

the causes of their academic failures and successes (“attribution” is the term most often used in the field of special education, though it has been described as “academic mindset” in discussions of deeper learning). Students who struggle with cognitive processing often attribute their lack of academic success to stable, internal causes that they cannot change, while they attribute success to unpredictable factors, such as luck. However, when provided with instruction designed to improve their self-regulation (e.g., when taught to use self-talk while reading academic texts, or to paraphrase complex ideas, or to use rereading as a way to “repair” their own misunderstandings), these students often come to recognize that their concrete actions can, in fact, have positive effects on their learning and performance (Berkeley et al. 2011; Borkowski et al. 1988; Carr & Borkowski 1989; Chan 1996; Miranda et al. 1997).

Intensifying Instruction

Regular classroom teachers, in addition to using instructional practices that support cognitive processing and helping students with disabilities access core academic content, should be prepared to provide more intensive support to students who need it.

This is not to suggest that all teachers should become experts in special education, or that they should devote a large portion of their time to helping just a small number of their students. But it is to argue that for some students, the strategies described above may not be enough, and they will require additional kinds of support.

EXPLICIT, SYSTEMATIC, AND RESPONSIVE INSTRUCTION

As described above, in the section on content-area instruction, a relatively low-cost way to intensify instruction

is for educators to adopt a strongly teacher-centered approach at times, combining direct instruction with efforts to coach students in the use of research-based learning strategies. For many students with learning disabilities, significant gains have been associated with teaching that is explicit, systematic, and gives them ample opportunities to practice and receive targeted feedback on their skills (Swanson et al. 1999).

Explicit instruction refers to the overt teaching of the steps or processes necessary to accomplish a task or learn a given skill (Fuchs et al. 2003), and it often involves teacher modeling and demonstrations that illustrate precisely what students are expected to do. While this sort of highly directive approach may not be effective, or even appropriate, for all learners, research strongly suggests that for many students who struggle to plan, organize, and monitor their own learning, it often leads to improved mastery of both foundation skills and higher-level concepts (Baker et al. 2002; Biancarosa & Snow 2004; Gersten et al. 2009; Swanson 2000; Vaughn et al. 2000).

Systematic instruction refers to how effective teachers organize instruction into manageable pieces of learning and how they integrate these pieces into an overall learning goal. (For example, a teacher might break down a complex math problem into a number of smaller steps or processes and then bring them back together to solve the whole.) Further, it refers to teachers’ efforts to introduce progressively more challenging tasks over time, to give students the scaffolding they need to complete those tasks successfully, and then to pull away that support gradually, as students become more accomplished and independent.

Also, in addition to providing explicit and systematic instruction, teachers can intensify the support they provide by giving students frequent opportunities to practice new skills and receive feedback on what they can do to improve. (For example, this could mean asking some students to



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get started on a class project early and to schedule a few brief check-ins in advance of the official due date to go over their work and suggest revisions.) According to an exhaustive review and synthesis of research in this area, teachers' feedback tends to have a significant influence on student outcomes, particularly when it is timely, relates clearly to students' goals, provides specific information as to how they can complete tasks more effectively, and allows teachers to monitor their progress closely (Hattie & Timperley 2007; Vaughn et al. 2000).

Finally, teachers should keep in mind that these students may already be discouraged—given that they were not helped by earlier, less-intensive kinds of support—and a fresh dose of discouragement could make it even harder for them to benefit from a new approach. Thus, teachers should consider modifying their classroom tasks and assignments in ways that will allow these students to experience some success. For example, they can make it a priority to give extremely clear instructions for each assignment, provide examples of the kind of work that will count as high quality, and provide graphics or other concrete illustrations of the concept to be learned.

TIME AND CLASS SIZE

The teaching practices described above do not necessarily require major new outlays of time or money. However, it would be misleading to suggest that there are no costs associated with providing more intensive supports to students with disabilities. Time, in particular, tends to be a precious commodity in schools, and choosing to spend

more of it with particular students often means spending less on others.

Whatever local educators decide, they should keep in mind that scheduling decisions tend to be particularly important to students with disabilities. Increasing instructional time has been shown to be one of the most effective ways to help such students learn advanced content and skills (Torgesen 2000), giving them a chance to master cognitively complex tasks—such as reading high-level material and connecting ideas across texts—that they simply could not process over the course of a 45-minute lesson.

Intensifying instruction in this way could mean providing a given intervention every day, or even twice a day, say, morning and afternoon, rather than three times a week, for example (Wanzek & Vaughn 2008). Or, depending on students' capacities for attention, it could mean providing them instruction in longer stretches, or increasing the duration of the intervention (e.g., from fifteen weeks to thirty weeks). To be sure, that extra time does have to come from somewhere—never an easy decision—but for this student population, it does tend to be time well spent.

