

What Is Intensive Instruction and Why Is It Important?

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We begin with this little noticed but important and uncontested fact: Many students with disabilities are performing abysmally in America's schools. In the past decade, the Office of Special Education Programs in the U.S. Department of Education commissioned two nationally representative, longitudinal studies of the academic achievement of students with disabilities in elementary and high schools—the Special Education Elementary Longitudinal Study (SEELS) and the National Longitudinal Transition Study-2 (NLTS-2). In 2008, the SEELS data indicated that 64% of the elementary school children with learning disabilities (LD) were scoring below the 20th percentile on the Woodcock-Johnson Passage Comprehension Test (Schiller, Sanford, & Blackorby, 2008). High school students with LD, according to the NLTS-2 data, were on average 3.4 years behind grade level in reading; 3.2 years behind in math. One quarter of the students with LD dropped out of school and only 46% of students with LD had paid employment 2 years later (Wagner, Marder et al., 2003; Wagner, Newman et al., 2003).

Response to Intervention (RTI)

Tiers 1 and 2

RTI was designed to improve the academic performance of struggling students with and without disabilities

and to provide practitioners with a more valid means of disability identification. Toward these ends, RTI approaches require service delivery to be reorganized, or restructured, into multiple tiers of increasingly intensive instruction. The first tier (Tier 1) refers to the general instruction that all students receive in mainstream classrooms. This instruction should include providing virtually all students with the core instructional program, classroom routines meant to provide opportunity for instructional differentiation, and accommodations that in principle permit access to the primary prevention programs as well as problem-solving strategies for addressing students' motivation and behavior.

Whereas highly effective Tier 1 programs are designed using instructional principles *derived* from research, they are not typically *validated* by research. Tier 2 programs, by contrast, often involve small group instruction that relies on empirically validated instructional practices typically involving small group interventions. "Validation" means that experimental or quasiexperimental studies have demonstrated that the intervention programs are effective for the students for whom they were developed. Such instruction specifies procedures, duration of the instruction (typically 10 to 20 weeks of 20- to 45-minute sessions), and its frequency (three or

four times per week). The intervention programs are often led by an adult with special training. Assessment at Tier 2 determines whether students have responded adequately to the interventions. This assessment is usually based on progress monitoring, testing following tutoring, or a combination of the two. Schools are supposed to use these data to decide whether students should return to Tier 1 without additional Tier 2 support or whether more intensive intervention is necessary.

Students who do not benefit adequately from RTI's first two tiers of instruction...signal a need for even more intensive educational care.

Need for Intensive Intervention

Research shows that many struggling students in the primary grades respond successfully to Tier 1 and Tier 2 instruction (e.g., McMaster, Fuchs, Fuchs, & Compton, 2005; O'Connor, 2000; Vadasy, Sanders, Peyton, & Jenkins, 2002; Vaughn, Linan-Thompson, & Hickman, 2003). Yet these same researchers (as well as additional researchers) indicate that these interventions—even when implemented with fidelity—do not dramatically decrease the rate of

inadequate responders to reading and mathematics programs. Further, the success rate of older students (Grades 4 and older) participating in Tier 2 type interventions is less than that of primary-grade students (e.g., Gilbert et al., 2013; O'Connor & Fuchs, 2013; Vaughn et al., 2010; Wanzek et al., 2013). Before discussing what often happens to the nonresponders to RTI's prevention efforts, let's consider prevention in the context of health care.

Those who contribute to effective and efficient health care systems know the importance of minimizing the use of intensive (and expensive) levels of the prevention system. Efforts are made to ensure high-quality primary care, with regular screenings to facilitate early access to lower cost interventions as necessary. Despite the high regard given to primary care doctors and nurses, hospital administrators and policymakers appreciate that a most intensive level of the health care, including its high-cost

specialists and hospitals, is necessary to prevent the negative consequences of very serious medical conditions. That is, the existence of effective primary care does not negate the importance of and need for intensive care. A key challenge for health care systems is to move patients in and out of intensive services as quickly as possible while recognizing that long-term intensive treatment may be necessary for some. In short, successful health care prevention systems incorporate a full spectrum of services to address a broad array of health issues.

Returning to the students who do not benefit adequately from RTI's first two tiers of instruction, assuming this instruction was selected appropriately and implemented accurately for an adequate duration, these students' nonresponsiveness signals a need for even more intensive educational care. As practitioners, however, these students do *not* routinely get more

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intensive instruction, and that providing typical special education services does not ensure an appropriate education. If a student is unresponsive to Tiers 1 and 2, one of two things usually happens. In one scenario, the student lingers indefinitely at Tier 2, participating in instruction of similar inadequate intensity despite continued poor performance. Special education is not considered.

