DON'T "DYS" OUR KIDS

DYSLEXIA AND THE QUEST FOR GRADE-LEVEL READING PROFICIENCY

by Leila Fiester

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ABOUT THE AUTHOR

Leila Fiester is an independent writer, researcher, and editor who specializes in issues, initiatives, and policies that affect children, families, communities, and service systems and in efforts to improve philanthropic practices. She helps national foundations and organizations plan, assess, and describe their strategies; analyze practices and outcomes; distill lessons and implications; and share their stories.

From 1999–2011, Leila wrote extensively about the Annie E. Casey Foundation's *Making Connections* initiative, and in 2010 she wrote the KIDS COUNT special report that launched the Campaign for Grade-Level Reading, *Early Warning! Why Reading by the End of Third Grade Matters.* She has written case studies, analytical reviews, lessons learned documents, and other products for numerous private foundations, research institutes, and policy organizations and edited three volumes of research and essays published by the Aspen Institute Roundtable on Community Change.

Before becoming a consultant, Leila was a senior associate of Policy Studies Associates in Washington, DC, which conducts education research and evaluation, and a reporter for *The Washington Post*. She holds a B.A. in Anthropology from Macalester College and an M.A. in Journalism from the University of Maryland.

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About 2.4 million children and youth in the United States have been diagnosed with learning disabilities (LD). Unfortunately, many fail repeatedly in school before their needs are diagnosed and addressed. They feel stigmatized by their differences, and they don't experience the academic environments, technologies, and instruction that would help them become proficient readers.

Reading proficiency is the core message of the Campaign for Grade-Level Reading, a national movement to have more children read at grade level by the end of third grade—especially children from low-income families, who face the largest achievement gap. And it's as important for children with LD as it is for any child. As we raise the bar for reading achievement, we can't ethically leave some children behind; and with at least 5 percent of *all* students having dyslexia or other specific learning disabilities, the population is so large that we cannot overcome the achievement gap without them. This paper examines the connections between teaching children with dyslexia to read and improving reading proficiency among all children.

★ **e**very brain is different, so teaching must be individualized to each learner to find the strategies that drive each person's brain most effectively.

overview of research & policy

New research on how the brain develops, acquires language, and processes information shapes the current context for helping children with LD learn to read. For instance, we now know that different regions of the brain have specialized functions, and several help in the process of acquiring language and reading skills. During the learning process, the brain creates an interconnected circuit, or neural network. Because there is no single brain center devoted to reading, it takes communication among multiple centers for reading to occur. Important brain development occurs early in a child's life, and so does the development of language, which underpins the ability to read and write. The brains of dyslexics are structured differently from the brains of non-dyslexics, and they operate differently when reading. And brain functions can change in response to instruction.

These findings suggest that, among other things: (a) dyslexia is a neurobiological condition rather than the result of poverty, culture, or developmental delays; (b) an educational approach that activates multiple areas of the brain and gets them to communicate with each other has the best chance of succeeding; (c) it is important to identify and address learning differences as early in a child's life as possible, while key brain development and skills are at a critical stage; and (d) teaching must be individualized to each learner to find the strategies that drive each person's brain most effectively.

New knowledge about the reading process also plays a role. The National Reading Panel (2000) recognized five essential skills or areas of knowledge that drive the process (phonemic awareness, phonics, fluency, comprehension, and vocabulary), and the National Early Literacy Panel (2008) identified 11 early literacy skills that consistently predict later literacy for preschoolers and kindergartners. The panels' findings suggested that reading is a complex process that requires a combination of skills, and curricula and instruction should address all of the key components and skills.

Policies that affect how learning disabilities are defined, how and when children with LD are identified, and how they are educated have evolved. Between 1973 and 2008, key federal acts have: provided accommodations for students with special needs; guaranteed a free, appropriate public education for children with disabilities in the least restrictive environment; made learning disabilities eligible for federally funded services; given parents the right to sue in court if their children do not receive the guaranteed education; required schools to create an individualized program for each eligible student and pay for the services; included children with disabilities in general education to the greatest extent possible; established testing accommodations for students with disabilities; mandated that students with disabilities participate in state tests, and required states to implement alternate

DYSLEXIA IS A NEUROBIOLOGICAL CONDITION RATHER THAN THE RESULT OF POVERTY, CULTURE, OR DEVELOPMENTAL DELAYS

assessments aligned with academic standards; required states to report the number and performance of children with disabilities taking regular and alternate assessments, and to compare their performance with that of non-disabled students; required districts to monitor the racial and ethnic breakdown of students in special education; made schools accountable for all students' progress; required schools to have highly qualified teachers for students with disabilities; specified that states must provide educational materials in alternate formats to people with print disabilities; prevented states from mandating use of the IQ discrepancy formula to identify children with learning disabilities, and made Responsiveness to Intervention (RTI) an allowable alternate method; required states to track how many children from racial/ethnic minority groups are placed in special education and to provide early intervention programs for children in overrepresented groups; defined "disability" to include learning disabilities; and defined Universal Design for Learning (a framework for designing curricula and learning environments that work well for students with LD) as a scientifically valid basis for educational practice.

issues and innovations

For the majority of children with learning disabilities who attend public schools, success in reading is shaped by how and when the school formally diagnoses their learning differences ("identification"); what kinds of materials, content, and learning environments are available to them; how they are tested ("assessment"); what sort of technology is available to them; and what role their families play in their education.

IDENTIFICATION

The formal identification of a learning disability is important because it leads to the creation of an Individualized Education Program (IEP) and referral to special education services. The traditional method is based on measuring discrepancy between the student's ability and achievement—most often, the gap between the student's IQ and his or her performance on standardized tests. However,

IQ scores may be suppressed by the student's reading disabilities, and it is difficult to distinguish between students with LD who exhibit a discrepancy and struggling readers who do not have a discrepancy.

An alternate approach is Response to Intervention (RTI), sometimes called a multi-tiered system of supports (or MTSS), which focuses on whether the student's performance changes in response to a high-quality intervention. It also usually takes into account the student's level of achievement and his or her rate of progress in comparison to peers. RTI involves moving students through a series of tiers or levels of increasingly intensive, targeted instruction, diagnosis, and support. A version of RTI has also been developed for preschool children, in an effort to help children in the age gap between the earliest years and grades K-3. Early RTI identifies three- and four-year-olds who have precursors of specific learning disabilities related to language and literacy and provides less-formalized interventions that are more appropriate for early learners and preK classrooms.

RTI has advantages over the IQ-discrepancy model when implemented well. It doesn't require students to fail repeatedly before connecting them with help. It catches children who are struggling but not failing enough to be referred to special education. It teaches instructors to calibrate practices to each student's needs. It potentially reduces the over-identification of children with LD, because for some students the early interventions are sufficient to make referrals to special education unnecessary. And, because all children are screened, RTI brings general and special education together to improve instructional practices for all children while giving those who need it extra intervention. An estimated 60 percent to 70 percent of school districts across the country are in the process of implementing RTI, and several states have mandated its use. However, the growth in RTI has also fueled criticism. The main objection is not to the approach but to its low-quality implementation in some places.

CURRICULUM, INSTRUCTION, AND LEARNING ENVIRONMENT

The "reading wars" of the 1980s and 1990s polarized educators over the best way to teach reading, whether to all children or to struggling readers. Some educators championed whole-language instruction, which held that children immersed in a language-rich environment would naturally learn to read without much structured guidance. Others supported the phonics method, in which children learn the structure of language. The National Reading Panel tried to bridge the divide by calling for a balanced approach. Many people in the LD world, meanwhile, concluded that phonics

instruction is vitally important but is not the *only* appropriate form of instruction. The question then becomes, what other types of instruction are important, how should they be delivered, and what curricula best support them?

The most effective forms of instruction and curricula for teaching children with LD to read are:

- Grounded in a theoretical framework for how reading skills are acquired, based on neuroscientific findings and evidence from effective education programs;
- Standards-based, preferably holding LD students to the same curricula and tests as other students;
- Comprehensive, addressing all five components of the reading process;
- Language-based, explicitly instructing students in the structure of language;
- Code-based, helping students learn to break the "code" behind reading through phonemic awareness, phonics, and fluency rather than by relying on guessing or memorization;
- Intensive, giving students extra practice through daily reviews, guided and independent practice, tutoring, and targeted small-group instruction;
- Multi-modal and multi-sensory, providing many pathways for gaining skills;
- A combination of direct instruction and instruction in strategies for reading;
- Diagnostic, with teachers using frequent assessments to gauge students' level of mastery;
- Personalized, with a separate learning profile for each student;
- Sequenced and segmented, with the teacher breaking down skills into components and providing step-by-step instructions;
- Scaffolded, with the teacher gradually reducing assistance as students become more proficient;
- Explicitly organized, with teachers clearly stating the objective at the beginning, having students review material before instruction, and directing students to specific information;
- Asset-oriented, so that teachers focus on the student's innate strengths rather than deficits; and
- Varied enough to meet each child wherever he or she stands on the continuum of reading abilities.

These key elements of strategies for teaching children with LD to read are not a mystery; they are known to be good for any emergent reader. The difference is that they are *essential* for children with LD—and sometimes in higher doses and greater intensity than for other students.

A promising conceptual approach for designing curricula, materials, and learning environments that work for children with LD is Universal Design for Learning (UDL). UDL is a set of principles for ensuring that learners have multiple means of engagement, multiple means of representing information, and multiple means of action and expression. UDL's principles have found traction nationally, and its premise that all barriers to learning should be absent from the get-go—rather than relying on accommodations to level the playing field—provides a framework for changing the learning environment in very fundamental and positive ways.

ASSESSMENT

Over the past two decades, the rate of students with disabilities who participate in assessments has increased dramatically in most states, from 10 percent or fewer students to more than 95 percent (and as much as 99 percent at the elementary school level). This is due in part to legislative changes that (a) gave students with disabilities the legal right to participate in and benefit from any state assessment and accountability system and (b) established that students with LD may be entitled to extra testing time or modified testing in certain circumstances. Another battle continues, however, over whether students with LD should take the same general education courses and standardized tests as other students or take alternate assessments based on different achievement standards. The controversy is fueled by the high-stakes environment created by ESEA 2001 (No Child Left Behind), which penalizes schools where subgroups of students (including those with disabilities) do not make adequate yearly progress as measured by test scores.

The LD field has not reached consensus on best practices for assessment and accommodations for students with LD. Some organizations believe that students with LD should be exempted from the standard assessments, while others believe that most LD students can and should take the same courses and tests that other students take, achieve to the same standards, and obtain regular high school diplomas at the same rate as their non-LD peers. Underlying these concerns is the fact that state standards for reading proficiency are low in general, and state-level tests therefore fail to identify many non-proficient readers, with or without LD.

TECHNOLOGY

Technology can influence the educational outcomes of children with LD by creating a barrier-free learning environment (as UDL does) and by enabling students to bypass or compensate for their disabilities (as assistive technology does). The technologies available today have potential to transform LD students' learning experiences. Yet only an estimated 25 percent to 35 percent of students with LD currently receive assistive technology in school. As schools and districts work to make technology and UDL more prevalent, experts recommend three strategies in particular: make technologies accessible to many types of learners (i.e., don't just replicate the print format in a technological one); use technology to uncover students' individual learning styles so interventions can be customized; and use technology to change practices in a profound way, creating better "on-ramps" for children struggling to read.

FAMILY ENGAGEMENT

Parents and other caregivers of children with LD vary tremendously in their response to the situation and their ability or inclination to take action—especially when the parents belong to socioeconomic or racial/ethnic groups that have experienced poor educational services, opportunities, and outcomes. And yet families of LD children must be proactive, knowledgeable advocates because the services required by law are so underfunded that without family involvement many children with LD will simply slip through the cracks. Successful practices for engaging parents include: helping parents understand what LD is and how it affects their children's education from an early stage—ideally, as early as preschool—since for most children parent involvement in education lessens over time; explaining LD in a culturally appropriate way, using terms that parents don't hear as derogatory or critical of their child's intellectual ability; reaching out to parents who may not otherwise be engaged in the school; and reaching parents through the information sources they know and trust.

barriers and solutions

What stands in the way of getting more good practices into place in low-income schools, districts, communities, and homes? Barriers include: multiple and sometimes competing constituencies in the LD field that do not always agree on strategies or priorities; misperceptions about the financial costs of intervention, including analyses that don't take into account the higher costs of remedial education later in life, the long-term social costs of failing to help LD children learn to read, or the impact on the nation's economic competitiveness; inadequate teacher training, including preservice programs and ongoing professional development that don't incorporate research on the brain and how it learns to read, explicit and systematic instructional practices, and diagnostic skills; and lack of data linking the receipt of special education to better outcomes.

