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## Responsiveness-To-Intervention: A “Systems” Approach to Instructional Adaptation

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Many students with disabilities and numerous additional at-risk students are performing abysmally in school. Figure 1 shows 9 years of data across a span of 14 years on the reading performance of fourth-grade students—with and without disabilities—on the National Assessment of Educational Progress. Each data point represents an averaged percentage of children nationwide with or without disabilities performing at or above “proficiency,” which signifies grade-level achievement. In 1998, the earliest year in the figure, only 10% and 30% of students with and without disabilities, respectively, performed at or above “proficient.” In other words, 90% and 70% of the two groups performed *below* proficient, or below grade level.

How does one explain such inadequate school achievement? Many have pointed the finger of blame at inept teachers, tenure laws, and poor teacher education programs (Shumer, 2014). Recommendations have been made that the U.S. should emulate Finland’s educational system, including the relatively high salaries Finns give their teachers. But, as suggested in a recent UNICEF report (Ingraham, 2014), maybe the most important explanation of many American students’ poor academic achievement is poverty. Shumer (2014) writes that more than 21% of children in America live in poverty (in comparison to only 4% in Finland).

In many classrooms, children will differ dramatically in terms of family income. But they will also vary on additional dimensions (related and unrelated to family income) such as out-of-school experiences and interests, levels of motivation to do well, and learner characteristics

associated with cognitive and linguistic strengths and weaknesses. Put differently, for all children in a classroom to do well, many will require different things from their teacher—just as athletes on the same team vary in terms of what they need from their coach to perform optimally. It is reasonable to believe that teachers who adapt their instruction—who attempt to accommodate for individual differences—will generally be more successful with a greater number of children than teachers who do not. Which leads to the question of whether teachers do indeed adapt their instruction—and if so, how? The pertinent research literature that bears on this question describes two kinds of teacher adaptations: *routine* adaptations and *specialized* adaptations (L. Fuchs, Fuchs, & Bishop, 1992).

### **Teacher Adaptations**

Routine (i.e., regularly scheduled) adaptations include variations in materials, grouping arrangements, and goals, which teachers may establish at the start of the year. Maybe the most common example of this kind of adaptation is the use of multiple reading groups that work from different levels of text. Whereas one might expect many teachers to make use of routine adaptations, classroom-based research suggests otherwise. Baker and Zigmond (1990) investigated elementary-grade teachers' use of routine adaptations by interviewing and observing them during reading and mathematics instruction. The teachers typically taught in large groups, and followed lessons incorporating little or no differentiation based on student needs. McIntosh, Vaughn, Schumm, Haager, and Lee (1993) observed similar teacher behavior in 60 social studies and science classes across the elementary grades.

Research also suggests that few teachers employ specialized adaptations when students do not respond to their instruction. Peterson and Clark (1978) interviewed experienced teachers who said they introduced few changes in their lessons when it was apparent that students were

unresponsive. L. Fuchs et al. (1992) corroborated these findings. Among 110 general educators in the L. Fuchs et al. study, only 27 (25%) made any revision to their 6-week instructional plans for students with learning disabilities (LD). Further, most of these adaptations reflected reduced expectations. Among 13 of the 27 teachers who engaged in specialized adaptations in mathematics, two teachers moved their students with LD out of the classroom into a separate math program. Six extended timelines for students with LD to achieve instructional objectives. Two *decreased* goals or eliminated an instructional objective.

### **Programs to Foster Teacher Adaptations**

**Routine programs.** In the late 1980s and throughout the 1990s, researchers—sometimes working closely with teachers—developed methods to facilitate routine group adaptations. Best known among these are versions of cooperative learning developed by Slavin and colleagues (e.g., Slavin, 1994), and Johnson and Johnson (1994). Reciprocal Teaching (e.g., Palincsar & Brown, 1984) is another peer-mediated, small-group approach to instruction and practice. Peer-Assisted Learning Strategies (PALS; e.g., D. Fuchs, Fuchs, Mathes, & Simmons, 1997) calls for students to work in pairs, rather than in small groups. When conducted with fidelity, these peer-mediated routine adaptations of classroom curricula and instruction improve the reading and math performance of many students (an example of researchers and practitioners successfully bridging the research-to-practice gap). Yet, none of these programs help all students. PALS is a case in point. Across several formal evaluations, there were always between 10% and 20% of PALS students who did not benefit from the program. One shouldn't be surprised by this. At-risk students, including those with disabilities, vary considerably in the nature and extent of their learning problems. For those with very significant learning problems, many routine adaptations (like PALS) lack sufficient customization and intensity.