In a second scenario, the student is identified as "special needs" and is given a form of special education that is meant to provide instruction in the general classroom where accommodations to curricula and co-teaching are to be provided. In fact, according to Wagner, Marder et al. (2003) and Wagner, Newman et al. (2003), most students with LD receive *no* substantial modifications to general education curriculum or instruction. So, in this scenario, children with LD (and children with other disabilities), who have shown a poor initial response to general education instruction followed by an inadequate response at Tier 2, are returned to general education without any form of intensive interventions. We cannot help but observe that the popularity of this approach to special education suggests many schools have given up on teaching its most academically vulnerable students with much-needed intensive interventions.

Contributing to this unacceptable situation for students who are struggling is the unfounded and naïve belief that virtually *all* children and youth with disabilities, including those with very serious learning problems, are helped sufficiently by the core curriculum with co-teaching, modifications to the core instructional program, or other such supports. Our impression is that more



than a few college and university faculty responsible for the preparation of special educators share this view. That is, they assume that teaching preservice professionals to work alongside a general educator in a class of 25-35 students will provide sufficient academic support to all struggling students with and without a disability label. We observe too few preservice special educators with appropriate course work in reading, math, writing instruction and assessment that includes progress monitoring. Too few would-be special educators work for extended periods with students whose very significant learning problems challenge their knowledge of instruction and curricula while they are under the guidance of experts in instruction, curricula, and data collection and analysis.

Regardless of the validity of these impressions, we know from our own work in schools that few educators know how to develop and deliver intensive intervention distinctive from Tier 2 small group tutoring. Many schools do not have the know-how to provide specialized intensive intervention and, therefore, cannot offer “full-spectrum” instruction to all its students. For these very important reasons, the Office of Special Education Programs created the National Center on Intensive Intervention (NCII, www.ncii.org). The NCII’s goals are to provide schools with a research-backed vision of what intensive intervention looks like for students with severe learning needs, and with the assistance to build capacity to provide such intervention so all students will achieve acceptable postschool outcomes. In the remainder of this article, we present two models of intensive instruction and some of the evidentiary base supporting them.

Two Models of Intensive Instruction

Model 1: Intensified Tier 2 Instruction

When students are not sufficiently responsive to research-validated Tier 2 tutoring programs, what can teachers

do to intensify instruction to make it beneficial? A first question may be this: Is this student progressing, but progressing too slowly? If so, additional instructional time may be an appropriate intensification for the student. With additional time, teachers may plan for a greater amount of practice with feedback to solidify and expand proficiency on foundation skills, offer more explicit systematic (step-by-step) instruction, focus on teaching new skills and strategies, and use student performance as feedback for adjusting instruction. There are at least two strategies for intensifying instruction and accelerating the learning of students progressing too slowly.

Data-based individualization (DBI) is an empirically proven method for individually tailoring instruction for students with significant learning problems.

Is the size of the group suitable for specialized instruction and practice with feedback, considering the expertise of the teacher and the severity of the students’ learning problems?

Researchers who focus on group size (e.g., Elbaum, Vaughn, Hughes, & Moody, 1999, 2000) suggest what teachers have known all along—smaller groups allow teachers to provide more specialized instruction. How small? The answer depends on the age of the students and the content they are learning. Generally, small groups and one-on-one instruction are associated with better outcomes for students with learning problems than larger groups (Wanzek & Vaughn, 2007, 2008).

Important to the decision about group size are two issues: Who is providing the instruction and how serious is the learning problem? Teachers who are knowledgeable about working with students with serious learning difficulties (e.g., special education teachers) may be able to

provide appropriate instruction in small groups, whereas less experienced teachers may need to provide one-on-one instruction with supervision. Also, students with serious learning problems are likely to require the inherent advantages of smaller group size.

Is the duration of the instruction adequate?

Duration of instruction refers to the amount of time each day the instruction is provided (e.g., 20 minutes, 30 minutes, or 50 minutes), the frequency with which instructional sessions are delivered (e.g., 3 times per week or daily), and the number of weeks the intervention lasts (e.g., 12 weeks or 20 weeks). So strategies for increasing the duration of intervention are to increase (a) the amount of time for each session, (b) the number of times per week the sessions are scheduled, and/or (c) the number of weeks the intervention lasts. Student responses to each of these adjustments should be quantified by collecting progress-monitoring data. These data will help teachers interpret the effectiveness of such adjustments, which we discuss in Model 2.

Decreasing group size, increasing intervention time, and engaging well-prepared (knowledgeable and experienced) personnel to provide interventions are expensive. However, the cost of *not* providing intensive interventions (i.e., students exiting schools without the necessary skills to succeed) is more expensive. And note that not all students require very small groups or one-on-one instruction. If students are succeeding in larger groups (6-8 students), there is little need to change group size. Yet when their progress is inadequate, teachers are advised to adjust the program by relying on smaller groups, increasing time for intervention, and involving highly trained personnel to deliver interventions.

