



Evidence-based instruction for those identified in kindergarten will alter their trajectories in school and life.

**Senator Bill Cassidy
and Dr. Laura Cassidy**

Early Screening and Intervention for Students with Dyslexia

Although it affects as many as one in five individuals in the United States and 80 percent of all children labeled as learning disabled, dyslexia remains poorly understood in educational circles.¹ And although it is one of the most comprehensively studied learning disabilities, dyslexia often goes unidentified. Unidentified students who do not receive evidence-based instruction struggle in school and therefore are prone to suffer from low self-esteem. The problem extends beyond school: Published data from Texas and yet-to-be published data from Louisiana strongly suggest that a large percentage of prison inmates are dyslexic.²

Given that illiteracy is a risk factor for criminal behavior and that dyslexia is overwhelmingly the most common cause of illiteracy, we advocated for dyslexia screening to be included in criminal justice reform legislation.³ Senator

Cassidy requested that the First Step Act, recently signed into law by President Donald Trump, include this definition of dyslexia:

“...an unexpected difficulty in reading for an individual who has the intelligence to be a much better reader, most commonly caused by a difficulty in the phonological processing which is the appreciation of the individual sounds of spoken language, which affects the ability of an individual to speak, read, and spell.”

Critically, the federal definition of dyslexia as “an unexpected difficulty in reading” recognizes the central discrepancy between intelligence and reading in individuals with dyslexia (figure 1). That is, whereas reading ability and intelligence normally correlate, for those with dyslexia, they do not. The U.S. Senate recognized this paradox in 2018, when it passed a resolution stating that “an individual may

have both a weakness in decoding that results in difficulties in accurate or fluent word recognition and strengths in higher level cognitive functions, such as reasoning, critical thinking, concept formation, and problem solving.⁷⁴

The First Step Act requires that inmates entering the Federal Bureau of Prisons be screened for dyslexia. Given the proclivity toward academic failure, disengagement from school, behavioral problems, and involvement in the justice system, earlier screening for dyslexia is also an urgent necessity. The next step should be for states to require schools to screen all children specifically for dyslexia when they are in kindergarten.

Academic success, high school graduation, college graduation, and meaningful employment all require strong reading and writing skills. It makes sense that efforts to reduce recidivism among inmates that are dyslexic would include identification, appropriate instruction, and accommodations that increases their chance to obtain a GED. Likewise, states' K-12 educational systems should make every effort to allow dyslexic children to reach their potential and, among other good outcomes, reduce their risk

for incarceration later in life.

It was the science supporting the clinical diagnosis of dyslexia that led Laura, a physician, and others to start a public charter school in Baton Rouge for children with dyslexia in 2013. The Louisiana Key Academy was developed to connect current science with the identification and education of children with dyslexia.

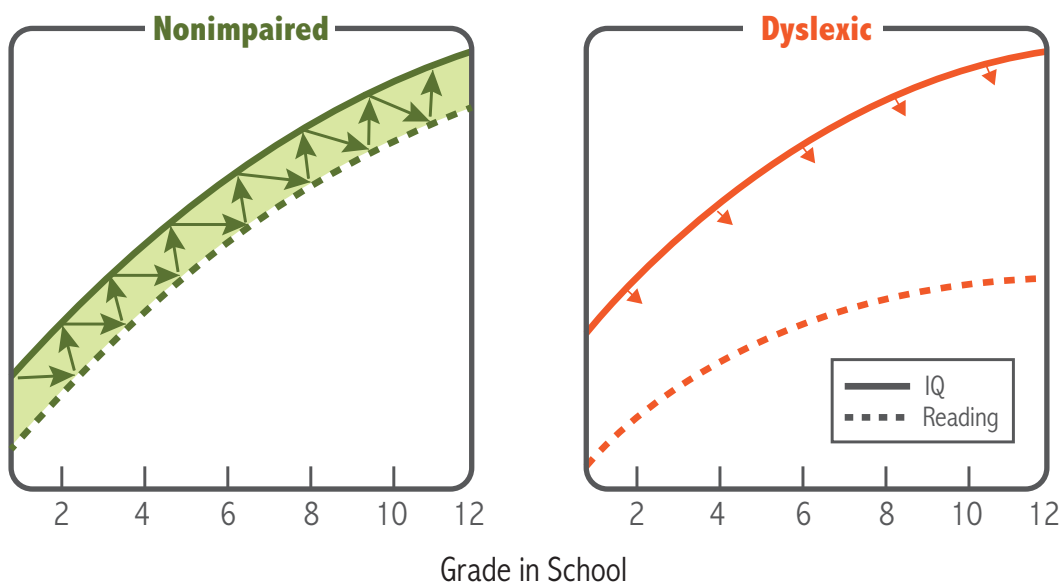
Early Screening and Effective Interventions

