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Research to Policy Brief

Minnesota Center for Reading Research

Making Sense of Dyslexia



What is Dyslexia?

The American Psychiatric Association (2000) defined dyslexia as reading achievement that:

- is significantly below expected levels based on an individual's age and education,
- interferes with every day activities that involve reading, and
- is low because of reasons other than sensory disorders such as visual impairments.

The term "dyslexia" is a medical term. Schools do not use the term "dyslexia." Instead, special education laws use the term Specific Learning Disability (SLD). Experts do not agree on how to best identify SLD. Most school districts have historically relied on identifying a discrepancy between intelligence (IQ) and achievement (reading), but many are attempting alternative approaches described below.

What Does the Research Say?

- Students identified with SLD in reading usually have decreased activation and neuronal connectivity in the left hemisphere of the brain that affects the psychological processes that underlie reading such as (a) phonological awareness, (b) orthographic skills, (c) working memory, and (d) rapid automatized naming.
- Students whose parents have an SLD are eight times as likely to have a learning disability themselves.
- Students with SLD in reading benefit most from explicit and systematic instruction in the basic code for reading along with strategies for reading comprehension.
- Early intervention can prevent many of the negative effects of SLD from occurring.



How Do Schools Know if a Student has an SLD in Reading?

The ability/achievement discrepancy approach measures IQ and reading scores and identifies SLD when the reading scores are significantly below IQ. This is usually referred to as the IQ/Achievement Discrepancy approach and was commonly used for almost 30 years, but has been criticized because it:

- o is unreliable,
- o represents a “wait to fail” model because IQ/achievement discrepancies do not typically emerge until 3rd or 4th grade,
- o does not link to instruction and intervention,
- o does not differentiate between students with learning disabilities and low readers without learning disabilities,
- o lacks evidence that the IQ/Achievement discrepancy was due to a psychological processing weakness,
- o relies on IQ test scores, which are heavily influenced by cultural and racial biases.

Two alternative approaches to identifying SLD have become prominent.

1. Response to intervention (RTI) uses a process of monitoring student response to research-based interventions to identify SLD. Proponents of RtI argue that this process allows for early intervention and identification and has led to improved student outcomes. However, RTI also has problems when used to identify SLD including,
 - o no clear criteria for the level of nonresponse required to identify SLD
 - o the potential for use of non-validated decision-making frameworks
 - o the potential to identify all low achieving students as SLD
 - o not capturing the critical unexpected underachievement concept of SLD

2. The Pattern of Strengths and Weaknesses (PSW) approach to identifying SLD relies on measures of cognitive processing to identify specific areas in which a student struggles and

and demonstrates relative strengths. Some scholars advocate for use of this approach because measures of cognitive processes correlate well with reading, but researchers have identified many concerns including,

- o unreliable diagnoses,
- o diagnosis decisions that were approximately equal to chance,
- o the potential to significantly over-diagnose students with dyslexia,
- o resulting data not being useful for intervention or improving student learning,
- o limited knowledge about psychological processing deficits and their impact on student achievement.

Policy Recommendations from Research

- ✓ Policy makers should examine the United States Department of Education's definition of a Specific Learning Disability (SLD) to be sure that it reflects current knowledge and research.
- ✓ Intensive individualized interventions, and measuring student response to those interventions, should be part of any process to diagnose SLD.
- ✓ There is little reason to continue the IQ/Achievement discrepancy approach to diagnosis and policy makers should consider abandoning it.
- ✓ Continued educational research funding is needed to examine psychological processes and their utility in understanding and diagnosing SLDs.
- ✓ Continued educational research funding is needed to examine the impact of the use of response to intervention (RTI) models in diagnosing dyslexia and other SLDs.
- ✓ State and local school districts should lay out the decision-making frameworks within an RTI model and should require a predetermined criterion to interpret nonresponse.
- ✓ Because many of the criticisms of IQ/Achievement Discrepancy apply to the Patterns of Strengths and Difficulties approach to diagnosing SLD, schools should not use this approach until additional research is conducted.
- ✓ School districts should not require administration of an IQ test as part of the SLD diagnosis unless there is a reason to suspect limited or changed aptitude as a potential cause for learning difficulties.

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