More expensive but equally important to consider is the option of reducing teacher-student ratios. Small group size can be a powerful factor in improving outcomes for students with disabilities (Elbaum et al. 1999), since it gives teachers far more leeway to provide the kinds of responsive instruction—including frequent opportunities for practice and feedback—that research shows to be effective for students who require intensive support.



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Differentiating When Appropriate: Data-Based Individualization

As we noted above, it would be impractical for general education teachers to provide truly differentiated instruction to every student. However, at some times, and for some students with disabilities, such instruction is absolutely critical.

Over forty years of research suggests that if students have several and persistent learning needs, and if they show little or no improvement despite teachers' efforts to intensify instruction, they can probably benefit from what is referred to as clinical or experimental teaching, or "data-based individualization" (DBI), a term that highlights the role that systematic assessment plays in the process (NCII, 2013b; Deno & Mirkin, 1977; Fuchs et al., 1984).

DBI is typically implemented within a multi-tiered system of support (such as Response to Intervention), which is to say that schools tend to offer it only after they have tried to help the given student in other ways. If regular core instruction (known as Tier 1) was not successful, and if the student did not benefit from a secondary (Tier 2) intervention—assuming it was a proven approach, implemented with fidelity—then the DBI process kicks in.

First, the teacher tries increasing the intensity of the instruction (e.g., spending more time with the student). Next, the teacher monitors the student's progress to determine whether intensifying the instruction had an impact. Third, the school uses diagnostic assessments to identify the student's specific skill deficits and develop a hypothesis about effective ways to modify instruction. Fourth, the teacher implements an adapted program (which may include some of the teaching strategies described in the preceding sections). And finally, the teacher continues to monitor and collect data on the student's progress, to see whether the approach is working or should be modified further.

This careful integration of assessment and intervention can meet the needs of individual students that have not been helped by the kinds of supports described earlier. But how expensive is it to provide such services? Typically, schools train and rely upon their regular classroom teachers to provide effective Tier 2 interventions, monitor student progress, and, when students continue to struggle, perform diagnostic assessments to pinpoint their needs. In turn, when the DBI process reveals a need for more intensive interventions, students usually are referred to special education teachers, reading specialists, and other specialized staff and/or instructional aids. In short, DBI can be quite labor intensive, and most schools would be hard-pressed to offer it to more than a very small percentage of their students at a time. As is true of other means of intensifying instruction, however, research suggests that when implemented well, it is associated with improved outcomes for students.

Assistive Technologies for Students with Disabilities

The scope of this paper does not include discussion of new technology-based approaches to special education. It is important to acknowledge, though, that such technologies—from cochlear implants to text-to-speech software to large-print word processors—have been enormously beneficial already, and there is great optimism in the field about the development of new resources for students with disabilities.

For background on the research in this area, emerging tools, and principles of effective technology-based instruction, a great place to begin is: www.cast.org.

And for a related discussion of how practices developed for students with disabilities in fact benefit all learners and can be enhanced by technology, please see Students at the Center's 2102 report: [Curricular Opportunities in the Digital Age](#).

CONSIDERATIONS FOR INTEGRATING DEEPER LEARNING

The practices described above have been shown to promote effective instruction for students with significant learning problems and disabilities in general education classrooms. When practiced thoughtfully and consistently, they can help these students to gain access to deeper learning. They can also be expensive—such as when schools choose to reduce class sizes or offer additional, specialized services—but in many cases they are not, requiring only that classroom teachers learn how and when to implement a number of specific, proven instructional practices.

With these considerations in mind, we offer a number of overarching recommendations for local educators and policymakers at the local and state levels:

- Make it known to educational leaders, teachers, parents, and other community members that empirical research strongly suggests that students with disabilities and other struggling learners can—when given appropriate instructional strategies and tiered levels of instructional and behavioral support—succeed in learning deeply and meeting rigorous achievement standards.
- Make sure that *all* students—including those with disabilities—have access to high-quality instruction in the core content areas.
- Make sure that general education teachers' professional standards, licensure requirements, and job descriptions assign them clear responsibility to provide effective instruction to students with disabilities.
- Ensure that teachers' pre- and in-service programs equip them to provide the kinds of intensive, evidence-based interventions that can help students with disabilities to access deeper learning.
- Ensure that state policies require schools to provide tiered levels of instructional and behavioral supports.
- Ensure that state policies create incentives for all teachers to share responsibility for providing effective instruction and supports to students with disabilities.
- Ensure that state and local educator evaluation systems reward—or at least do not penalize—teachers who use appropriate, evidence-based instructional strategies when working with students who have disabilities.
- Ensure that states implement college and career readiness assessments that address the full range of deeper learning competencies and include accommodations that enable students with disabilities to show what they know and can do.

We are confident that if states and districts integrate these recommendations with the practices described above, all students will benefit as a result. Deeper learning can and should be the goal for every young person.



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