

Reading Disabilities - Historical Context, Types of Reading Disabilities, Validity of the Discrepancy Model, Changing Criteria for Reading Disability

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The concept of reading disability, while widely accepted, is not clearly understood. Traditionally, reading disability has been defined as unexpected underachievement characterized as a discrepancy between achievement and intellectual aptitude, despite adequate opportunity to learn and in the absence of sensory difficulties or cultural deprivation. This discrepancy is typically defined operationally in terms of a difference between IQ and scores on a test of reading achievement. The specific discrepancy necessary to qualify varies from state to state. Children who conform to this definition qualify for special education services under the learning disabilities label, whereas children who do not conform do not qualify, even though they may experience serious difficulties in becoming competent readers. While some low-achieving students who do not demonstrate the stipulated achievement-aptitude discrepancy may receive supplemental reading instruction in compensatory education or dyslexia programs, in many locations they receive no extra attention. A small number of schools qualify students as having learning disabilities based on professional judgment rather than IQ-achievement discrepancies, so that these students can receive reading assistance.

Historical Context

The concept of unexpected underachievement has appeared in the literature since the middle of the nineteenth century. The term *learning disability* (LD) first appeared in 1962, when Samuel Kirk applied it to unexpected difficulties in the areas of language, learning, and communication. In 1969 the Learning Disabilities Act made special education services available to students with LD. The category was reaffirmed in 1975 with the passage of the Education for All Handicapped Children Act. The concept of LD remains basically unchanged in the current authorization of the Individuals with Disabilities Education Act (IDEA). In the early twenty-first century more than 80 percent of students classified as learning disabled are identified as having a reading disability.

Types of Reading Disabilities

The most widely recognized and researched reading disability is associated with difficulty with reading single words. This type of difficulty is the most pervasive characteristic of dyslexia. These single-word reading problems are thought to be based on an underlying phonological processing core deficit. Persons with dyslexia experience great difficulty in applying the alphabetic principle to decode words quickly and efficiently. The result is that decoding is labored, fluency is poor, and comprehension is negatively affected.

A less common and poorly researched reading disability is associated with poor language comprehension. While much less frequent than decoding difficulty, this disability affects some persons who have normal phonological processing skills but who demonstrate difficulty in formulating main ideas, summaries, and inferences. This difficulty is demonstrated when listening to, as well as reading, text.

A third group of students who experience great difficulty in learning to read are those who experience both decoding problems and language comprehension problems. So far, little research has been conducted with these students. It can be argued, however, that students in this last category have the greatest needs and the most severe reading disabilities.

Validity of the Discrepancy Model

Educational leaders and researchers have been questioning the validity of the definition of reading disability in terms of an aptitude-achievement discrepancy. Proposals under study in the early twenty-first century would identify a student as having a reading disability based on the growth of reading performance across time in response to quality instruction.

A convergence of research evidence has called into question the validity of the discrepancy models. Three groups of researchers have conducted meta-analyses of studies addressing the question of differences between students identified as having LD and other struggling readers.

Doug Fuchs and his colleagues examined seventy-nine studies that compared poor readers with and without the LD label. Across studies, and across many substantive and mythological variables associated with the studies, the mean-weighted effect size describing the difference between students identified as having LD and other low-achieving readers was 0.6 of a standard deviation. In other words, the LD-identified students on average performed worse on measures of reading than other low-achieving readers. The effect sizes were more pronounced on timed reading tests, and they were larger for students at higher grade levels. Interestingly, the difference between LD and low-achieving readers was greatly diminished when analyses were run only on researcher-identified LD samples, thereby eliminating school-identified samples. This finding suggests that schools identify LD as the lowest of the low performers.