Given these challenges, what will it take to get more of the best practices, reforms, and technologies to reach more children with LD, especially those from low-income families? Among other things, experts consulted for this project called for policies that break down the barriers between general and special education to focus on good teaching overall, support earlier identification of and intervention in learning disabilities so that more children enter school ready to learn, maintain a high level of school accountability for helping children with LD make academic progress, and increase and support the use of UDL principles and RTI approaches. They also called for:

- Better training, professional development, certification, tools, and support for teachers and school administrators to improve their understanding of how to teach reading to all students, including those with LD;
- Technology developments, including standards and incentives for online learning that integrate UDL and reflect multiple ways of learning;
- Research studies that link the use of UDL and the receipt of special education services to student outcomes and further clarify the factors that put children at risk for dyslexia, affect its development, and interfere with intervention efforts;
- Development of assessments that follow a UDL approach, which could help to drive similar changes in curricula;

AN EDUCATIONAL APPROACH THAT ACTIVATES MULTIPLE AREAS OF THE BRAIN AND GETS THEM TO COMMUNICATE WITH EACH OTHER HAS THE BEST CHANCE OF SUCCEEDING

- Efforts to mobilize parents as advocates, both for their own children and en masse as a powerful political constituency;
- Community-level literacy coalitions that represent and reflect the full spectrum of stakeholders in education for children with learning disabilities, including people and organizations involved in civil rights, disability rights, business, education reform, and poverty reduction efforts; and
- Greater public understanding that (a) the current system for educating children with LD is deficient and (b) learning disabilities are not learning impairments.

A full set of recommended actions and opportunities for progress can be found in the companion document to this report, *What Will It Take to Help More Children With Dyslexia Learn to Read Proficiently? Recommended Actions,* available at www.tremainefoundation.org/content/dys.

The Campaign

for Grade-Level Reading—a collaborative effort by foundations, nonprofit partners, states, and communities across the country to dramatically increase the percentage of children who can read proficiently—launched in 2010 with a report emphasizing the pivotal role that reading proficiency plays in determining outcomes for children, families, communities, and the nation. The report, *Early Warning! Why Reading by the End of Third Grade Matters,* cited these stark facts:[1]

- In 2007, nearly 6.2 million young people (16 percent of the 16–24 age group) were high school dropouts.[2] Every student who does not complete high school costs our society an estimated $260,000 in lost earnings, taxes, and productivity.[3]
- The median annual income of a high school dropout in 2007 was $23,000, compared with $48,000 for someone who obtained a bachelor's or higher degree[4]—a considerable difference for anyone trying to support a family and be economically self-sufficient.
- The education achievement gap leads to a productivity gap between the United States and other countries. McKinsey & Company estimates that if U.S. students had met the educational achievement levels of more-literate nations between 1983 and 1998, America's GDP in 2008 could have been $1.3 trillion to $2.3 trillion higher.[5]
- An estimated 75 percent of Americans aged 17 to 24 (26 million people) cannot join the U.S. military, most often because they dropped out of high school or cannot pass the Armed Forces Qualification Test (or are involved in crime or physically unfit).[6]
- In an increasingly global and technological economy, U.S. employers struggle to find enough educated, competent, and accountable workers.

"The low-income fourth-graders who cannot meet [the National Assessment of Educational Proficiency]'s proficient level in reading today are all too likely to become our nation's lowest-income, least-skilled, least-productive, and most costly citizens tomorrow. Simply put, without a dramatic reversal of the status quo, we are cementing educational failure and poverty into the next generation….

"The bottom line is that if we don't get dramatically more children on track as proficient readers, the U.S. will lose a growing and essential proportion of its human capital to poverty, and the price will be paid not only by individual children and families but by the entire country."

— Fiester, L. (2010). *Early Warning! Why Reading by the End of Third Grade Matters. A KIDS COUNT Special Report.* Baltimore: The Annie E. Casey Foundation, p.7.

DATA SNAPSHOT:
learning disabilities in the U.S.

- At least 4.7 million Americans have been identified with LD—almost 2 percent of the population age 6 and older.
- That includes 2.4 million children and youth with LD—about 5 percent of all public-school students.
- Given the variation in how LD is identified, however, the proportion of people with LD may be as high as 17 percent to 20 percent, depending on the sample used.
- Dyslexia affects approximately 80 percent (or more) of people with LD.
- Children living in poverty are more likely to have LD (4 percent) than are children in non-poor families (2.7 percent).

Source: Cortiella, C. (2011). "The State of Learning Disabilities." National Center for Learning Disabilities, www.LD.org

The Campaign has galvanized action around a particular subset of American children: those who live in low-income families, for whom the literacy rate is disproportionately low. That is an important population to raise to the level of national attention, and the one with the greatest potential to move the needle on an array of social outcomes. But in choosing this focus, the Campaign inadvertently passed over another important subgroup: children with dyslexia and other learning disabilities (LD). This paper attempts to remedy that oversight by examining the connections between teaching children with dyslexia to read and improving reading proficiency among all children.

But first, a word about language. There are pros and cons to using terms like "learning disability," "learning difference," and "dyslexia" when educating the public, and each has strengths and weaknesses when it comes to public policy. Different constituencies have strong preferences for one over the others. In an effort to reach the largest possible audience, this paper talks about "dyslexia" within the larger context of "specific learning disabilities"—in part because there is broad agreement on the characteristics associated with both of those terms. However, we also refer to "reading disabilities" to acknowledge that children who cannot *read* well may still be highly able *learners,* and we use the term "learning differences" when making comparisons between different populations of learners.

DON'T DISREGARD WHAT WE KNOW FROM BRAIN RESEARCH ABOUT HOW TO TEACH READING

An estimated 2.4 million children and youth in the United States are diagnosed with learning disabilities. In addition to experiencing anxiety and humiliation over their reading difficulties, most children with LD attend public schools that further disempower them and undermine their motivation to learn in several ways: by requiring that they fail repeatedly before finally identifying and addressing their learning needs; by labeling and stigmatizing them rather than understanding their differences and celebrating their strengths; by not providing the environment, technologies, and instruction, at sufficient intensity, that make it easier for these students to read and learn; and by not fostering a sense of community among students with LD or giving them a public voice, which further isolates each individual.

For parents and advocates of children with LD, this situation prompts the reaction articulated by an interviewee and reflected in the title of this report: "Don't *dis*regard what we know from brain research about how to teach reading. Don't *dis*miss teachers from teaching what we know will achieve effective results. Don't *dis*tance children from technology that offers learning to all. Don't *dis*appoint the future by not preparing all students for success. Don't *dis*respect our kids."

Unfortunately, for too many children with LD the current approach to education does exactly that. It diminishes outcomes for them as individuals and, consequently, for the nation's larger effort to increase high school graduation and college attendance rates and to build a healthy, educated workforce and a globally competitive economy. The population of people who drop out of school and/or experience drug or alcohol abuse, unemployment, or incarceration contains a disproportionate percentage of people who are both unable to read and have LD (see p. 15). The problem is especially acute for children from low-income families, who are less like to have someone advocating strenuously on their behalf and more likely to attend struggling schools where they are unlikely to receive appropriate diagnosis, intervention, and supports.

★ as we raise the bar for reading achievement, we can't leave some populations behind, either because they have learning differences, are poor, or both.

TRENDS IN EDUCATION
and outcomes for children with learning disabilities

The number of school-age children identified with LD declined by 19 percent between 2000–2010, after growing rapidly during the previous 25 years. Researchers attribute the decline to several possible factors, including better practices for identifying autism (instead of incorrectly grouping it with other specific learning disabilities), expanded early screening and school readiness efforts, improved reading instruction in general education, and better processes to identify and intervene with struggling readers. Some experts predict the decline will accelerate as children who were identified using old rubrics graduate from high school, but this may be offset by an increase in the number of LD cases identified if the next reauthorization of the Elementary and Secondary Education Act does not retain accountability measures that keep schools from moving struggling students into special education.

Most students with LD spend most of their school day in general education classrooms. In 2008, 62 percent of students with LD spent 80 percent or more of their class time in general education, although the proportion varied by state.

African-American children are referred to special education at higher rates than other children. A 2001 study by Harvard University's Civil Rights Project found that African-American students constitute 21 percent of the special education population with LD but only 15 percent of the overall student population.

Students with LD are retained in grade and involved in school disciplinary actions more often than their non-disabled peers (34 percent vs. 10 percent in 2004).

Students with LD drop out of school more frequently than their non-disabled peers. The high school dropout rate in 2010 for students with LD was 20 percent, compared with 8 percent for students overall. However, a decade earlier (when fewer types of alternate certificates were available) the dropout rate for students with LD was a whopping 39 percent.

The proportion of students with LD who graduate with a regular high school diploma (67 percent in 2010) has increased over the past decade but still is smaller than the proportion for the overall student population (76 percent). About 12 percent of students with LD receive some alternate certification of high school completion.

Fewer students with LD than non-disabled learners attend postsecondary schools; few of those who do (16 percent) earn undergraduate degrees.

The lower rate of advanced education takes a toll in the workplace: Slightly more than half of adults with LD (55 percent) are employed, compared with two-thirds (76 percent) of adults without LD, and more adults with LD are not in the labor force (39 percent, compared with 21 percent; 2005 data).

SOURCES: Cortiella, C. (2011). "The State of Learning Disabilities." National Center for Learning Disabilities, www.LD.org

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Reading proficiency is important for children with LD for all the reasons it's important for any child. But reading within the LD population is also important to the overall success of the Campaign. As momentum builds for a national movement to have more children read at grade level by the end of third grade—especially children from low-income families, who face the largest achievement gap—it's clear that we cannot ignore children who have learning disabilities, especially dyslexia. Not for ethical reasons: As we raise the bar for reading achievement, we can't leave some populations behind, either because they have learning differences, are poor, or both. Not for demographic reasons: With at least 5 percent (and potentially as many as 20 percent) of all students having dyslexia or other specific learning disabilities, there simply are so many that we cannot overcome the achievement gap or increase the high school graduation rate, nationally or locally, unless more children with learning disabilities can read at grade level.

Moreover, we know that one in six children who are not reading proficiently in third grade (16 percent) will not graduate from high school by age 19, a measure of school dropout.[7] Looked at another way, children with the lowest reading scores account for one-third (33 percent) of the overall student population but more than three-fifths (63 percent) of all children who do not graduate from high school.[8] Within the general population, children from low-income families who can't read at grade level already represent a disproportionately large portion of those dropouts: 26 percent, compared with 9 percent of non-poor children who can't read.[9] What happens when we combine failure to read, poverty, *and* learning disabilities? Since middle-class children with LD are most likely to attend schools where they receive extra services or to have family resources that supplement the schools', we can surmise that almost all of the low-income children with LD who aren't reading at grade level drop out.

We also can't ignore learning disabilities for pragmatic reasons: The practices and reforms that help children with dyslexia learn to read also work well for non-LD children. It is critically important to apply knowledge and innovations from the world of LD education more broadly so they reach *all* children, regardless of where they live and whether they qualify for special or general education services. As Ralph Smith, creator and managing director of the Campaign for Grade-Level Reading, observes, "If we can figure out how to help more kids with dyslexia learn to read, that knowledge will provide the backbone for getting it right for all kids in all schools. And if we can't succeed with this particular group of kids, it's unlikely we will succeed with all the others."

AS THE BRAIN MATURES IT BECOMES MORE SPECIALIZED AND THUS LESS ABLE TO ADAPT

Several developments make this an opportune time to address this issue. Thanks to recent neuroscience research, we know more than ever before about how the brain operates, how it learns, and what happens as it learns to read. Innovators have developed teaching practices, models, and tools based on that research, but they aren't yet reaching enough children. Current activities in the education reform realm offer a chance to build on this progress and to solve remaining problems; they include a focus on closing the achievement gaps between sub-populations; the push for more rigorous, shared reading standards across the states; an emphasis on evidence-based practice; and upcoming reauthorizations of the federal legislation affecting education for all children, for children from low-income families, and for children with disabilities. In addition, more states are beginning to address the needs of students with LD through the widespread adoption of practices like Response to Intervention (see pp. 33–35) and improvements to teacher training. And there is a movement among individual leaders and key nonprofit, research, and funding organizations to collaborate and organize around a more coherent, unified agenda for educating children with LD.

These developments parallel a growing awareness about learning disabilities within the general public. A 2010 GfK Roper survey of 2,400 parents, teachers, school administrators, and other adults, commissioned by the Emily Hall Tremaine Foundation, found that many people are familiar with learning disabilities, understand that children with LD are just as smart as (or smarter than) other children, and believe that—with appropriate instruction—children with LD can compensate for their disability.[10] However, the survey also found that serious misunderstandings about learning disabilities persist. Almost 80 percent of parents, educators, and school administrators incorrectly associate LD with mental retardation, 75 percent with autism, and 69 percent with attention deficit hyperactivity disorder. More than half of survey respondents (51 percent) believe that learning disabilities are the result of laziness, while 55 percent of parents and 43 percent of teachers believe LD is caused by a faulty home environment. Most teachers identify lack of parental support as a major barrier to teaching children with LD, while many parents believe their children will simply grow out of the LD and therefore wait to diagnose and treat the issue until it has become a significant, and less easily treatable, problem.[11]

With those factors in mind, four themes infuse this paper. First, our starting point is a belief that one must consider the whole child—including his or her unique learning abilities as well as learning challenges—and view the child's learning process developmentally, always taking into account what experiences and exposure he or she has already had and what supports he/she will need to use his/her abilities to advance to the next level. Therefore, the way in which we teach reading must be customizable to students all along the spectrum of what the Center for Applied Special Technology (CAST) calls "learner variability."