Model 2: Data-Based Individualization (DBI)

For some students, the intensity of instruction described in Model 1—increasing instructional opportunities

and practice but staying with an off-the-shelf, validated Tier 2 program—is insufficient. These students require individualized instruction. By “individualized,” we mean one-to-one instruction designed to meet a student’s learning needs. DBI is an empirically proven method for individually tailoring instruction for students with significant learning problems. For detailed descriptions of DBI, see D. Fuchs, Fuchs, and Stecker (2010), L. S. Fuchs and Fuchs (1998), and Stecker (2005). For discussion of randomized control studies of DBI, see Stecker, Fuchs, and Fuchs (2005). The following is an outline of the process a teacher would likely follow when implementing DBI. It starts where Model 1 left off.

Research on the efficacy of DBI shows that it helps teachers plan stronger, more strategic programs and accelerate the academic growth of struggling students with and without disabilities.

- The teacher begins with a validated off-the-shelf program (i.e., the instructional platform) that has been intensified by increasing instructional opportunities and practice, as described in Model 1. To find appropriate Tier 2 instructional programs, she goes to www.intensiveintervention.org and navigates 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 her student’s response to an intensified instructional program, the teacher selects a validated form of ongoing progress monitoring (for examples, go to 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 measure 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 intensified instructional program, she uses the progress-monitoring measure to collect three initial scores on 3 consecutive days. 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 one day before DBI begins and draws a dotted vertical line on the graph on this date to indicate the setting of baseline performance.
- She then determines a goal (i.e., the expected 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 and navigate to “Summer Institutes: RTI” for additional options and specific directions on goal setting.)
- The teacher plots the goal on the graph on 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. This “goal line” is the student’s “moving target.” It represents the score the student needs to achieve on any given date to be on target for achieving the year-end goal.
- Then, the teacher implements the intensified instructional program and continues collecting progress-monitoring data. She collects and 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. When four consecutive scores fall below the goal line, the teacher revises a component of the intensified instructional program. In either case, the teacher draws a vertical line on the student’s graph to indicate a goal change (in which case, the vertical line is dotted to signify a goal increase) or to indicate a program revision (in which case, the vertical line is solid).
- 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 increases the goal. If the line of best fit is less steep than the goal line, the teacher revises a component of the instructional program.
- To determine the effectiveness of a revision to the instructional program, the teacher pursues one or more of the following strategies:
 - Inspects the progress-monitoring data already collected to identify weaknesses that may provide appropriate targets of additional instruction.
 - Administers an additional progress-monitoring probe and observe the student completing the test to search for information about strategies the student uses when making key 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.

- Administers a diagnostic assessment to gather information about skill strengths and weaknesses.
- Thinks about the effects of previous program modifications to identify the types of changes associated with strong and weak student response.
- Considers the student's performance during intervention sessions to generate ideas about potentially productive strategies for revising the program. For example, motivation to work hard or attend carefully may be an issue, which can be addressed by introducing or changing the behavior management system. Alternatively or additionally, the teacher may observe that the student produces many correct responses, but the laboriousness of the responses detracts from comprehending reading material or focusing on a complex sequence of steps involved in math problem solving. This would suggest that fluency building on reading word types or on component steps of a math task may represent a productive program revision. Go to www.intensiveintervention.org and navigate to the Resources tab for other potentially productive program revisions, depending on the nature of the student's problem.

This DBI process continues throughout the school year. The teacher uses her clinical experience and judgment to design an intensive intervention program over time for the student. In other words, she follows a process of program building we call "informed trial and error." One doesn't know what program components will accelerate growth before beginning to work with the student who has been chronically unresponsive to prior instructional tiers. Program development is informed by progress-monitoring data that quantify the student's response to the instructional changes and help the teacher

understand what works for a specific student. Research on the efficacy of DBI shows that it helps teachers plan stronger, more strategic programs and accelerate the academic growth of struggling students with and without disabilities.

Final Thoughts

Although we have tried to be emphatic in stating the need for intensive instruction and DBI, we have been deliberately vague about who should provide it. With appropriate training, reading and math specialists could, speech/language clinicians might, and some number of school psychologists no doubt would have interest. Our preference would be special educators, partly because special education's historical *raison d'être* has been to help the students most difficult to teach. Regardless of whether it is provided by special educators or professionals from an allied field who make intensive instruction their responsibility, the clinician-teachers who conduct intensive interventions effectively will be a very special group. Ellen Ulman (2013), a former software engineer, recently wrote about what it takes to become a successful computer programmer. She said:

The first requirement for programming is a passion for the work, a deep need to probe the mysterious space between human thoughts and what a machine can understand; between human desires and how machines might satisfy them. The second requirement is a high tolerance for failure. Programming is the art of algorithm design and the craft of debugging errant code. In the words of the great John Backus, inventor of the Fortran programming language: "You need the willingness to fail all the time. You have to generate many ideas and then you have to work very hard only to discover that they don't work. And you keep doing that over and over until you find one that does work. (p. 5)

This statement describes precisely what's in store for those with sufficient

ambition, passion, knowledge, creativity, and stubbornness who aspire to meaningfully improve outcomes for our most academically vulnerable students.

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