DON'T "DYS" OUR KIDS

DYSLEXIA AND THE QUEST FOR GRADE-LEVEL READING PROFICIENCY

by Leila Feister

Commissioned by the
Emily Hall Tremaine Foundation
in partnership with the
Campaign for Grade-Level Reading

The Campaign

for Grade-Level Reading, a national effort by dozens of funders 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:

- In 2007, nearly 6.2 million young people (16% of the 16-24 age group) were high school dropouts. Every student who does not complete high school costs our society an estimated $260,000 in lost earnings, taxes, and productivity.
- 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 — 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.
- An estimated 75% 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).
- 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% of the popu lation age 6 and older.
- That includes 2.4 million children and youth with LD—about 5% 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% to 20%, depending on the sample used.
- Dyslexia affects approximately 80% (or more) of people with LD.
- Children living in poverty are more likely to have LD (4%) than are children in non-poor families (2.7%).

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 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 disregard what we know from brain research about how to teach reading. Don't dismiss teachers from teaching what we know will achieve effective results. Don't distance children from technology that offers learning to all. Don't disappoint the future by not preparing all students for success. Don't disrespect 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 box on p. 3). 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.

⇛ every brain is different, so teaching must be individualized to each learner to find the strategies that drive each person's brain most effectively.

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 3- and 4-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, the partnership. 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." http://www.rti-network.org/images/roadmaptoprekrti.pdf

---

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% (and potentially as many as 20%) of all students having dyslexia or other specific learning disabilities, there simply are so many that we cannot overcome the achievement gap

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 ; 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. On the left side of the brain, an area spanning the parietal and temporal lobes is involved in analyzing and decoding words, linking letter sounds and written words, and comprehending written language. 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. 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.

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

⇛ 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.

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

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." 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. 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. 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." 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. 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." This research on brain plasticity helps to explain the finding that brain functions can change in response to instruction (see p. 9).

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

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."

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% 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."

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., bach-