**Specialized programs.** Specialized adaptations were developed for children who do not benefit from routine adaptations. Behavioral consultation (Bergan, 1970) is one such example. It calls for a structured data-based interaction between a consultant and teacher in search of classroom adaptations to help individual students complete their work with accuracy or to help them improve their classroom behavior. Scores of experimental studies have shown that, when used for these purposes, behavioral consultation exerts positive effects. However, there is paltry evidence that it helps well-behaved children with serious learning problems. Moreover, the effectiveness of behavioral consultation has been documented only when researchers, rather than school-based personnel, conducted the consultation process, raising the question whether educators' use of this specialized approach leads to similarly impressive outcomes.

Co-teaching, accommodating the curriculum, and universal design are additional popular specialized adaptations. They have been promoted by several professional organizations for more than a decade. Popularity notwithstanding, they have been evaluated infrequently or not at all or have been shown to have no desirable effect on academic performance (e.g., Boudah, Schumacher, & Deshler, 1997; Scruggs, Mastropieri, & McDuffie, 2007).

Our sense from reading the literature on specialized adaptations—and from speaking with teachers, administrators, and support staff over the years—is that most classrooms are not adaptive. Maybe more accurately, most aren't adaptive enough to accommodate the diversity of children requiring individualized attention. That said, as former classroom teachers we know how difficult it is to make adaptations. Adaptive teachers must constantly be thinking and managing many children and activities simultaneously. Jacob Kounin, the noted ecological psychologist, once famously remarked that such teachers had “with-it-ness,” or a combination of uncommon alertness, judgement, knowledge, and street smarts. But none of this distracts from

the fact that many teachers do not adapt their instruction in meaningful ways, which leads to a fundamental question, “How expandable or accommodating are most classrooms?” How realistic is it to expect that the classroom is the right full-time educational environment for all students and that the classroom teacher is always the most appropriate educator?

### **Responsiveness to Intervention as a “Systems” Approach to Adaptation**

#### **Tiers 1 and 2**

Responsiveness-to-Intervention (RTI; also referred to as Multi-Tiered System of Supports) was first promoted nationally in the early 2000s. There were many reasons to support RTI. One was the hope that it would help practitioners adapt their instruction, especially for struggling students. Whereas there is no single model of RTI, or broad consensus of what it should look like and how it should work (e.g., D. Fuchs, Fuchs, & Stecker, 2010; Jenkins & Schiller, 2012), multiple tiers of increasingly intensive instruction is its hallmark. Tier 1 is universally recognized as the general classroom. A typical expectation of the teacher in Tier 1 is that she capably implements appropriate curricula and also, perhaps, regularly conducts a class-wide evidence-based program like cooperative learning or PALS to supplement her reading or math instruction. Tier 2 is usually designed for children insufficiently responsive to Tier 1 instruction. An evidence-based protocol often directs Tier 2 instruction, which focuses on a relatively narrow knowledge or skills set. It is implemented by a teacher familiar with the protocol and capable of coordinating small homogeneous groups of students to ensure their engagement with lesson content. Tier 3 is reserved for the children who have not responded adequately to instruction in the previous tiers. Instruction at this level is individualized.

We think of these RTI tiers as “systemic” adaptations. As a child moves from Tier 1 to Tier 2, she is supposed to get more intensive instruction—delivered more often, for a greater duration,

in a different way from that in the classroom, by someone with special training to perform at Tier 2. There is considerable evidence that this Tier 2 instruction has benefited many at-risk students. Importantly, the intensity of instruction at this tier does not typically include teacher adaptations since it is largely determined by a validated protocol. In RTI frameworks, multiple building-based professionals at Tiers 1-3 are each responsible for implementing different forms of instruction of varying degrees of intensity to different children. Collectively, they and the tiers at which they work represent a school building's set of instructional adaptations. We elaborate below.