The difference between school-identified and researcher-identified LD samples is an important distinction. Researchers are much more likely to apply IQ-achievement discrepancy criteria. Schools, however, are more likely to identify students who have IQs in a range that identifies them as having mild mental retardation or to use professional judgment, despite lack of a discrepancy, to label students as having LD. Thus, it would seem that schools are actually identifying more seriously impaired readers as having LD than strict application of the definitions would permit.

Looking specifically at the validity of discrepancy models, Maureen Hoskyn and H. Lee Swanson (2000) coded nineteen studies that met certain criteria for the definition of the IQ-discrepant and IQ-consistent (nondiscrepant low-achieving) groups. Hoskyn and Swanson found that students in the two groups had minimal differences on measures of reading and phonological processing and had larger differences on measures of vocabulary and syntax.

Similarly, K. K. Stuebing and colleagues, in another study, coded forty-six studies that clearly defined groups of readers as IQ-discrepant or IQ-consistent, with the primary research question focusing on the validity of the use of aptitude-achievement discrepancies to categorize struggling readers. The researchers found little support for the validity of discrepancies for the classification of students as LD. There were negligible differences between the IQ-discrepant and IQ-consistent groups on measures most closely associated with reading. Taken together, these three syntheses suggest that there is little basis for continuing to base qualifications for special services on current discrepancy models.

Beyond the fact that the current model lacks validity, it tends to favor students with higher IQs, as it is difficult for a student with a low IQ to exhibit achievement scores low enough to qualify for the discrepancy. There is at best, however, a questionable relationship between IQ and the way students respond to early intervention. Five studies conducted between 1997 and 2000 found no relationship between IQ and intervention outcomes. One study found a small relationship between IQ and outcome on one of three outcome measures. David Francis and colleagues found in 1996 that IQ-discrepant and IQ-consistent groups had no significant differences in progress from kindergarten through high school.

Further, the use of the exclusionary criteria in the current definition of LD can result in the withholding of services to students from culturally different or impoverished backgrounds. Given the strong correlation between oral language development and socioeconomic level, it is likely that many children from impoverished families would experience difficulties with phonological processing and in language comprehension. Further, factors associated with inadequate instruction, emotional disturbance, and poverty may actually cause differences in neurological and cognitive development that lead to severe learning difficulties. The current definition of LD makes it all too likely that students experiencing difficulties stemming from these situations will be excluded from receiving services.

Another problem with using a discrepancy model to identify reading disabilities is that it is very difficult to detect discrepancies early. Typically, children have to fall behind before the discrepancy is identified. Thus, the use of IQ-achievement discrepancy is inherently a "wait to fail" model. The problem with waiting until a child fails is that reading problems become intractable as children age. Thus, it is important to begin intervention with children very early.

Changing Criteria for Reading Disability

Rather than focus on whether a child has an IQ-achievement discrepancy, current proposals recommend that determination of reading disabilities be made based on an examination of response to quality intervention. This response to treatment would be determined using ongoing, frequent measures of word recognition, fluency, vocabulary, and comprehension, as well as subskills that correlate strongly with reading development, including phonological awareness (the ability to blend and segment sounds in speech), rapid naming, and phonological working memory.

A convergence of research indicates that early intervention in the primary grades is effective in preventing reading problems for most children and that, for those who continue to experience difficulty, the depth of the reading problem can be greatly reduced. In their 2001 analysis of response rates to interventions in five studies, G. Reid Lyon and colleagues estimated that the number of students experiencing serious reading problems could be reduced from about 20 percent to 5 percent or less of the school population through quality early intervention.

A Three-Tiered Approach to Intervention

Current proposals recommend a three-tiered model of reading intervention. On the first tier, classroom-level general education instruction is improved. Research suggests that this first level of intervention is adequate to reduce substantially the large numbers of struggling readers. For example, in 1998 Barbara Foorman and colleagues found that classroom-level explicit instruction in phonological awareness and the alphabetic principle as part of a balanced approach to reading brought the majority of students in grades one and two in eight Title I schools to national averages. More recently, in 2002, Joseph Torgesen and colleagues demonstrated that the vast majority of struggling first-grade readers in middle-class schools could attain above-average reading performance through quality classroom reading instruction alone.