Second, we believe that knowledge about learning disabilities (and about how to address them) is an essential ingredient in the "recipe" for helping more children learn to read proficiently. It's not the only one, but it's a pivotal element.

Third, as Tremaine President Stewart Hudson says, "We need to adjust the start rather than remediate the finish." That is, we need to do a better and earlier job of *identifying* kids with learning disabilities (and those at risk of struggling to read) and *intervening* in ways that work rather than relying on late-stage interventions that are costlier in human and financial terms.

Fourth, the systems, environments, and individuals with which children interact must be up to the task of helping kids with LD learn to read—that is, accessible; supported by necessary training, tools, and leadership; driven by high expectations for every child's achievement; and committed to holding all parties accountable for success.

This paper examines issues and best practices involved in helping dyslexic children learn to read and suggests what we might do differently so that those practices reach more children. Chapter 2 provides an overview of recent research on how the brain develops, processes language, and learns to read that has influenced current theories and approaches for teaching children with learning disabilities. It also highlights major policy and legislative developments that have shaped how LD is defined and, consequently, how, when, and to whom educational interventions are delivered.

Chapter 3 explores issues and innovations related to five key topics:

- The process of identifying children as having learning disabilities;
- The curriculum, instruction, and learning environment used to teach children with LD to read;

- Assessment of students with LD;
- Technology that helps children with LD learn to read and achieve at grade level; and
- Parent engagement in the education of children with LD.

Although progress has been made in addressing the issues and adopting the best practices highlighted in this chapter, several barriers remain. Chapter 4 explains what stands in the way of putting more good practices into place in the schools, districts, communities, and homes of children from low-income families—as well as what prevents the practices from making more of a difference even when they are present—and suggests potential solutions. We conclude in Chapter 5 with some takeaway thoughts about the connections between how we teach children with learning disabilities to read and how we might help more children in general read at grade level by the end of third grade. Throughout the text, sidebars provide examples of effective practices that emerged from interviews. These examples are for illustrative purposes only and are not meant to be comprehensive.

One of the most *important contributions to the education of children with learning disabilities* has been the explosion of knowledge from research on how the brain develops, acquires language, and processes information—in particular, what the neurological "reading circuit" looks like in the brains of people who do and don't struggle with reading, and how the brain changes in response to effective treatment. A second major contribution has been the evolution in knowledge about how best to teach the skill of reading. Together with developments in the conceptualization of what learning disabilities are and how to identify them, these fields of research have shaped a new understanding of what it takes for children with LD to construct and distill meaning from written language.

Major milestones in this convergence of research on neuroscience, reading, and LD include the following discoveries.

Different regions of the brain have specialized functions, and several play roles in the process of acquiring language and reading skills. For instance, language and speech are organized, produced, and manipulated in the frontal lobe;[12] letters are identified in the visual cortex in the occipital lobe; language is linked to meaning in the parietal lobe; and verbal memory is located in the temporal lobe.[13] On the left side of the brain, an area spanning the parietal and temporal lobes is involved in analyzing and decoding words,[14] linking letter sounds and written words,[15] and comprehending written language.[16] A separate area spanning the occipital and temporal lobes is involved in automatic, rapid access to words and in fluent reading in which people quickly recognize known words.[17] Moreover, the processing centers in the brain that matter for certain types of learning can change over a person's life span. For instance, the right hemisphere of the brain is involved in early language learning but less so in learning as the brain ages.[18]

During the learning process, the brain creates connections between neurons to form an interconnected circuit, or neural network. In reading, these connections link visual skills with the ability to differentiate among sounds, attribute meaning to words, and so on.[19] An important point here is that the brain's role is not just to perform cognitive processes but to process the elements of language, and—as later research shows—

★ the brain's "connectivity" means that an educational approach that activates only one area of the brain will fall short, whereas a comprehensive one has a better chance of succeeding.

differences in how brains process language lie at the core of the differences between people who do and don't have learning disabilities.

*Because there is no **single** brain center devoted to reading, it takes communication among multiple centers for reading to occur.* In other words, while learning *language* is a "natural" act, reading and writing are not; the brain has to recruit neural centers and networks that were originally designed to do something else and apply them to reading and writing. Or, as neuroscientist Stanislas Dehaene put it, "Our cortex did not specifically evolve for writing. Rather, writing evolved to fit the cortex."[20] This interrelatedness means that an educational approach that activates only one key area of the brain will fall short, whereas a comprehensive one—one that builds associative networks among different areas of the brain and gets them to communicate with each other—has a better chance of succeeding.

Important brain development occurs early in a child's life. So does the development of language, which underpins the ability to read and write.[21] In fact, researchers have found that differences in the amount of time it takes for children as young as six months old to distinguish between individual sounds is the single best predictor of slow language development by age three.[22] As the brain matures it becomes more specialized and thus less able to adapt. Timing matters: "Although the 'windows' for language learning and other skills remain open, these brain circuits become increasingly difficult to alter over time."[23] This research underscores the importance of identifying learning differences early in a child's life and addressing them through instruction and interventions as soon as possible.

Important brain development also continues into early adulthood. For instance, myelination—the process of developing a fatty substance in the brain that accelerates the transmission of information—is not finished until a person has reach the early to mid-twenties.[24] The last areas of the brain to reach adult levels of myelin include the frontal lobe, which governs speech and language. Thus, while vision and other sensory systems are "fully adultlike in the first few years of life," learning and memory functions have a much longer developmental period."[25] This research on brain plasticity helps to explain the finding that brain functions can change in response to instruction (see p. 24).

Although genetics provide the blueprint for brain development, experiences also influence the shape of the brain's neural circuits. By "experience," we mean exposure to environmental factors ranging

from toxins and stress to good or bad teaching practices. Experience can influence brain development either while the brain is being built or after it matures.[26] Moreover, some parts of the brain "require more experience than others to develop normally, and if sufficient experience does not occur during the time that particular region or circuit is forming, the functionality of that region and circuit may be limited."[27] This finding again supports the need for positive early experiences and intervention. Indeed, research finds that interventions to treat dyslexia "are more effective if administered to children at risk (age 5 or 6) before they have demonstrably failed to learn to read at age 7."[28]

Five essential skills or areas of knowledge drive the reading process: phonemic awareness (ability to notice and work with the discrete sounds in words); phonics (understanding of the relationship between letters and sounds); fluency (ability to read text quickly and accurately); comprehension; and vocabulary. These core components of reading were identified in 2000 by the National Reading Panel, convened by the National Institute of Child Health and Human Development and the Department of Education, after two years of inquiry. The panel's findings suggested that reading is a complex process that requires a combination of skills, and curricula and instruction should address all five components.[29]

Eleven early literacy skills consistently predict later literacy achievement for preschoolers and kindergartners: alphabet knowledge; phonological awareness;* rapid automatic naming of letters, digits, objects, and colors; writing letters or one's own name on request; phonological memory (ability to remember spoken information for a short period); knowledge of print conventions and concepts; print knowledge (including elements of alphabet, concepts, and early decoding knowledge); reading readiness; oral language; and visual processing ability. These findings were distilled by the National Early Literacy Panel (NELP) from meta-analyses of 500 peer-reviewed research studies. NELP also identified instructional practices, programs, and strategies that are effective in imparting these skills to young children. The primary types included: code-focused interventions; shared reading; parent and home programs; preschool and kindergarten programs; and

★ **e**xperience can influence brain development either while the brain is being built or after it matures.

**Phonological awareness* encompasses a child's ability to recognize the many ways that sounds function in words, while *phonemic awareness* only encompasses an understanding of the most minute sound units in words. See www.k12reader.com/phonemic-awareness-vs-phonological-awareness.

THE BRAINS OF DYSLEXICS ALSO OPERATE DIFFERENTLY WHEN READING

language-enhancement interventions. Different approaches influenced the development of different essential skills, NELP found.[30]

Three stumbling blocks have potential to impede children's ability to read. A report issued in 1998 by the National Research Council identified these as (1) "difficulty understanding and using the alphabetic principle—the idea that written spellings systematically represent spoken words"; (2) "failure to transfer the comprehension skills of spoken language to reading and to acquire new strategies that may be specifically needed for reading"; and (3) "the absence or loss of an initial motivation to read," which often occurs for struggling readers during the first few years of school. The authors of this report, who based their findings on the research and experience of diverse experts, found it "imperative that steps be taken to ensure that children overcome these obstacles during the primary grades."[31]

The brains of dyslexics are structured differently from the brains of non-dyslexics. People with dyslexia have less gray matter (nerve cells) in the left parietotemporal area,[32] which can cause difficulty processing language sounds. Many dyslexics also have less white matter (connective fibers that transfer information) in the same region,[33] which can make it harder for various parts of the brain that are involved in reading to communicate with each other.[34] In addition, right-handed people with dyslexia tend to have brains that are either symmetrical in the right and left hemispheres or slightly larger on the right than the left, while non-dyslexic people have larger left hemispheres.[35] These findings established that dyslexia is a neurobiological condition rather than the result of poverty, culture, or developmental delays (although those factors can exacerbate the problem).

The brains of dyslexics also operate differently when reading. In 2002, researchers using functional magnetic resonance imaging (fMRI) discovered that the brains of non-dyslexic readers had more metabolic activity in the areas that are important for reading than the brains of children with dyslexia.[36] Other areas of the brain can compensate for the accuracy of words being processed, but not for the speed with which they are read.[37]

The differences among brains support a belief that every brain is different. From the "cerebral diversity" perspective, dyslexia and other reading disabilities are an anomaly rather than an abnormality. As researcher Martha Bridge Denckla suggests, just as some people don't have an "ear" for music it may be that some people are born "with an untalented 'ear' for the speech sounds of language, which makes it very difficult to connect with an alphabetic system and be proficient at reading."[38] Since learning is brain-based, this knowledge means that teaching must be individualized to each learner to find the strategies that drive each person's brain most effectively.

Brain functions can change in response to instruction. Researchers used fMRI in 2004 to establish that effective teaching not only improves reading ability, it also alters how the brain works to make it more efficient. As instruction helped struggling readers in this study overcome reading obstacles, their brains showed activity similar to that in the brains of proficient readers.[39]

Affective networks, which help the brain impart emotional significance to inputs, influence a person's motivation for and interest in reading. These networks are made up of many specialized, interconnected modules. Thus, for example, a student interprets his teacher's facial expressions and the emotion in her voice simultaneously, and one interpretation influences the other.[40] Moreover, because many modules of the brain are involved, differences in affective processing exist across learners: "Some students prefer to read in a quiet environment; others are comfortable reading in the middle of noisy activity. Some like the predictability of reading familiar stories multiple times, whereas others find rereading boring. Some students like the structure of being told what books to read and when to read them; others thrive on choice and independence."[41]

A positive affect—i.e., deep engagement in learning and interest in a specific topic—can overcome "severe deficits in recognition and strategic skills" in dyslexics, which can make a crucial difference in learning outcomes.[42] And negative affective influences, especially childhood depression or abuse, can derail the process of learning to read.[43]

Concurrent with the research developments, policies that affect how learning disabilities are defined, how and when children with LD are identified, and how they are educated have also evolved. Key policy developments, in chronological order, include:

1973

Section 504 of the Rehabilitation Act, which protects individuals with disabilities from being discriminated against in programs (including schools) that receive federal funding. Children who have

special needs but do not qualify for special education or have not been diagnosed with a specific learning disability may qualify for a Section 504 plan, which provides accommodations that enable the student to participate fully in education activities.

1975

The Education for All Handicapped Children Act, which guaranteed a free, appropriate public education for children with disabilities in the least restrictive environment; recognized LD as a category of disability eligible for federal funding for direct services; gave parents the right to sue in court if their children did not receive the guaranteed education; required schools to create an Individualized Education Program (IEP) for each eligible student, specifying what services would be provided and what accommodations the student would receive; and obligated schools to pay for the services specified by the IEP.

1990

Reauthorization of Education for All as the Individuals with Disabilities Education Act (IDEA), which established that children with disabilities should be included in the regular (general education) classroom to the greatest extent possible. A key section of this law calls for removal from the regular educational environment "only when the nature or severity of the disability is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily."[44]

1990

The Americans with Disabilities Act (ADA), a civil rights law that prohibits discrimination based on disability. However, as originally enacted the ADA was open to interpretations that prevented the law from applying to dyslexics and others who benefited from "mitigating measures," such as extra time for test taking, using the rationale that students who used these accommodations and were able to perform well were no longer disabled.

