal of Learning Disabilities, 38*, 525–531.
- Neuman, W. L. (1997). *Social research methods: Qualitative and quantitative approaches*. Needham Heights, MA: Allyn & Bacon.
- O'Connor, R. E. (2000). Increasing the intensity of intervention in kindergarten and first grade. *Learning Disabilities Research and Practice, 15*, 43–54.
- Orosco, M. J., & Klingner, J. (2010). One school's implementation of RTI with English language learners: "Referring into RTI." *Journal of Learning Disabilities, 43*, 269–288.
- Palincsar, A. S., & Brown, A. L. (1984). Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities. *Cognition and Instruction, 1*, 117–175.
- Pearson, P. D., & Gallagher, M. (1983). The instruction of reading comprehension. *Contemporary Educational Psychology, 8*, 317–344.

- Pereles, D., Omdal, S., & Baldwin, L. (2009). Response to intervention and twice-exceptional learners: A promising fit. *Gifted Child Today*, 32, 40–51.
- Ryndak, D. L., Morrison, A., & Sommerstein, L. (1999). Literacy before and after inclusion: A case study. *Journal of the Association for Persons With Severe Handicaps*, 24, 5–22.
- Samuels, C. A. (2009). High schools try out RTI. *Education Week*, 28, 20–22.
- Shinn, M. R. (2007). Identifying students at risk, monitoring performance, and determining eligibility within response to intervention: Research on educational need and benefit from academic intervention. *School Psychology Review*, 36, 601–617.
- Taylor, S. J. (1991). Toward individualized community living. In S. J. Taylor, R. Bogdan, & J. A. Racino (Eds.), *Life in the community: Case studies of organizations supporting people with disabilities* (pp. 105–112). Baltimore, MD: Brookes.
- Torgesen, J. K. (2003, December). *Operationalizing the response to intervention model to identify children with learning disabilities: Specific issues with older children*. Paper presented at the National Research Center on Learning Disabilities Responsiveness-to-Intervention Symposium, Kansas City, MO.
- Triola, M. F. (1989). *Elementary statistics* (4th ed.). Redwood City, CA: Benjamin/Cummings.
- VanDerHeyden, A., Witt, J., & Barnett, D. W. (2005). The emergence and possible futures of response to intervention. *Journal of Psychoeducational Assessment*, 23, 339–361.
- VanDerHeyden, A., Witt, J., & Gilbertson, D. (2007). A multi-year evaluation of the effects of a Response to Intervention (RTI) model on identification of children for special education. *Journal of School Psychology*, 45, 225–256.
- Vaughn, S., Cirino, P. T., Wanzek, J., Wexler, J., Fletcher, J. M., Denton, C. A., & . . . 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.