### **Two Assumptions about RTI**

One of two important assumptions we make is that, if the purpose of RTI is to prevent undesirable consequences of school failure (e.g., drop out, unemployment, poor health), it must reflect a comprehensive effort—as comprehensive (and complicated) as multilevel systems of effective health care, which Gawande (2011) has characterized as “full-spectrum” care. Gawande writes that the overarching goal of full-spectrum health care is to provide high-quality services at minimum cost. Where this occurs, it is achieved by reducing the need for intensive levels of prevention by offering effective primary care (e.g., regular screenings that may trigger early secondary prevention). Analogously, full-spectrum RTI frameworks must be capable of helping both the “garden-variety” low achiever, who requires the intermittent attention of a teacher capable of modifying curricula and learning tasks, as well as the child with more serious and chronic learning and behavior problems, the severity of which may require 1 to 2 hours per day of one-to-one remediation from an expert instructor.

Our second assumption: If practitioners adopt a comprehensive or full-spectrum framework of care, special and general educators (and others) must accept equally important,

but uniquely different, responsibilities. This is because RTI should be a highly articulated system: Many and varied activities must be implemented—activities that are interdependent and that call for different skills. We believe it is naïve to expect that generalists will be cross-trained to teach skillfully to an academically diverse class of 28 children (Tier 1); to implement with fidelity a validated protocol to three to six students, some with behavior problems, while collecting and reviewing data on their progress (Tier 2); and to use “data-based individualization” (see below) with the most difficult-to-teach children (Tier 3). In short, RTI should be conducted by many specialists (including the classroom teacher) who are simultaneously applying different skills with different children at different levels of the RTI-prevention framework. This is what we mean by a “systems” approach to adapting instruction.

### **Tier 3: Continuous Instructional Adaptations**

RTI practitioners must offer Tier 3 instruction to serve the most difficult-to-teach children and youth. Effective educators at this level will be instructional experts. They will be knowledgeable about curricula and instructional approaches across academic domains and will continuously and systematically monitor the progress of their students to understand whether and when their instruction is working. They will embrace the premise that, for many of their charges, effective treatments cannot be determined *a priori*. Rather, they are developed across time through trial-and-error informed by knowledge and experience. In other words, Tier 3, in contrast to the first two tiers, represents nearly constant instructional adaptation.

There are at least two reasons why special educators should be responsible for Tier 3 instruction. First, for more than a century, they have worked with most difficult-to-teach students, many of whom were first determined unfit or ill prepared for general education.



Second, during 25 years of funding by the Office of Special Education Programs (OSEP) in the U.S. Department of Education, scores of special education researchers, often in collaboration with teachers, developed and validated a “technology” of assessment and instruction for the most instructionally needy students. This research became the basis of a pedagogical approach known as “data-based instruction” (DBI), which has proved effective for children and youth with the most serious learning problems (cf. Deno & Mirkin, 1977; L. Fuchs, Deno, & Mirkin, 1984; L. Fuchs & Fuchs, 1986; Stecker, Fuchs, & Fuchs, 2005). For detailed descriptions of DBI, see D. Fuchs et al. (2010) and L. Fuchs and Fuchs (1998). Following is an outline of the process a teacher would follow when implementing DBI.

- The teacher begins with a validated off-the-shelf Tier 2 program. To find appropriate Tier-2 instructional programs, one may go to [www.intensiveintervention.org](http://www.intensiveintervention.org) and navigate to the Instructional Tools Chart. Finding a Tier-2 program on the Tools Chart does not mean that it has strong evidence of working well. One has to inspect the “bubbles” on the chart to determine the quality of the evidence associated with the program and look at its effect sizes to determine the size of its effects.
- To monitor a student’s response to this program, the teacher chooses a validated progress monitoring system. For examples, go to [www.intensiveintervention.org](http://www.intensiveintervention.org); navigate to the Progress Monitoring Tools Chart. As with the Instructional Tools Chart, representation in the Progress Monitoring Tools Chart does not mean the progress-monitoring system is valid. Again, one must carefully inspect the bubbles in the chart to know whether the tool meets technical criteria for a strong progress-monitoring system.
- As the teacher begins implementing the instructional program, she uses the progress monitoring tool to collect three initial scores, on three consecutive days (see Figure 2).