1996

Modifications to the National Assessment of Educational Progress (NAEP), which established testing accommodations for students with disabilities.

1997

Reauthorization of IDEA, which mandated that students with disabilities participate in state tests and required states to report those test results publicly. Exceptions were made for individuals with *significant cognitive disabilities,* who could take alternative assessments. The reauthorization also required districts to monitor the racial and ethnic breakdown of students receiving special education services. However, the law did not establish consequences for states that failed to comply with the inclusive testing requirements, and many resisted making the change.

1999

The Reading Excellence Act, which acknowledged literacy as a national priority. This law began a national discussion about how to reform public education with literacy as a strong component.

2001

Reauthorization of the Elementary and Secondary Education Act of 1965 (ESEA) as the No Child Left Behind Act (NCLB), which added an emphasis on improving outcomes for all students regardless of ability and made schools accountable for all students' progress. Under NCLB, "states must test at least 95 percent of their students with disabilities. They also have to incorporate test scores of all subgroups of students, including those with disabilities, into school ratings and provide the test results to the public on school report cards. The law's long-term goal is to have all students performing at the proficient level on state tests by 2013–14. Schools that do not make 'adequate yearly progress' [AYP] toward that goal face a series of sanctions, the severity of which grows with the increasing number of years they fail to meet their achievement targets."[45]

NCLB focused attention on the importance of disaggregating data on subgroups of students, including children with LD, to ascertain the degree of progress toward the proficiency goal. The law required schools to have highly qualified personnel for teaching students with disabilities (e.g., bachelors degree, full state certification, subject-matter expertise). NCLB also signaled a major national commitment to literacy by including two grant programs, Reading First and Early Reading First, funded at $1 billion and $50 million respectively (and later defunded in 2008), and the Striving Readers Comprehensive Literacy program for middle- and high-school students.

However, the manner in which NCLB's accountability system was implemented created a high-stakes environment in which schools tended to blame students with learning disabilities for bringing down their AYP scores. Schools had an incentive to game the system, which some did by developing alternative assessments (generally geared to a lower standard) for students with LD and moving large proportions of students into alternate assessments whether they needed them or not.

2004

Reauthorization of IDEA, which created the National Instructional Materials Accessibility Standard (NIMAS, now called Accessible Instructional Media, or AIM). NIMAS codified the term "*print* disabilities" for the first time, thereby establishing that if the environment—print—is part of the issue for some readers then the problem may be difficulty processing print information rather than a *learning* disability. NIMAS further specified that states (and, therefore, schools) must provide educational instructional materials in alternate formats accessible to people with print disabilities.

IDEA 2004 was important in several other ways, too:

- It prevented states from mandating use of the IQ discrepancy formula (see p. 32) to identify children with learning disabilities and instead made Responsiveness to Intervention an allowable alternate method. (The significance of this change is discussed in Chapter 3.)

- It expanded the testing requirements for students with disabilities: "States were required to develop and implement alternate assessments aligned with the state's academic content standards. In addition, states had to report the number and performance of children with disabilities taking regular state assessments [with and without accommodations]…and how many children with disabilities participate in alternate assessments aligned with the state standards."[46] States also had to compare the performance on those tests of students with disabilities versus all students.

- It required states to track how many children from racial/ethnic minority groups are placed in special education and to provide "comprehensive, coordinated, early intervention programs" for children in groups that are deemed to be overrepresented.[47] Administrators in school districts where racial/ethnic minorities were overrepresented in special education, meanwhile, were required to set aside 15 percent of their federal funding for students who require "additional academic and behavioral support to succeed in a general education environment."[48]

2008

Reauthorization of ADA, which expanded the definition of disability to include learning disabilities and required schools to determine disability without considering the impact of "mitigating measures" (e.g., accommodations such as extra time to complete tests). The addition of LD as a disability that warrants accommodations benefited children who have Section 504 plans but not IEPs. The elimination of mitigating measures from the equation made it easier for students with LD to obtain testing accommodations that leveled the playing field.

2008

Higher Education Opportunity Act, which defined "universal design for learning" (UDL) as a scientifically valid framework for guiding educational practice that: "(a) provides flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged; and (b) reduces barriers in instruction, provides appropriate accommodations, supports, and challenges, and maintains high achievement expectations for all students, including students with disabilities and students who are limited English proficient."[49] UDL principles have become a popular framework for designing curricula and learning environments that work well for students with LD.

The research and policy developments summarized here represent an evolution of thinking about education for children with LD that has not always progressed smoothly and has not yet concluded. It has taken time, great effort, and a few missteps to reach today's vantage point, and experts see many important changes still to come. One reason for the slow, nonlinear progress is that the LD world shares some of the education world's fragmentation over how best to educate children—matters of technique, environment, and content (although a consensus perspective is emerging). Another reason is the lingering disagreement about how and when to identify children with LD, which is a fundamental issue that affects one's position on many other issues. Both factors are complicated by political realities that may produce either incentives or disincentives for the status quo to change. Chapter 3 looks at these issues and the promising practices and reforms that researchers, educators, and school systems have created in response, in more depth.

FOR THE MAJORITY OF CHILDREN WITH LEARNING DISABILITIES WHO ATTEND PUBLIC SCHOOLS, SUCCESS IN READING IS SHAPED BY HOW AND WHEN THE SCHOOL FORMALLY DIAGNOSES THEIR LEARNING DIFFERENCES ("IDENTIFICATION"); WHAT KINDS OF MATERIALS, CONTENT, AND LEARNING ENVIRONMENTS ARE AVAILABLE TO THEM; HOW THEY ARE TESTED ("ASSESSMENT"); WHAT SORT OF TECHNOLOGY IS AVAILABLE TO THEM; AND WHAT ROLE THEIR FAMILIES PLAY IN THEIR EDUCATION.

For the majority *of children with learning disabilities who attend public schools, success in reading is fundamentally shaped* by how and when the school formally identifies their learning differences; how they are taught and tested; what kinds of materials, content, and learning environments are available to them; and what role their families play in their education.

These topics are interrelated. For instance, a child who is not identified as having dyslexia until fourth or fifth grade has by that time missed out on getting extra intensive, multi-modal instruction in language structure, at a time when his brain was still highly malleable, that might have helped him learn to decode words more easily. Without appropriate testing accommodations, he has probably failed enough standardized assessments to make him frustrated and unhappy with school. His parents, at their wits' end, may not be in the mood to engage productively with teachers.

For the sake of clarity, however, this chapter addresses each topic or cluster of topics sequentially: (1) the identification of children with learning disabilities; (2) curriculum, instruction, and learning environment; (3) assessment; (4) technology; and (5) family engagement. For each topic we outline major issues and current thinking about the most effective solutions.

identification

The formal identification of a learning disability is important because it leads to the creation of an Individualized Education Program (IEP) and referral to special education services. Either outcome can be vitally important to the educational success of a student with LD, depending on the severity of the disability (and the quality of special education services).

The 2004 reauthorization of the Individuals with Disabilities Education Act required public school districts "to 'find' children who may have a disability and be in need of special education services":[50]

> *Under the law, schools have an affirmative duty to identify, locate, and evaluate students who they suspect may have a disability, in order to evaluate them for potential eligibility for special education services.... It is not enough for schools to wait until parents*

★ It is important to identify and address learning differences as early in a child's life as possible.

EARLY RTI:
good practices in action

Recognition & Response, developed by the Frank Porter Graham Child Development Institute at the University of North Carolina with funding from the Emily Hall Tremaine Foundation and the U.S. Department of Education's Institute for Education Sciences, replaces the intensive tutoring used in regular RTI with small-group lessons that focus on vocabulary, letter names, sound awareness, and the like—essentially providing enriched instruction, more teacher attention, and more opportunities to practice. It also embeds learning in the environment and other activities, to reinforce skills taught during small-group instruction. Researchers are adapting the model for use with dual language learners.

(http://randr.fpg.unc.edu)

Get Ready to Read!, developed by the National Center for Learning Disabilities, is a program that screens children for pre-reading skills before they enter kindergarten and provides activities that strengthen the skills. The screening tool is a 20-item, research-based series of questions that indicate the extent to which a child has mastered skills in three core areas of early literacy. Ideally, the tool is used with 4-year-olds twice during the year before kindergarten.

(www.GetReadytoRead.org)

The Literacy Partnership in Washington, DC, developed as part of the federal Early Reading First project, serves three- and four-year-olds from low-income families, many of whom are English language learners. The implementation team includes a child language researcher, learning environment coordinator, professional development coordinator, speech-language pathologists, and literacy mentors. Following the three-tier RTI model, the Literacy Partnership provides literacy instruction in the classroom, conducts baseline and progress assessments, and coaches and mentors classroom teachers and assistants so that children's emergent literacy skills are aligned with the district's K-3 standards.

Coleman, M.R., Roth, F.P., and West, T. (2009). "Roadmap to Pre-K RTI: Applying Response to Intervention in Preschool Settings." www.rtinetwork.org/images/roadmaptoprekrti.pdf

ask about or request a special education evaluation based on suspicion that their child may have a disability and [is] struggling in school as a result. Schools must maintain a system of notices, outreach efforts, staff training, and referral processes designed to ascertain when there are reasonable grounds to suspect disability and the potential need for special education services.

In addition, parents have the right to request that their child be evaluated for learning disabilities at any time.

For decades, the commonly used LD identification process, which involves a referral, psychological evaluation, and decision by a multidisciplinary school team, was confusing and inconsistently executed.[51] At one point, more than half of the students identified as learning disabled by schools (and

potentially as many as 70 percent) did not meet state or federal criteria for LD.[52] Moreover, children with LD often were lumped together with low-achieving but non-disabled students and those with mild mental retardation, which meant that some students were not getting appropriate services or sufficiently challenging content. In this context, some experts felt that learning disabilities had become "a sociological sponge to wipe up the spills of general education."[53]

For the sub-population we are particularly concerned about—children from low-income families—the "sponge" has also captured the effects of poverty on early childhood.* As the Campaign's *Early Warning* report noted:

> *Too many children from low-income families lack early interactions that foster linguistic development, including verbal interactions with their parents, being read to, and access to books in their home, compared with children from middle-income families.[54] Vocabulary development by age three has been found to predict reading achievement by third grade.[55]… By age three, children from wealthier families typically have heard 30 million more words than children from low-income families.*[56]

Why is the traditional method for identifying learning disabilities considered problematic? It is based on the existence of a discrepancy between the student's ability and achievement. Most often, evaluators measure the gap between the student's IQ and his or her performance on standardized tests, but it could also be the discrepancy between the student's expected and observed grade level or his/her deviation from actual grade level.[57]

Critics of the IQ discrepancy model—which is still used in many states, sometimes in combination with other methods—say it is inaccurate, because LD students' IQ scores may be suppressed by their reading disabilities, and misleading, because it is so difficult to distinguish between students with LD who exhibit a discrepancy and struggling readers who do *not* have a discrepancy. They also deem it unfair to children, because it is very difficult to identify IQ-achievement discrepancies at an early age.[58] Statistics bear this concern out: The largest number of students who are referred for special education under IDEA are in the 12–14 age group. This means schools are waiting for them to fully fail before diagnosing them, which sets up a pattern of frustration and causes the student to lose ground in both skills and content knowledge while other children move ahead.

*Unfortunately, many children from low-income families who have both a vocabulary gap and difficulty reading caused by LD don't get referred to special education; instead, they "act up" out of frustration and become labeled as having behavior problems.

In 2001, the U.S. Department of Education's Office of Special Education Programs held a national Learning Disabilities Summit to discuss the issues involved in LD identification and assessment. A paper presented at the summit, co-authored by eight national experts, urged changing the concept of LD "from a disorder that is unexpected because of discrepancies between ability potential and achievement to one in which underachievement is expected because of impairment of key cognitive processes"—processes that are measurable and can be linked to intervention.[59] A second paper offered "Responsiveness to Intervention" (RTI) as precisely that alternative identification approach.

RTI (sometimes called a multi-tiered system of supports, or MTSS) has since become a widely embraced approach that aims to identify LD early and accurately while also linking identification to instruction and support for students. RTI focuses on whether the student's performance changes in response to "a validated intervention implemented with integrity."[60] It also usually takes into account both the student's level of achievement and his or her rate of progress in comparison to peers, known as a dual-discrepancy definition of LD.[61]

RTI's basic structure involves moving students through a series of tiers or levels of instruction, diagnosis, and support:[62]

- In Tier 1, all students receive high-quality instruction by qualified teachers, and all are screened periodically to create a baseline for discrepancy measures and to identify students who need more support. Based on these screenings and standardized test results, students who are struggling get extra instruction within the regular classroom, usually in small groups. After about eight weeks, students who have made adequate progress return to their regular program while those who do not move to Tier 2.
- Students in Tier 2 receive increasingly intensive, targeted instruction in small-group settings, plus instruction in the general curriculum. The exact interventions are based on students' performance level and rate of progress. This stage usually should not last longer than one grading period. Students who don't make enough progress by that time may continue to Tier 3.
- Tier 3 features intensive, individualized interventions. Students who do not respond with adequate progress are referred for evaluation of eligibility for special education.