In 2018, the U.S. Senate passed Senate Resolution 680 on a bipartisan basis to encourage schools, states, and districts to better address dyslexia.⁵ The resolution states that “the achievement gap between typical readers and dyslexic readers occurs as early as first grade; and...early screening for, and early diagnosis of, dyslexia are critical for ensuring that individuals with dyslexia receive focused, evidence-based interventions that lead to fluent reading, promotion of self-awareness and self-empowerment...”

Given that the gap appears in the first grade and given dyslexia's prevalence and impact on

Screening for dyslexia is different from screening for struggling readers.

Figure 1. K-12 Reading and IQ over Time in Dyslexic and Nonimpaired Readers



Source: Adapted from Emilio Ferrer et al., “Uncoupling of Reading and IQ Over Time: Empirical Evidence for a Definition of Dyslexia,” *Psychological Science* 21 (2010): 93–101.

Note: In typical readers, arrows between IQ (upper line) and reading (lower line) illustrate that IQ and reading are dynamically linked over time. In contrast, there are no interconnecting arrows between IQ and reading for dyslexic readers, for whom IQ and reading are dissociated; one does not influence the other. The Y axis represents the level of IQ or the level of reading.

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academic success, we thus advocate that schools screen for dyslexia in kindergarten. Early diagnosis is important because, in general, reading interventions delayed beyond the first grade are less likely to yield significant improvement.⁶

Screening for dyslexia is different from screening for struggling readers. As doctors, we use this analogy: Screening for breast cancer is different from screening for all cancer. Since there is a specific treatment for breast cancer, doctors screen specifically for breast cancer. Similarly, if screening identifies a child at risk for dyslexia, and further testing confirms it, there are specific interventions and accommodations that benefit dyslexics but not nondyslexics.

Currently, most schools are reticent to identify children as dyslexic. The systems in place today call dyslexics “struggling readers” or “learning disabled.” When children have academic difficulties, the system places the child in a multitiered system of support (MTSS), which is commonly implemented in states through response to intervention (RTI) or refers them for a special education evaluation. But if the child is not identified as dyslexic and given evidence-based interventions, valuable instructional time and taxpayer money is wasted.

Functional magnetic resonance imaging shows that dyslexics use an inefficient system of the brain and therefore read slowly and with much effort.⁷ Thus dyslexia is lifelong, and neither teachers, curriculum, nor home environment can be blamed for the reading failure of a student with dyslexia. The National Assessment of Education Progress (NAEP) data show that 32 percent of American fourth grade students read below basic level.⁸ Some of these children come from the same educational or home environments as those reading at or above basic. This suggests that there is another factor at work.⁹

Convened by Congress in 1997 to assess the effectiveness of approaches to reading instruction, the National Reading Panel established an evidence-based methodology for instruction of children with dyslexia.¹⁰ Children placed in groups of six or fewer should get 90 minutes daily of structured language arts that includes decoding instruction and reading text out loud. The teacher must understand the core deficit of dyslexia and use a curriculum that builds upon the spoken word and alphabet recognition along

with reading out loud. Since all subjects include spoken and written words, dyslexics also need math, social studies, and science delivered in a way that they can understand.

The dyslexic student needs instruction specific for a dyslexic. General instruction for a small group of those tagged with “learning disabilities”—perhaps also including children with autism and Down syndrome—may check a box but fail to be appropriate for anyone. Because most dyslexic children are not identified as having dyslexia, school is a difficult, frustrating proposition that limits their potential. The child with dyslexia that is not identified and has no outside resources will most likely exhibit poor academic achievement compared with nondyslexics, diminished self-esteem, a reduced chance of high school and college graduation, and perhaps an increased risk of incarceration.

For this reason, Senate Resolution 680 called for action: “Resolved, That the Senate- (1) calls on Congress, schools, and State and local educational agencies to recognize that dyslexia has significant educational implications that must be addressed...”