She uses the median (middle) score to characterize the student's initial level of performance (i.e., the baseline score, before DBI begins). She plots the baseline score on the date corresponding to the day before DBI begins and draws a dotted vertical line on the graph on this date to indicate the setting of baseline performance (see Figure 2).

- She then determines a goal (i.e., a desirable year-end score). Various methods exist for goal setting. For example, the teacher can use normative information, indicating how much progress is made by typically developing students at that grade level without intervention. (See the Progress Monitoring Tools Chart to determine which systems provide normative data.) The teacher can then multiply the baseline score by 1.5, a degree or amount of expected growth used in some randomized control studies. (Go to [www.intensiveintervention.org](http://www.intensiveintervention.org) and navigate to Summer Institutes: RTI for additional options and specific directions on goal setting.)
- The teacher plots the end-of-year goal on the graph at the date corresponding to the last instructional day of the school year. She then draws a straight line from the baseline score/date to the year-end goal/date. The resulting "goal line" represents the rate of progress the student must achieve to move from where she is to where she needs to be at year's end. It also indicates the score the student needs to achieve on any given date to be on target for achieving the year-end goal (see Figure 2).
- Then, the teacher implements the intensified instructional program and continues collecting progress monitoring data. She graphs one data point each week.
- When four consecutive scores fall above the goal line, the teacher increases the goal and redraws the goal line (Figure 2). When four consecutive scores fall below the goal line, the teacher modifies her instruction. That is, she revises a component of the program,

which she thinks may make the biggest difference in the child's performance. In either case, the teacher draws a vertical line on the student's graph. This line is dotted to signify a goal increase; it is drawn solidly to indicate a program revision.

- If eight data points have been collected since the last vertical line and four consecutive scores do not fall above or below the goal line, the teacher draws a line of best fit through the eight data points (for information on drawing a line of best fit, go to <http://www.rti4success.org/> and navigate to RTI Implementer Series Module 2: Progress Monitoring). If the line of best fit is steeper than the goal line, the teacher raises the goal for the child. If the line of best fit is flatter than the goal line, the teacher changes a program component.
- To determine a potentially productive adaptation to the instructional program, the teacher pursues one of the following strategies.
  - Inspect the progress-monitoring data to identify weaknesses in performance that may provide fruitful targets of instruction.
  - Administer an additional progress-monitoring probe and watch the student complete the test to search for information about strategies the student uses when making errors. For example, the teacher may conduct a miscue analysis as the student reads aloud or she may question the student about his thinking when completing a mathematics assessment.
  - Administer a diagnostic assessment to learn more about skill strengths and weaknesses.

- Think about the effects of previous program adaptations to identify the types of changes associated with strong and weak student response. Build on successful changes.
- Consider the student's performance during instruction to generate ideas about strategies for adapting the program. For example, motivation to work hard or attend carefully may be an issue, which can be addressed by introducing a behavior management system. Alternatively or additionally, the teacher may observe that the student produces correct responses, but her slow response interferes with comprehending text or attending to a complex sequence of steps involved in math problem solving. This may suggest building reading fluency or strengthening fluency in solving a multiple-step math task may be a productive program adaptation. See [www.intensiveintervention.org](http://www.intensiveintervention.org) and navigate to the Resources tab for other promising adaptations.

## Summary

Research on teacher adaptations is sobering. It appears that many do not often differentiate their instruction when students are struggling. A promising feature of RTI in this regard is its multiple tiers of increasingly intensive intervention. Collectively, they represent differentiated instruction at the building level. Instruction at Tiers 1 and 2 is deliberately and strategically different. Teachers at these two levels do not regularly modify their instruction. Tier 3 is a different matter. The Tier 3 instructor uses her experience and judgment to inductively design a program for each of her chronically non-responsive students. Her approach is inductive because she doesn't know which program components will prove important before beginning her work with them. Program development is informed by progress-monitoring data that quantify a

student's response to her instructional adaptations, and help her understand what's working and what's not. Research shows that with DBI teachers plan stronger programs and accelerate the academic growth of struggling students with and without disabilities.

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