At any point in the process, parents may request a formal evaluation of eligibility for special education (as allowed by IDEA).

RTI can be implemented in several ways, but the key ingredients include:* high-quality, research-based instruction so it is clear that students' difficulties aren't caused by poor teaching; periodic screening and assessment to identify students' risks and monitor their achievement and progress, using multiple strategies (e.g., curriculum-based assessment, task and error pattern analysis, diagnostic teaching) in addition to standardized tests;[63] differentiated instruction that becomes increasingly intense and targeted to students' specific needs; and a combination of general and special education services for students who need them.[64]

A version of RTI has also been developed for preschool children, in an effort to help children in the age gap between the earliest years (served by the Early Intervention Program for Infants and Toddlers with Disabilities, Part C of IDEA) and grades K–3 (served either in Head Start programs or in the school setting by IDEA). Early RTI identifies three- and four-year-olds who have precursors of specific learning disabilities related to language and literacy, such as difficulties with oral language development, letter knowledge, and phonological awareness. It provides less-formalized interventions than RTI that are more appropriate for early learners and preK classrooms (see p. 31 for examples).

RTI has several advantages over the IQ-discrepancy model when implemented well. It doesn't require students to fail repeatedly before connecting them with help, because the frequent assessments tend to identify reading problems earlier. It links identification to instruction, providing intervention *before* children are formally identified as having LD or referred for special services, which means that children receive help without delay. It catches children who are struggling but not failing enough to be referred to special education. It teaches instructors to calibrate practices to each student's needs. It potentially reduces the over-identification of children with LD, because for some students the interventions in Tiers 1 and 2 are sufficient to make formal referrals to special education unnecessary. And, because all children are screened during Tier 1, RTI brings general and special education together to improve instructional practices for all children while giving those who need it "an extra scoop" of targeted intervention, as one expert put it.

*E.g., as a partial or school-wide model; using more than three tiers; using problem-solving approaches; and so on.

Evaluations of RTI have found it to be a powerful approach for improving the academic outcomes* of students with LD when implemented correctly. A meta-analysis of 24 studies involving four large-scale RTI models found that 80 percent of students who received RTI interventions showed improvements in achievement, and less than 2 percent of the students were ultimately identified as having learning disabilities.[65] Similarly, a guide published by the U.S. Department of Education's Institute for Education Sciences, which was subjected to rigorous peer review and high standards for evidence, found two aspects of RTI particularly effective: (1) screening of all students for potential reading problems at the beginning and middle of the year; and (2) intensive, explicit, and systematic instruction, delivered in small-group settings, on up to three foundational reading skills (e.g., phonemic awareness, decoding, reading comprehension, and fluency) for students whose screenings indicate low performance. The authors also found evidence that supported RTI's emphasis on customized reading instruction, periodic monitoring of student progress, and intensive daily instruction on the components of reading proficiency for students who show minimal progress.[66]

For those reasons, an estimated 60 percent to 70 percent of school districts across the country are in the process of implementing RTI, and several states have mandated it statewide. A community of practice has developed around the approach, supported by the RTI Action Network. And funders, such as the Oak Foundation, are investing in studies of RTI models to learn which help to identify specific "breakdown points" in the learning process and to bolster instruction at those key stages.

However, the growth in RTI has also fueled criticism. The main objection is not to the approach but to its low-quality implementation in some places; fidelity to the model varies greatly. It is possible for schools and districts to use RTI to reduce the number of children referred to special education or to delay referrals (by stringing out the process of moving through tiers). Some districts erroneously require children to complete all three tiers before referring them for special services, which needlessly delays intervention. Some critics point out that RTI is still a model built around children failing at some level. Others balk at its expense, because teachers require extra training, coaching, and support to implement it well. (See p. 54 for more discussion of costs.) And some people emphasize that it's important to combine RTI with an assessment of children's core cognitive processes, rather than completely eliminating the latter method.

*Including academic skill, growth in a particular skill, and time on task and task completion rate.

curriculum, instruction, and learning environment

Curriculum, instruction, and learning environment are all important in their own right, but each one also shapes the others. Consequently, we address all three here.

The "reading wars" of the 1980s and 1990s polarized educators over the best way to teach reading, whether to all children or to struggling readers. Some educators championed whole-language instruction, which held that children immersed in a language-rich environment would naturally learn to read without much structured guidance, simply by hearing and seeing words and picking up their meaning from context. Others supported the phonics method, in which children learn the structure of language—first letters, combinations, and the sounds those combinations make (called phonemes), then stringing phonemes together and deconstructing ("decoding") words into their phonemic parts.

The National Reading Panel tried to bridge the divide by calling for an approach that balanced both theories; its 2000 report positioned phonics as one of five core components of reading (the others being phonemic awareness, fluency, comprehension, and vocabulary; see p. 22). The panel's experts, like some others in the field, had come to see reading instruction as a process that involves not only helping children decode new words but also recognizing known words without having to sound them out and understanding how ideas in one sentence or paragraph connect to other parts of a text.*

The phonics-vs.-whole-language debate played out in the LD world with extra fervor because dyslexia, by its nature, involves difficulty with the very language-processing functions in the brain that phonics instruction targets. Moreover, the ideal balance of teaching techniques in "balanced literacy" might look very different for a student who struggles with one particular part of the reading process than for a child who learns to read easily.

★ the fight over how to teach reading led many people to conclude that phonics instruction is vitally important, but it is not the *only* appropriate form of instruction for children with LD.

*Debate remains in the field, however, over whether some of the "balanced literacy" models of instruction that subsequently emerged are merely whole-language approaches in disguise.

Several other factors have complicated the situation, including:

- *Isolated, fragmented, and incomplete interventions at the school and classroom level,* produced by separate funding streams for different types of students (e.g., Title I of ESEA, programs for English language learners, general education, special education). "This results in children receiving several different, discrete bits of reading instruction in a day instead of the intensive practice in a skill or concept that they need—and children with LD have the greatest need for consistent, reinforced instruction," notes reading expert Sally Grimes.

- *Poor preparation and support of teachers (in both general and special education)* who work with LD students. The numerous issues here range from inadequate training for new and existing teachers (see p. 55) to low levels of pay and respect for teachers who specialize in early and special education, which drive many capable teachers from the field.

- *A shift in responsibility for teaching some children with LD* from the special education teacher to the general education teacher. This trend is, in part, an effect of RTI's success in intervening early enough with some children to prevent their being referred for special education. However, the shift makes it even more important that general education teachers understand how to teach reading, especially to struggling learners—and see it as their responsibility to do so.

- *Low socio-emotional skills among many students at school entry,* especially among many children from low-income families who have not had access to high-quality pre-kindergarten programs. These skills, which are needed to function in a structured school environment, include: the ability to manage emotions, follow directions, take turns, share, take responsibility, work independently and cooperatively, and stick with a task; motivation; enjoyment of learning; and executive function—an ability to control oneself, make plans, learn rules, act appropriately, and think in abstract terms.[67]

Although some polarization remains, the fight over how to teach reading led many people in the LD world to the same conclusion that many in the general education world reached: phonics instruction is vitally important, but it is not the *only* appropriate form of instruction. The question then becomes, what other types of instruction are important, how should they be delivered, and what curricula best support them?

Based on the interviews and research review conducted for this report,[68] *the most effective forms of instruction and curricula* for teaching children with LD to read are:

- *Grounded in a theoretical framework* for how reading skills are acquired, where and why the process may break down, and what instructional or curricular element is needed to restart, maintain, or accelerate learning—based on neuroscientific findings and evidence from effective education programs. "What's most important is that teachers have a paradigm in their heads for how language works," says Blanche Podhajski, president of the Stern Center for Language and Learning. "It starts before professional development; it's about the teacher having knowledge and understanding, so that they know what practices are appropriate."

- *Standards-based,* holding students with LD to high standards (preferably using the same curriculum and tests as other students, although there is not consensus on this point across the field).

- *Comprehensive,* addressing all five components of the reading process, interweaving several components into the same lesson, and incorporating dialogue between teacher and student as well as reading and writing. For example, a teacher may use spelling activities to boost decoding skills and written responses to promote reading comprehension.

- *Language-based,* explicitly instructing students in the structure of language as well as the meaningful parts of words. Teachers use the spoken language as the basis for reading, helping students develop their oral language skills and vocabulary while also transitioning from speech to print.

- *Code-based,* helping students learn to break the "code" behind reading through phonemic awareness, phonics, and fluency rather than by relying on guessing or memorization. Phonemic awareness is incorporated into all reading instruction (not addressed in isolation), and phonics instruction includes lessons on word structure and origins.

- *Intensive,* giving students extra practice through daily reviews, guided and independent practice, tutoring, and targeted small-group instruction.

- *Multi-modal and multi-sensory,* providing many pathways for gaining skills (ranging from tactile media to project-based instruction).

- *A combination of direct instruction* (i.e., teaching skills explicitly) *and instruction in strategies* (e.g., how to identify the main idea in a paragraph in order to derive meaning from the text), using evidence-based practices matched to students' learning characteristics.

- *Diagnostic,* with teachers using frequent formative assessments to ascertain whether students have mastered the material and, if not, prescribing and delivering appropriate interventions.
- *Personalized,* with a separate learning profile developed for each student that teachers use to customize instruction to the student's learning style and strengths. Small-group strategies reduce teacher-student ratios and provide time for extra practice. (Some studies have suggested that small-group instruction is more effective in developing reading skills than one-on-one instruction.)[69]
- *Sequenced and segmented,* with the teacher breaking down skills into component parts and providing step-by-step instructions.
- *Scaffolded,* with the teacher prompting and modeling tasks to give students feedback and support on new skills and then gradually reducing the support as students become more proficient.
- *Explicitly organized,* with teachers clearly stating the objective at the beginning, having students review material before instruction begins, and directing students to focus on specific information.
- *Asset-oriented,* so that teachers focus on the student's innate strengths (e.g., logic, reasoning, visual perception, etc.) and the conditions under which learning is enabled rather than on his or her deficits. Outside of the classroom, tutors and mentors foster the student's self-esteem, ability to advocate for him- or herself, ability to use technical accommodations effectively, and so on.

These practices are known to be good for any emergent reader, but they are *necessary* for children with LD—and sometimes in higher doses and greater intensity than for other students.

Moreover, the mix of practices must be varied enough to meet each child wherever he or she stands on the continuum of reading abilities—from truly struggling readers who require very intentional, systematic, explicit, sequential, and structured reading instruction to above-average readers who will become proficient readers no matter how they are taught. As literacy expert Louisa Cook Moats wrote in a 2007 report:[70]

> *…[R]oughly 60 percent of children are 'wired' from birth for reading. Regardless of who teaches them, what instructional methods are employed, or how well those methods are presented, these students are likely to learn to read at least at a modest level.*[71] *But the other two-fifths of children—those who score in the bottom two quintiles on screening and predictive measures*[72]*—are at risk of reading failure*[73]*….[and] how these students ultimately fare as readers is profoundly affected by the reading programs they are subjected to.*

The key, agree experts interviewed for this paper, is to integrate and customize best practices according to each student's specific strengths and challenges, based on assessment data and progress monitoring. Integrating all, or even some, of these attributes into the curriculum and instruction of a program that serves children with LD is no easy task, however. Some educators resist on ideological grounds—maintaining, for instance, that an all-phonics approach is better than a comprehensive one. Or the requirements of one attribute may rub up against those of another. For example, intensive instruction requires faculty who can mix and match instructional approaches according to individual students' needs in order to accelerate their progress—something that isn't always feasible for teachers in a large mainstream classroom. Yet the desire to hold students with LD to the same academic standards as other students—and to give them opportunities to develop social skills and friendships with their peers—argues for including students with LD in mainstream classrooms to the greatest extent possible. Consequently, some students may not get as much intensive instruction as they really need.[74]

The learning environment also interacts with curriculum and instruction in powerful ways. When most people think of a learning environment, they envision the physical space in which learning occurs. And it's true that a physical environment rich with print materials and pictures that stimulate dialogue helps to develop most children's language and literacy. But for children with LD, print-heavy environments may not be the most accessible. Moreover, the way in which physical spaces are *used* also matters greatly, and this is where the learning environment overlaps with curriculum and instruction.

The intersection between curriculum, instruction, and environment has given rise to Universal Design for Learning (UDL), a set of principles for transforming curricula design and the learning environment to remove learning barriers for all children rather than trying to "change" the children who are struggling in the environment. In the field of architecture, the concept of universal design promotes products and environments that can be used by everyone regardless of age or ability. In the learning context, UDL represents a deliberate effort to reshape the inflexible, one-size-fits-all educational goals, assessments, methods, materials, and environments often found in schools, which tend to exclude learners with non-standard abilities or backgrounds.[75] UDL is

★ **U**DL attempts to reshape the inflexible curriculum and environment often found in schools to level the playing field for all students.