Targeted Instruction in Louisiana

The best model for public schools serving students with dyslexia uses the principles of the National Reading Panel and current science, and it diverges from common practice. Some doubt that public schools can follow the guidelines of the National Reading Panel. They can.

As proof of concept, Louisiana Key Academy (LKA) is a public charter school focused and dedicated to educating dyslexics in first through eighth grade. LKA was developed to preserve children’s self-esteem and narrow the achievement gap with nondyslexics. LKA only accepts children with characteristics of dyslexia, and it is a replicable model for educating these children using public dollars while delivering an excellent, science-based education.

Most children enter LKA in the third grade or later. At enrollment, students cannot read at grade level. All but a few of the 202 current students who were tested upon initial enrollment in first through fifth grades could not identify, sequence, and/or form all letters. That is, almost all the students entering those grades at LKA did not have skills a first grade student should have for reading. Two-thirds of current

Kansas Task Force Makes Dyslexia Recommendations

In 2018, the Kansas legislature created a task force on dyslexia to study research and deliver recommendations for amending the state's dyslexia-related education policies. Led by Kansas State Board of Education member Jim Porter, the task force split its work into four subcommittees that focused on current state and federal law, evidence-based reading practices, preservice and in-service professional development for educators, and screening and evaluation processes.

House Bill 2602 stipulated that the task force's 16 voting members represent specific groups: the House and Senate, elementary school teachers, the Kansas State Board of Education, parents of children with dyslexia, and public universities. Porter noted that several people were not represented, so he invited others to join as "consulting conferees," or nonvoting members. These included a representative from the Kansas National Education Association, a retired special education administrator, and an assistant superintendent from a moderate-sized school district. They added considerable value to the task force's work, Porter said.

The task force met five times to hear subcommittee findings and debate their work. "You have people in the room who have been fighting each other for years," Porter said. Yet each member ultimately agreed on a core idea, Porter said: that the sizable contingent of Kansas students whom teachers report as facing difficulty with reading deserve a quality education.

The task force made its final report to the legislature and the state board of education in February 2019. Their recommendations include school-level screenings but go further. The task force suggests that the state board and legislature modify educator preparation program standards, require an examination on the science of reading, and provide funding to train education professors; build upon professional learning opportunities and dyslexia-specific courses of study; and establish coherent structured literacy programs, a dyslexia handbook, a department coordinator, and an official definition of dyslexia.

The report concludes by recommending the legislature reappoint the task force—with the same members and consulting conferees—so it can monitor and report on progress. Given the good rapport between the task force and legislature, Porter sees this step toward accountability as likely. "It is my hope," he said, "that we should have reports from these groups by the summer and begin implementing by next year."

— Joseph Hedger

a. 2018 Legislative Task Force on Dyslexia, "Report of the Legislative Task Force on Dyslexia to the 2019 Kansas Legislature" (2019), http://www.kslegresearch.org/KLRD-web/Publications/CommitteeReports/2018CommitteeReports/legis_tf_dyslexia-cr.pdf.

students had failed a core academic class, were recommended for retention, or were held back for at least one grade before attending LKA.

As part of an evaluation for dyslexia, students' decoding ability is assessed. Dyslexics have difficulty in pulling apart a word into phonemes, which are the smallest unit of the spoken word. For example, "cat" has three phonemes. The phonemic deficit in dyslexia is addressed as LKA

teaches decoding skills. Level literature read out loud and vocabulary are a part of the curriculum as well. Academic content knowledge is delivered in a format in which children can learn the material, in contrast to a traditional approach that bases instruction on textbooks they cannot read.

The Comprehensive Test of Phonological Processing (CTOPP) measures the phonemic deficit.¹¹ Of all students entering LKA, 71

percent scored in the poor or below-average range of the test, which indicates they lack the basic skills necessary to read. Other tests measuring decoding skills yielded equivalent findings. After instruction at LKA, 92 percent of students either increased their CTOPP score or maintained an average or higher score. More than 90 percent increased reading accuracy. The goal is for the children to read as fluently as possible, which depends on grade of entry and the severity of a student's dyslexia.