Children who still experience difficulty after quality classroom-level instruction move into the second tier, which incorporates more intense interventions presumably delivered within general education in small groups. There are many examples of successful secondary-level interventions. In 1997 Torgesen and colleagues identified children in kindergarten who had poor

phonological awareness. By second grade, intervention brought 75 percent of these children to grade-level reading. Frank Vellutino and colleagues in 1996 identified middle-class children with very low word recognition skills at the beginning of first grade. After one semester of intervention, 70 percent were reading at grade level. After two semesters, more than 90 percent were at grade level.

In the three-tiered intervention model, only after these two levels of interventions have failed would a child be considered reading disabled, requiring tertiary intervention. Tertiary intervention is typically described as having greater intensity and duration than secondary intervention. Presumably, at this point special education services would be provided.

Under this three-tiered model, there would be provisions for (1) early identification of children at risk for reading failure, followed by (2) carefully designed intense early reading instruction incorporating an emphasis on systematic, explicit instruction in alphabetic reading skills balanced with meaningful experiences with authentic texts and writing, and (3) continued support beyond the initial acquisition of reading skill to ensure continued academic growth into the upper grades. Thus, all students who are identified as at risk for possible reading problems would be provided with intervention within general education. Only children who do not make adequate progress would be considered for a reading disabilities label. This label, however, would not be based on IQ-achievement discrepancies, but rather on inadequate response to intervention.

Quality of Intervention

The success of the three-tier model hinges on ensuring that instruction at each of the three levels is of high quality. As a result, it would unify general, special, and compensatory education services into one adaptable unit and would require that all teachers involved in the process be provided with ongoing staff development and mentoring in the critical content of effective reading instruction. This critical content includes instruction that supports the development of phonological awareness, letter knowledge, and concepts of print in emergent readers. This type of curriculum ensures acquisition of accurate and quick word recognition skills and increases the speed and ease of reading connected text. Instruction linked to extensive engagement with authentic literature gives students the opportunity to learn new vocabulary and to acquire strategies such as making inferences, identifying main ideas, and summarizing text.

Lingering Questions

Although there is substantial research evidence regarding effective models of reading intervention at the primary (classroom) and secondary levels, it is not yet known whether a three-tiered reading intervention model can be consistently implemented to identify students in need of more intense special services. Further research is necessary to validate this model as practical and accurate. A primary question focuses on how such a model based on instructional practices that have been validated in research projects can be "scaled up" to be implemented successfully within many school contexts.

Research has focused on classroom-level and secondary-level intervention that impacts the majority of students. What is much less clear is the content of tertiary instruction. Little has been done to follow up and provide additional services with the few children who have made poor progress in secondary intervention models. Thus, there is little guidance as to what will be required to promote adequate progress among this small set of impaired readers.

Likewise, the bulk of research on the prevention of reading difficulties has focused on the most common type of reading problems, those associated with phonological processing problems. Much less is known about how to appropriately intervene with students who experience language comprehension problems.

Conclusion

Knowledge about reading disability is evolving. It is clear that many students struggle to develop reading competence. Although most of these students exhibit common characteristics related to difficulties in processing the sounds of language, researchers have yet to satisfactorily answer the question, "When is a reading difficulty a serious reading disability?" The current practice of identifying reading disability according to a discrepancy between IQ and achievement scores, although relatively easy to implement, has the potential to underidentify many students who need special services. A more useful way to identify reading disability may be through the evaluation of a student's response to well-implemented, quality intervention. Much remains to be learned, however, regarding the implementation of this type of identification system.

See also: [LEARNING DISABILITIES, EDUCATION OF INDIVIDUALS WITH; LITERACY AND READING; READING, *subentry on* COMPREHENSION](#).

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