CURRICULUM, INSTRUCTION, AND LEARNING ENVIRONMENTS: good practices in action

Project Eye-to-Eye matches adults with learning disabilities with labeled elementary school students to act as role models, tutors, and mentors. Using a thematic, art-based curriculum, individual and group projects guide children to understand their learning differences; develop a proactive, asset-based personal learning style; and become positive self-advocates. The project's 38 chapters across the United States forge partnerships with parents, community groups, schools, and universities to create a network of advocates surrounding each child. Participants' family members join a coalition to share information and advocate for children with LD in their community. Mentor/tutors receive training in LD/ADHD issues, art pedagogy, community development, and working with children.

An evaluation by Harvard University's Graduate School of Education and Columbia University's Teachers College found that students who participated in Project Eye-to-Eye gained self-esteem (88 percent) and a sense of academic empowerment (86 percent), learned to think positively about their future (75 percent), and learned to advocate for their needs in school. Mentors found that the program helped them think about their own learning style and metacognitive skills (88 percent), think differently about their strengths (84 percent), and feel part of an LD community (100 percent).

(www.projecteyetoeye.org/about/our-results.html)

based on neuroscience, research on the science of learning, and a belief that "disabilities are defined by the interaction between the environment and the individual."[76]

David Rose, co-executive director of the Center for Applied Special Technology (CAST) and a leading force behind UDL, likens the universal approach to a public health response:

> *Imagine that a miner shows up at the doctor's office with black lung disease. You immediately give treatment; it's an urgent medical care problem. But if you have a lot of miners showing up with the disease, it's bad practice to continue to treat them only that way. You are forced to look at the problem as an environmental one, and you say, 'Mines are generating black lung disease so we need to do something about the mines.' You need both emergency care and public health practice.*
>
> *We came to see that children with LD are like canaries in the mine. Our schools don't have enough air in them; they're not well-designed and they aren't good at teaching all kids. Unless we treat the problem [in the environment], we'll continue to see kids as the problem.*

UDL provides a framework for creating highly flexible, customizable education goals, instructional methods, materials, and assessments (i.e., curricula). The framework encompasses three principles, based on neuroscience research, that collectively address the "what, how, and why" of learning:[77]

- *Provide multiple means of engagement* so that learners directly experience their own strengths, creativity, and intelligence as they learn; sustain their effort and persistence; and learn to self-regulate in response to the environment—all important aspects of the affective domain.
- *Provide multiple means of representing information* so that people who perceive and comprehend information differently have equal access (e.g., provide the same information through different modalities and adjustable formats; provide both linguistic and non-linguistic options for the same language, mathematical expressions, and symbols; highlight conceptual relationships; etc.).
- *Provide multiple means of action and expression* so students have several ways to interact physically with the information (e.g., not only by turning pages, typing on a keyboard, or moving a joystick), compose and communicate their ideas, and develop higher-level executive functioning (e.g., by setting goals, planning, developing strategies, monitoring progress, etc.).

UDL is gaining traction nationally. A state-by-state scan and targeted survey, conducted by CAST in 2010 and updated in 2011, found that "more states and districts are now viewing UDL as a critical part of their reform efforts than ever before."[78] Local leaders in these places are familiar with UDL principles and have linked them with other education initiatives, and state leaders report a strong connection between UDL and standards-based education initiatives. Some states are moving toward requiring UDL for curriculum design, the federal Race to the Top program for grants to develop assessments encourages applicants to address UDL, and the proposed language for reauthorizing ESEA contains language supporting UDL concepts. Nonetheless, UDL is still a new movement; confusion persists, locally and at the state level, about what UDL is. CAST's Rose estimates that 60 percent to 80 percent of teachers have never heard of UDL, and (as with RTI) the quality and fidelity of its implementation vary widely. Still, UDL's premise that all barriers to learning should be absent from the get-go, rather than relying on accommodations to level the playing field, holds promise for changing the learning environment in very fundamental and positive ways.

assessment*

Over the past two decades, the rate of students with disabilities who participate in assessments has increased dramatically in most states, from 10 percent or fewer students to more than 95 percent (and as much as 99 percent at the elementary school level).[79] This change is due in part to legislative reauthorizations that give students with disabilities the legal right to participate in and benefit from any state assessment and accountability system.[80]

Today the question is, under what conditions are those students taking the assessments, and what kinds of assessments are they taking? Students with dyslexia and other learning disabilities who cannot read with the fluency and comprehension of non-LD students face an unfair disadvantage when taking tests that involve significant amounts of reading and writing. It takes longer for them to process and respond to the questions, so they may need to take more breaks, use extra time, or spread the test over several days in order to demonstrate their full knowledge and skills. They may need to give their responses verbally or dictate them to a scribe. They may need to read text in larger print, receive instructions orally, or get the information via audio tape. The typical large-group testing room may have too many distractions, so students with LD may need to be tested in smaller groups or private rooms. They also may need, and be accustomed to using, assistive technologies to process information (see pp. 47–49).[81]

★ the desire to hold students with LD to the same academic standards as other students argues for including students with LD in mainstream classrooms to the greatest extent possible.

Thus the main issues involved in assessing students with LD revolve around (a) what sorts of accommodations they should receive in order to compete on a level playing field with other students, and (b) how to ensure that teachers and schools remain accountable for ensuring that all students meet high standards while also accommodating LD students' special needs—that is, how to make accommodations without lowering standards. The standards issue is especially pertinent given the development of Common Core State Standards, which define the knowledge and skills in language arts and mathematics that children should have at each grade level. The adoption of these standards by 45 states and three territories offers an unprecedented opportunity to overhaul the states' assessment systems, and several consortia have formed to not only revise the assessments but also, in some cases,

*The discussion of assessment in this section pertains to test-taking (i.e., assessing student achievement) rather than to assessing whether a child has a learning disability, which we discuss in the "Identification" section on pp. 30–35.

to try to create "an integrated system of curriculum and instructional materials and intensive professional development and support to build capacity in [schools] to teach [well]."[82] Three of the consortia are working on assessments for students with significant cognitive disabilities or those who are English language learners.

Two kinds of exceptions are relevant for students with LD: accommodations that allow such students to complete the same course work and tests that non-LD students take, and alternate tests for students with LD that are based on modified courses and different standards than those used to measure the achievement of other students.

The issue of accommodations on regular tests took center stage during the reauthorization of ADA 2008. Advocates pushed hard for amendments that would give dyslexics more time to complete tests, arguing that failure to provide extra testing time was discriminatory, because (a) a dyslexic's reading process is slow and non-automatic; (b) since dyslexics couldn't complete the tests in the time allotted, their scores were suppressed, leading to "inaccurate downgrading of [their] seeming intelligence" that could block their advancement; and (c) it made tests a measure of a person's disability rather than of his or her talents.[83] Conversely, advocates argued, extending the testing time levels the playing field because it allows dyslexics to demonstrate their knowledge without changing the standard of performance to which students are held and without changing results for non-dyslexics in a significant way.

The advocates won their case, and under ADA 2008 students with LD may now be entitled to extra testing time or modified testing "if their reading disability interferes with their ability to take timed tests or to comprehend material," as long as the test is not explicitly designed to measure reading ability.[84]

Another battle continues, however, over whether students with LD should take the same general education courses and standardized tests as other students or take alternate assessments based on different achievement standards. ESEA gives states the option of creating alternate assessments based on modified achievement standards "for those students with disabilities who are not able to show proficient performance in a year despite receiving adequate instruction,"[85] and 17 states have created such an assessment.

★ the main issues involved in assessing students with LD revolve around what sort of accommodations they should receive and how to keep schools and teachers accountable for ensuring that all students meet high standards.

NO ONE WANTS TO KEEP A STUDENT WITH LD FROM GRADUATING BECAUSE HE OR SHE COULDN'T PASS AN EXAM. BUT TOO MUCH ACCOMMODATION ERADICATES ACCOUNTABILITY.

When it comes to including or excluding students with LD from mainstream assessments based on mainstream standards, the accommodations question can be difficult. No one wants to keep a student with LD from graduating high school because he or she couldn't pass an exam. On the other hand, too much accommodation eradicates accountability. And many advocates believe that assessing students who have LD using "out-of-level" tests undermines their ability to catch up with non-LD students.

This controversy is fueled by the high-stakes environment created by ESEA 2001 (No Child Left Behind), which penalizes schools where subgroups of students (including those with disabilities) do not make adequate yearly progress as measured by test scores. In that environment, schools and districts have given alternate tests to large numbers of students with LD, including some who could take the regular test, because they fear that students with LD will bring down the schools' AYP scores. (As veteran education reformer Jack Jennings writes, "The major problem with standards-based reform is that it has become test-driven reform."[86]) A related problem involves teaching to the test: In a high-stakes environment, teachers tend to focus their efforts on those children at the margin of being able to pass the test, based on the logic that these children may help tip the AYP scales upward, and therefore ignore those who are most likely to fail—often the students with LD or with the most severe disabilities.

A separate but related issue bears mention here, although it deserves more attention than this paper can provide, and that is assessment of students with LD who also are English language learners. Experts in bilingualism say it is important to assess these children in two languages: their strongest (native) language to assess language ability, and English to measure their knowledge of discipline-specific concepts that have only been taught in English.

The LD field has not reached consensus on best practices for assessment and accommodations for students with LD. While some organizations believe that students with LD should be exempted from the standard assessments, others (including the Tremaine Foundation) believe adamantly that students with LD, with very few exceptions, have the ability to take the same courses and tests that other students take, achieve to the same standards, and obtain regular high school diplomas at the same rate as their non-LD peers (although perhaps using assistive technology or other accommodations). And, in fact, researchers have found that students with disabilities tend to perform "across the score range of current assessments," with some at the top end of the score distributions as well as some at the bottom;[87] and that a growing proportion of students with LD are able to graduate with a regular high school diploma (64 percent in 2008, compared with 52 percent in 1998).[88]

The field is somewhat more unified when it comes to classroom practices for individual student assessment. For example, experts agree that teachers should:

- *Use formative assessments frequently* to collect individual student achievement data and use them for structured reviews of progress;
- *Break skills into sub-skills* and analyze students' acquisition of those sub-skills (perhaps following up with targeted intervention) before moving the student to the next level; and
- *Develop well-defined and articulated plans* for what assessments to use, how often to readminister them, and how to link them with instruction.

Here too, however, concerns have surfaced—this time over the practice of crediting schools and districts for the growth in achievement made by individual students with LD. Again, the issue involves whether students with LD are being held to the same standards as other students. While most people agree it is useful and appropriate to be able to assess changes in achievement that standardized tests might not capture, researchers and advocates caution that growth is most meaningful when measured against the same content standards to which all students are held.[89] "We must avoid…approaches that give credit for growth based on a student's subgroup or that student's previous patterns of performance," observes one researcher. "These effectively remove students from standards-based reform and institutionalize and endorse past practices of separate curricula and lower tracks[.]"[90]

The testing concerns described here, while specific to students with LD, reflect an issue that lies at the core of national efforts to get all children reading at grade level: State standards for reading proficiency are low in general, and state-level tests therefore fail to identify many non-proficient readers, with or without LD. As the KIDS COUNT 2010 special report on third grade reading noted:

> *Each state sets its own standard and uses its own unique test to measure proficiency, and most set a low (and falling) bar compared with the [National Assessment of Educational Progress, or NAEP]…. Children in many states may be nominally proficient but still lack the skills to actually read at the level required to learn efficiently in the fourth grade and beyond.*[91]

The Campaign for Grade-Level Reading and its supporters therefore realize that the push to raise the bar on standards for proficiency must (a) address the testing issue and (b) be implemented in a way that gives every child an equitable chance to meet the standard. That commitment includes children with LD as well as children from low-income families. For the learning disabilities world, the drive to make reading standards more rigorous and assessments more meaningful is a game-changer. As the Campaign and other efforts to boost reading proficiency gain traction, they create opportunity and visibility for the LD community—not only because the goal can't be achieved without bringing along kids with LD, but because the changes needed to help children with dyslexia learn to read are both known and measurable.

technology

Technology can influence the educational outcomes of children with LD in two major ways, both of which involve helping students with learning differences access the curriculum and benefit from instruction. One way is through Universal Design for Learning, described earlier in this chapter, which infuses technology into the curriculum to create a learning environment that is barrier-free by design.[92] Another way is through assistive technology (AT), defined as "any device, piece of equipment, or system that helps [an individual] bypass [or] compensate for…specific learning deficits."[93]

Assistive technology (see p. 49) and UDL have been described as "two sides of the same coin."[94] Certainly, both kinds of technology can be transformative for students in terms of how they experience learning. The difference is the level at which they aim to transform. For example, where an AT solution might provide an individual dyslexic student with an audio version of a textbook, a UDL

TECHNOLOGY FOR STUDENTS WITH LD: good practices in action

Students at the Kildonan School in Amenia, N.Y., use language-manipulation computer technology to make learning easier. The school's structured writing program teaches students how to brainstorm content (using *Inspiration* software to organize ideas visually), develop an outline (using *Dragon Dictate* or *Dragon NaturallySpeaking*), and construct a paper (using *Co:Writer* to correct spelling and grammar mistakes). Teachers use interactive whiteboards in the classroom, and if students don't understand something they can use their individual iPads to get more information in graphic or video formats. ***Kurzweil 3000*** software connects students to reading, writing, test-taking, and study skills tools.