Teachers at LKA have a comprehensive understanding of dyslexia that allows them to integrate decoding instruction and use level literature simultaneously. They understand, for example, how dyslexia may be presented in a struggling reader but that there are often difficulties with spelling, math, writing, and word retrieval. LKA teachers help children become better readers, writers, and mathematicians.

The teachers at LKA also realize that standardized tests do not accurately assess what students with dyslexia know or how much their fluency has improved over time. Even though the Every Student Succeeds Act still requires such tests as part of a state's accountability measures and does not allow for providing assessments tailored for dyslexic students, LKA teachers look at metrics specific to dyslexia to assess academic student growth and understanding of academic content. Serious discussions at LKA occur about teaching to the yearly high-stakes standardized test versus spending the time to teach a dyslexic to read, write, and understand math. The standardized tests are multiple choice and language heavy, which can be incredibly difficult for the student with dyslexia, who otherwise may be very intelligent. Failing scores on the tests feed the mistaken notion that these students and their teachers are incompetent or not trying hard enough.

A state or local educational system that groups all children into one classroom with one curriculum and framework is not realistic. Accountability in these systems should build on current science and reliable data. States and districts should use measures that gauge students' progress in decoding and improvement in reading fluency, which are necessary for comprehension. Such an approach would recognize that students who are working exceptionally hard to decode written text will struggle with comprehension and accuracy when they

are faced with myriad multiple-choice questions.

LKA is a replicable model for producing confident students who perform to the best of their ability. Having teachers who understand the paradox of intelligent students who struggle academically is key. When a student with dyslexia does not progress in a subject as expected or fails a standardized test, teachers with this understanding will change the way material is delivered rather than doubling down on go-to reading comprehension strategies or dismissing the student as lazy or unintelligent. With instruction based on current science, LKA has created a learning environment in which students with dyslexia enjoy school with their self-esteem intact while progressing academically, regardless of family income. Society will reap the added benefit of reducing the risk of crime and incarceration for students who may otherwise have lost hope for a better future. ■

¹Emilio Ferrer et al., "Uncoupling of Reading and IQ Over Time: Empirical Evidence for a Definition of Dyslexia," *Psychological Science* 21 (2010): 93–101; Bennett Shaywitz et al., "Issues in the Definition and Classification of Attention Disorder," *Top Language Disorders* 14 (1994): 1–25; Janet Lerner, "Educational Interventions in Learning Disabilities," *Journal of American Academy of Child Adolescent Psychiatry* 28 (1989): 326–31.

²Kenneth Moody et al., "Prevalence of Dyslexia among Texas Prison Inmates," *The Journal of Texas Medicine* 96, no. 6 (2000): 69–75.

³See Sen. Bill Cassidy and Laura Cassidy, M.D., "Addressing Dyslexia Is Key to Reducing Criminal Recidivism," *The Hill* (December 19, 2018).

⁴A Resolution Calling on Congress, Schools, and State and Local Educational Agencies to Recognize the Significant Educational Implications of Dyslexia That Must Be Addressed and Designating October 2018 as "National Dyslexia Awareness Month," S Res 680, 115 Cong, 2018.

⁵Ibid.

⁶Emilio Ferrer et al., "Achievement Gap in Reading Is Present as Early as First Grade and Persists through Adolescence," *Journal of Pediatrics* 167, no. 5 (2015): 1121–25.

⁷Bennett Shaywitz et al., "Disruption of Posterior Brain Systems for Reading in Children with Developmental Dyslexia," *Biological Psychiatry* 52 (2002): 101–10.

⁸Joel McFarland et al., "The Condition of Education" (Washington, DC: National Center for Education Statistics, 2018), 96.

⁹R.K. Olsen, "Genes, Environment and Reading Disabilities," in R.J. Sternberg and L. Spear-Swerlings, eds., *Perspectives on Learning Disabilities* (Boulder, CO: Westview Press, 1999).

¹⁰National Institute of Child Health and Human Development, National Institutes of Health, "Report of the National Reading Panel: Teaching Children to Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction," Reports of the Subgroups (Washington, DC: U.S. Government Printing Office, 2000).

¹¹CTOPP is an oral test. For example, a student might be asked, "Say doughnut. Now, say doughnut without 'dough.'"

U.S. Senator Bill Cassidy, M.D., (R-LA) was elected to the Senate in 2014, and Laura Cassidy, M.D., is co-founder and chair of Louisiana Key Academy (LKA).