Learner Sketch is an interactive, Web-based tool to help people "explore the key mental ingredients that go into learning and see where their strengths and challenges lie." Users sort descriptive statements into three categories; the tool analyzes their response and provides feedback categorized by aspects of learning, including attention, complex thinking, language, and memory. The tool's developers and funders hope that future versions of the tool will be used to explore students' learning needs and abilities when they enter learning programs and environments. (To try the tool, see www.FacesofLearning.net.)

Metryx Mobile Tracker is a touch-screen application that teachers can use to conduct assessments; monitor student progress; track students' individual needs, skills, and challenges; and prepare reports and graphic displays of student and class performance. Developers Shawn Rubin and Stephanie Castilla created the formative assessment app for iPads, iPhones, Androids, and other devices to help increase the frequency and accuracy of differentiated instruction in the classroom. Rubin is director of technology integration at the Highlander Dunn Institute in Providence, R.I., which is piloting Metryx at its K–8 charter school.

approach would remove the curriculum's reliance on print media altogether, shifting *all* students to a combination of multimedia materials such as digital text that "speaks" out loud, videos, and so on.[95] Viewed from this perspective, technologies that serve an AT purpose also help to make UDL more effective.[96]

The sophisticated electronic, digital, and Web-based technologies that have become available over recent decades, along with simpler low-tech technologies, have enhanced the potential for assistive technology to help children with LD work around their learning challenges and maximize their strengths. Technological solutions for students with LD can be simple (e.g., getting rid of clutter on a website or changing the font size of printed text) or more complex (e.g., using computer

ASSISTIVE TECHNOLOGIES
for students with reading and writing disabilities

- Tools that help students circumvent the physical task of writing (e.g., "smart pens" that record notes) or facilitate spelling, punctuation, grammar, word usage, and organization (e.g., electronic spellchecker)
- Text-to-speech software that models fluent reading, supports vocabulary development, and frees students' attention to take notes
- Voice-to-text software for students who have trouble writing
- Study skills software that teaches readers to annotate text with virtual Post-It notes, highlighting, color coding
- Audiobooks
- Speech synthesizers and screen readers that display and read aloud text on a computer screen
- Videos, visual images, diagrams, and animated illustrations
- Freeform database software that, when used with word processing software, allows users to take notes that can be retrieved later by typing a fragment of the original wording
- Graphic organizers that let users dump information into a file and then organize it into a writing outline
- Personal FM listening systems that transmit a speaker's voice directly to the user's ear, helping the listener focus on the information
- Proofreading software

SOURCES: National Center for Technology Innovation and Center for Implementing Technology in Education. (2010). "Adolescent Literacy: What's Technology Got to Do with It?" www.ldonline.org/article/Adolescent_Literacy%3A_What%27s_Technology_Got_to_Do_With_It%3F

Stanberry, K., and Raskind, M.H. (2009). "Assistive Technology for Kids with Learning Disabilities: An Overview." www.ldonline.org/article/Assistive_Technology_for_Kids_with_Learning_Disabilities%3A_An_Overview?theme=print

Stanberry, K., and Raskind, M. (February 2010). "Assistive Technology Tools: Reading." www.greatschools.org/special-education/assistive-technology/948-reading-tools.gs?page=1

programs to manipulate print in order to make it easier to decode). The 2004 reauthorization of IDEA created standards for alternative, more-accessible instructional media (i.e., information delivered via assistive technology) to level the playing field for children with LD. One person interviewed for this report heralded that development as "even more important than UDL," because AIM is about delivering content—"and kids with LD are starved for content. It's the information that comes from the content that separates them from their peers."

Yet only an estimated 25 percent to 35 percent of students with LD currently receive assistive technology in school.[97] As schools and districts work to make both AT and UDL more prevalent, experts

recommend three strategies that seem likely not only to benefit students with LD but also help all students learn to read:

- *Make technologies accessible to many types of learners* (i.e., don't just replicate the print format in a technological one);
- *Use technology to uncover students' individual learning styles* so interventions can be customized; and
- *Use technology to change practices in a profound way,* creating better "on-ramps" for children struggling to read.

family engagement

Parents and other caregivers of children with LD vary tremendously in their response to the situation and their ability or inclination to take action. Some are eager to have their children evaluated for learning disabilities as soon as possible so they will be eligible for special services and/or modifications in the curriculum and testing. Others don't know much about LD, and they trust the educators who say their child will grow out of his or her learning problems over time. Still others don't want their child to face the stigma that comes from being labeled "LD"; the more affluent of these may pay for tutors to work with their children at home, while the less-educated may resist having an IEP developed for their child even though it could open the door to needed services.

Practitioners and advocates who work to engage parents of children with LD say that the primary needs are to (1) inform parents about what learning disabilities are and (2) educate parents about their rights and responsibilities. Both issues surface around the key stages of getting an appropriate diagnosis for the struggling student and then making sure the child progresses under whatever IEP or program he or she is eligible for—steps that require strong parent advocacy—and they affect parents and families from all walks of life. As with many aspects of education, however, the task of engaging parents in positive ways can be even more difficult when the parents belong to socio-economic or racial/ethnic groups that have experienced poor educational services, opportunities, and outcomes.

The dialogue between two characters in an international award-winning film about dyslexia[98] is painfully typical of real conversations that play out across this country every day:

PARENT ENGAGEMENT:
good practices in action

In Elon University's *It Takes a Village* program, university students in the teacher training program tutor struggling readers, diagnose their reading problems, and help parents develop customized interventions they can use at home. Participants meet regularly at a public library in Burlington, N.C., and when the semester ends the children receive free books from a local bookstore. Parents of participating children, some of whom speak English as a second language, report big benefits for their children, and educators say the program has helped integrate parents into the teaching process. With funding from the Oak Foundation, the program is being replicated in North Carolina and Oregon.

TEACHER: *"I'm asking about his problem, and you're telling me his symptoms. He's having trouble recognizing letters. In order to read and write letters, you have to understand their meaning….It's a neurological problem that could happen to anyone. It's a wiring problem in the brain."*

FATHER: *"So you're saying my son is mentally retarded?"*

In explaining the resistance of some parents to having their children tested to determine the existence of a learning disability, Nancy Tidwell, president and founder of the National Association for the Education of African American Children with Learning Disabilities, notes that today's children are "not the first generation that our schools have failed" to properly educate:

Many of the parents of the children we are so concerned about today did not experience success when they were in school. It's very difficult to get those parents to believe that things can be different for their children. Overall, we have not done a good job in this country of educating children with disabilities, but African-American children face the double jeopardy of race and disability.

Low-income parents of color may be intimidated by the predominantly white, middle-class teachers who dominate the profession, Tidwell continues. These teachers, because of cultural differences, often perceive children of color differently. The long-standing fear of mislabeling has caused many African-American parents to resist having their children tested.

And yet parents of children with LD must be proactive, knowledgeable advocates for their children, because the services required by law are so underfunded that without parental intervention many children with LD will simply slip through the cracks. Furthermore, as Marcus Soutra III, chief operating officer of Project Eye-to-Eye National, observes, a child who knows that dyslexia is the cause of his or her struggle with reading is more empowered to address the challenge. "We need to talk about [dyslexia] early and young, and bring kids to the table," he says.

Successful practices for engaging parents include:

- *Helping parents understand what LD is and how it affects their children's education from an early stage*—ideally, as early as preschool—since for most children parent involvement in education lessens over time;
- *Explaining LD in a culturally appropriate way* using terms that parents don't hear as derogatory or critical of their child's intellectual ability;
- *Reaching out to parents who may not otherwise be engaged* in the school; and
- *Reaching parents through the information sources they know and trust* (e.g., the NAACP, Urban League, local food banks, churches, etc.)

As this chapter shows, many researchers, practitioners, advocates, and parents know a lot about what it takes to help children with LD learn to read and succeed in school. The trick is to get all of the crucial ingredients in place, working together, and reaching all of the children who need them. Sometimes that happens, but often it doesn't. The barriers that can get in the way, as well as some potential solutions, are the topic of Chapter 4.

The learning *disabilities world has achieved some hard-won gains in recent decades.* Positive signs include the growing public recognition that people learn in different ways, the awareness of LD in concept and reality, and support for earlier intervention. As more high-achieving individuals publicly embrace their own learning differences, the stigma of having LD has declined. In schools and districts, the spread of RTI and Universal Design for Learning has boosted efforts to help struggling readers access the standard curriculum, take high-stakes tests, and achieve alongside their non-LD peers. And as the national economy has evolved to value creativity and innovation more than ever before—attributes that many people with LD have in abundance—a market, culture, and careers have emerged in which children with LD can hope to excel as adults.

Much more progress must occur, however, before all children with LD have an equal and equitable chance to become proficient readers. Confusion and misperceptions persist about what learning disabilities are (as the results of the 2010 GfK Roper survey attest; see p. 17). Too many of the people who should be most involved in teaching children with LD—educators and parents—still view learning disabilities as a stigmatizing condition, which impedes early identification and intervention. And disparities continue for children with LD who attend struggling schools in poor districts compared with those who go to well-resourced schools in affluent districts, especially in terms of who gets identified and connected to interventions, who gets referred to special education (and whether he or she gets good-quality services once there), and who simply falls off the page and out of school.

★ **m**uch more progress must occur before all children with LD have an equal and equitable chance to become proficient readers.

barriers

What stands in the way of getting more best practices into place in low-income schools, districts, communities, and homes—and what prevents those practices from making more of a difference even when they are present? In addition to the issues raised in Chapter 3, barriers include:

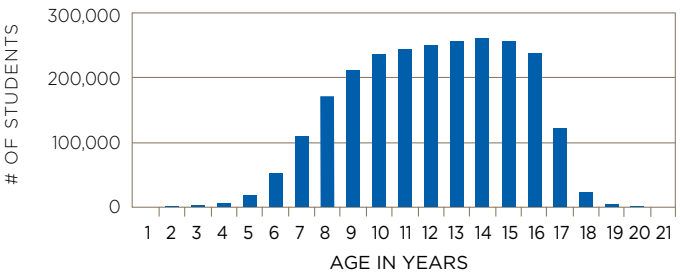
- *Multiple and sometimes competing constituencies* in the LD field that do not always agree on strategies or priorities. Many groups have a stake in helping children deal with learning disabilities—from parents, teachers, and principals to business roundtables, teacher education programs, and preschool programs—and each has its own philosophy about when to identify LD, whether having an IEP is beneficial or puts the child at risk of being "stuck" in special

education, which literacy programs and instructional methods have the best components, and so on. The factions are divided and disorganized more often than they are unified, and it's usually children with LD who pay the price.

- *Perceptions about the financial costs of intervention.* It's misleading to evaluate the cost of special education purely in terms of immediate financial expenditures, without taking into account the costs of remedial education later in life, the long-term social costs of failing to help LD children learn to read, or the impact on the nation's economic competitiveness. Yet this is the most common type of cost analysis, and it leads to the conclusion that, because practices for teaching children with LD are time-intensive, intervention is expensive. Yet when we consider return on investment, research shows it is more cost-effective to intervene early in a child's life than to provide remedial education later on;[99] moreover, the level of expenditure on special education is lower for students with LD* than for any other category of disability.

  It is also useful to consider who bears the costs and who reaps the benefits when analyzing the costs of intervention. For example, a high-quality pre-kindergarten program may reduce special education costs for elementary schools, because struggling pre-literate children who might later be diagnosed with LD (and thus referred for special services) are identified and helped much earlier. But the preK provider—and often the state, which subsidizes preK slots—foots the cost of this early intervention, while the school system realizes the cost savings.

NUMBER OF STUDENTS WITH SPECIFIC LEARNING DISABILITIES SERVED UNDER IDEA, BY AGE



Source: U.S. Department of Education, OSEP, 2009

As the table at right illustrates, current practices for identifying and serving students with LD encourage the most costly use of resources, in both human and financial terms, because the bulk of children in special education are between ages 9–16, when the necessary interventions are likely to be more intense and long-lasting (and thus more expensive).

*The cost was equal to 1.6 times the cost for general education students in 1999–2000, according to the Special Education Expenditures Project; see Cortiella, C. (2011). "The State of Learning Disabilities: Facts, Trends and Indicators." National Center for Learning Disabilities, www.ncld.org/images/stories/OnCapitolHill/PolicyRelatedPublications/stateofld/2011_state_of_ld_final.pdf, p. 21.

- *Inadequate teacher training.* Although research has identified what it takes to teach children to read, very little of this knowledge has infused the preservice training that elementary school teachers receive. Teacher education programs aren't standardized, and significant philosophical differences exist among them. The programs tend to focus on general knowledge rather than on explicit and systematic instructional practices and diagnostic skills. Instead, some LD experts say, we should reverse the emphasis and focus teacher training on what practices to use in the classroom, how to implement them, and what to do with assessment information. "There is no teacher-proof program, so we have to have teachers who are program-proof," says Margie Gillis, president of Literacy How. "The more a teacher knows about reading, the more they can take a program and optimize its effectiveness."

  The situation isn't much better for teachers trained in special education, many of whom are taught to work with children who have Attention Deficit Disorder/Hyperactivity Disorder, autism, and Asperger's Syndrome but not children with dyslexia or other specific learning disorders. And a majority of states (35) offer a "completely generic" K–12 special education license that allows teachers to teach any special education student in any grade.[100]

  "We have the potential to significantly reduce or ameliorate reading, language, and writing difficulties, and we're still not acting on that body of knowledge at any scale," says Louisa Cook Moats, an expert on language and reading, and the author of LETRS, a professional development program for teachers (see p. 56). "Most people who go through a training program never learn what a phoneme is or how many there are in English, or what a morpheme is, or how to take a word apart, or the structure of a sentence, or the difference between expository and narrative discourse. If you don't know these things there's no way a curriculum on teaching narrative text is going to make sense to you."

- *Lack of data* linking the receipt of special education to better outcomes. In today's evidence-based funding environment, "proven" practices get funded and those that don't have supporting data are a tough sell. Some researchers say that research on special education's benefits "is a minefield, because no one wants to say it isn't working." Others argue that if RTI is doing a good job, especially in the early grades, some children get effective interventions that make referrals to special education unnecessary, but data systems aren't capturing those success stories. (On the other hand, data collected on students who receive RTI *do* help to identify ineffective teachers, because their students will not show progress in response to interventions.)

TEACHER TRAINING:
good practices in action

LETRS (Language Essentials for Teachers of Reading and Spelling) is a series of books, workshops, and online courses for K–12 teachers and reading specialists, developed by reading expert Louisa Cook Moats. The modules progress sequentially through phonology, phoneme awareness, the writing system, vocabulary, fluency, comprehension, assessment for prevention and early intervention, word study, and study skills. The goal is to help teachers understand what to teach, why all the components of reading instruction are necessary, how to interpret individual differences in student achievement, and how to explain written English so that students understand and remember it.

BUILDING BLOCKS FOR LITERACY, a program developed by the Stern Center for Language and Learning, teaches parents and service providers to promote pre-literacy skills among children in child care and preschool settings. The online course explains research on early literacy and provides strategies for phonological awareness, language development (including vocabulary), shared book reading, and making the speech-to-print connection (including alphabet knowledge and early writing). Each lesson includes a video and activities as well as instruction.

solutions

Given these challenges, what will it take to get more of the best practices, reforms, and technologies to reach more children with LD, especially those from low-income families?

Experts interviewed for this paper called for federal policies that:

- Break down the barriers between general and special education to focus on good teaching overall;
- Support earlier identification of and intervention in learning disabilities so that more children enter school ready to learn;
- Maintain a high level of school accountability for helping children with LD make academic progress;
- Encourage states to consider UDL principles in the development of assessments;

- Require states to check their policies for unintended barriers to the implementation of UDL and RTI (also known as multi-tiered system of supports, or MTSS); and
- Require states to develop technical assistance systems for districts that want to develop UDL and MTSS.

They called for state and local policies that:

- Incorporate LD awareness, along with good practices for LD identification and intervention, into early childhood programs;
- Require early screening (i.e., ages 2–5) of all children for learning differences that might pose later difficulties with learning to read, either by early childhood personnel or physicians;
- Make sure that each school has someone (e.g., a reading specialist coordinator) designated to oversee implementation of practices for helping children with LD learn to read;
- Elevate and reward certified teachers of reading;
- Require elementary school teachers to complete a course in the structure of the English language and how language is learned, as well as a course on the research findings on reading;
- Align teacher certification tests with research-based knowledge of how children learn to read;
- Encourage alternative teacher licensing and professional development so that teachers are not limited to schools of education whose programs are not based on reading research;
- Make UDL an allowable use of funds under Title I, teacher professional development, and curriculum programs that support reading and mathematics instruction, and ensure that curriculum and instructional materials are aligned with UDL principles;
- Position RTI as a general education model, not a special education process (e.g., funding it through general education streams); and
- Make IEPs standards-based, so that individualized goals and outcomes map to the standards of the general education agenda and reforms.

RESEARCH FINDINGS
on teacher preparation

Numerous studies of teacher knowledge have revealed a serious gap in teachers' ability to correctly identify, analyze, and describe such basic language constructs as morphemes (the smallest units of meaning) and phonemes (the smallest unit of sound), irregular words, sound-symbol correspondences, and fundamental word sounds such as the schwa (a very short, neutral vowel sound in unstressed syllables).

Since many teachers overestimate their own knowledge about reading instruction, they are not likely to fill these gaps on their own.

The knowledge gap around dyslexia is especially distressing: 92 percent of preservice teachers in a recent study believed mistakenly that dyslexia is a visual perception problem (e.g., seeing letters and words backwards) rather than a language-based problem (i.e., difficulty processing phonological information).

SOURCES: Moats, L.C. (1994). "The Missing Foundation in Teacher Education: Knowledge of the Structure of Spoken and Written Language." *Annals of Dyslexia* 44, 81–101.

Cunningham, A.E., Perry, K.E., Stanovich, K.E., and Stanovich, P.J. (2004). "Disciplinary Knowledge of K-3 Teachers and their Knowledge Calibration in the Domain of Early Literacy." *Annals of Dyslexia* 54:1, pp. 139–167.

Washburn, E.K., Joshi, R.M., and Cantrell, E.B. (2010). "Are Preservice Teachers Prepared to Teach Struggling Readers?" *Annals of Dyslexia* 61(1): 21–43.

They suggested better training and support for teachers and school administrators, including:

- Higher standards for the recruitment and training of teachers by institutions of higher education;
- Training that starts with the foundational knowledge and understanding of language and literacy instruction so that teachers know what practices are appropriate (and when);
- Explicit training both in how to teach reading and how to teach it to students with LD;
- Training in how to screen students for learning disabilities, perform assessments, analyze performance data, and use the results to guide decisions about curriculum and instruction;
- Continuing education and recertification policies and programs that bring existing teachers up to date on the research and best practices related to reading instruction;

- Tools that make best practices understandable and easier to implement (e.g., detailed videos that demonstrate best practices in action; tools for creating individual learning profiles);
- Pairing of new or struggling teachers with master teachers; and
- Professional development in reading instruction for school administrators.

They advocated technology developments, including:

- Standards for online learning that integrate UDL and reflect multiple ways of learning;
- Incentives for online learning and virtual school models that welcome (and plan for) diversity; and
- Broader awareness of and demand for UDL, so that schools don't purchase materials that won't work for all students.

They urged researchers, evaluators, and funders to conduct studies linking the use of UDL and the receipt of special education services to student outcomes and to further clarify (a) the genetic factors that put children at risk for dyslexia, and the environmental factors that can undermine neural trajectories; (b) what mechanisms produce differences in how dyslexia develops at different ages; and (c) why some children with LD don't respond to intervention.

They proposed the development of assessments that follow a UDL approach, which could help to drive similar changes in curricula.

Interviewees recognized the need to mobilize parents as advocates, both for their own children and en masse as a powerful political constituency. In particular, experts called for parents to demand that educators, schools, and districts make special education more intensive, targeted, evidence-based, and aimed at helping students make more than one year's progress during a single school year. They also called for the development and use of specific frameworks for engaging families in their LD children's education, at varying levels of involvement.

They called for community-level literacy coalitions to represent and reflect the full spectrum of stakeholders in education for children with learning disabilities, including people and organizations involved in civil rights, disability rights, business, education reform, and poverty reduction efforts.

Finally, they called for better education of the general public so that people understand (a) how deficient the current system for educating children with LD is and (b) that learning disabilities are not learning impairments.

We are all unique learners.

Our brains develop similarly in a physical sense, but they do not all acquire language and process information in exactly the same way. These differences give the human condition a wonderful diversity, but they also pose some problems when it comes to reading proficiently. That's because even though the brain processes may vary, the core brain functions that must happen for proficient reading to occur are the same: phonemic awareness, phonics, fluency, comprehension, and vocabulary.

To the extent that we must all try to master the functions inherent in reading, we are all in a similar boat. However, the current that carries the boats forward is not equally strong for struggling, striving, and proficient readers. Children who have dyslexia and other learning disabilities, children who live in low-income families or poor neighborhoods with under-resourced schools, and children of color disproportionately bear the negative consequences of not being able to read proficiently. Many children who fit more than one of those criteria never get the interventions and supports they need to overcome their barriers to reading.

Therefore, we cannot expect a rising tide to lift all boats. We need more parents who understand what their children need, more students who have strong self-esteem and self-advocacy skills, and more teachers and school leaders who understand what dyslexia is and how to overcome it. We need these stakeholders to come together in a grassroots effort to connect education for students with LD to the broader literacy movement. And we need more mayors, governors, school superintendents, and chief state school officers to embed in schools, school districts, and state education systems the structures and practices that make a difference.

Across the country, policymakers, state and local school systems, funders, educators, parents, and community stakeholders are stepping up to the challenge of educating the current generation of children to higher standards than previous generations. The broad support and momentum for change triggered by the National Campaign for Grade-Level Reading is a prime example, and a very encouraging one. But we'll have to act strategically and intentionally if we want to ensure that children with LD benefit from and contribute to this movement.

★ **C**hildren who have dyslexia and other learning disabilities, children from low-income families or poor neighborhoods, and children of color disproportionately bear the negative consequences of not being able to read proficiently. We cannot expect a rising tide to lift all boats.

We know what the issues are: Identification of the child's learning differences that comes late in the learning process and, too often, uses faulty or biased assessments rather than research-based options. A one-size-fits-all education system that doesn't actually fit all learners. Teachers who are insufficiently trained and poorly supported in teaching children with LD, using curricula and instructional methods that are inaccessible to struggling readers. A learning environment that excludes children with learning differences from the get-go. And testing practices and policies that are intended to accommodate the needs of students with disabilities but, too often, end up denying them an equally rigorous education.

We know what many of the solutions are:

- A process for identifying children with LD that begins as early as preschool—ideally, with routine screening of all kids—is research-based, uses multiple strategies, links assessment to instruction and intervention, and is differentiated to address children's specific needs—such as Responsiveness to Intervention;
- An education system that recognizes cerebral diversity and, consequently, the need for individualized learning strategies;
- Curricula and instruction that are grounded in a theoretical framework for how language and reading skills develop, linked to high standards for all students, comprehensive, code-based, intensive, multi-modal, multi-sensory, diagnostic, individualized, sequenced appropriately, scaffolded, and explicitly organized;
- Learning environments that are accessible to all kinds of learners, such as those shaped by Universal Design for Learning, that incorporate technology in assistive and transformative ways, and that accentuate children's assets as well as their deficiencies—recognizing that people with LD can learn quite ably in ways that don't involve reading;
- Teachers who have the skills and knowledge to teach reading to all children and to intervene effectively with students who have learning disabilities, professional development that augments their capacity to do so, and school administrators who support them in this role and make it a priority;
- Policies and practices for testing students that allow them to compete on a level playing field without lowering standards for their performance; and

- Parents who are actively engaged with their children's teachers and schools as knowledgeable and powerful advocates.

In short, we need to think about teaching and learning as an integrated system. We need to bridge the divide between general and special education so the two systems work together—for all children, not just those in affluent communities. We need to hold all students to high standards. And we need to get more teachers, schools, early education programs, and parents to use the practices known to work. We know how to teach most kids to read; we're just not doing it.

Now is an excellent time to accelerate, unify, and strengthen the efforts already underway, to maximize the opportunities at hand, and to shape the results we want to see in the future. The ability to read has been described as a civil right, and the failure to teach so many children to read as a public health issue. It is both of those things, and more. Now, perhaps it can become a rallying point. "There's a movement afoot," says one of the experts interviewed for this report. "We know what to do; now we've got to do it together, rather than as isolated factions." Another expert concurs: "We've never been in a better place. We have the research, the practice, and hopefully the funding. And our kids are going to be better for it."

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Tremaine Foundation

Emily Hall Tremaine Foundation 171 Orange Street New Haven, CT 06510 203.639.5544

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