

FEATURE ARTICLE

Down the Garden Path and Into the Poison Ivy: IQ and LD

By Linda Siegel, DLD President

In *New Times for DLD Newsletter* (September 2009 issue), Lee Swanson presented a case for the relevance of IQ in the assessment of and intervention for learning disabilities. I will review his arguments and present a counterargument: that IQ does not provide useful information for the assessment or remediation of learning disabilities.

Swanson poses two questions: (1) How important is intelligence to the assessment of LD? and (2) How important is IQ to evidence-based instruction?

Intelligence and the Assessment of LD

In defense of his position, Swanson cites the fact that the magnitude of the correlation between reading and IQ scores is statistically significant. As Tunmer (1989) has noted, the magnitude of the correlation between parental income and reading is the same as the correlation between IQ scores and reading. Therefore, it could be argued that we should just use parental income instead of IQ. Why go through the time and expense of giving an IQ test? Obviously, the argument that a particular variable is correlated with reading does not seem to be sufficient justification for using it. In addition, the fact that one variable is correlated with another does not indicate that they are causally related. IQ has a moderate correlation with achievement but this does not mean it is a determinant or cause of achievement.

Swanson claims that the IQ score predicts reading. Actually, this statement is a misstatement; IQ scores are correlated with reading scores but this does not mean that they predict them as a prediction involves some difference in time and not concurrent variables. In addition, knowing the IQ score or parental income tells you nothing about the reading, spelling, or arithmetic problems of an individual child. It should be noted that unless the correlation between variables is 1.00, one cannot use the score on one variable to predict exactly what the score on the other variable would be.

Is There a Difference between Low Reading Achievement and Dyslexia?

One critical question in relation to the IQ score and assessment is the issue of whether there are differences between children with a reading disability (also called individuals with dyslexia) and children who are poor readers (also called children with low reading achievement). Individuals with dyslexia have a discrepancy between their IQ scores and their reading scores such that their IQ scores are much higher than their reading scores. The low achievers have IQ scores that are not very different from their reading scores and thus there is no discrepancy. Stuebing et al. (2002) conducted a meta-analysis of studies comparing the dyslexics and low achievers and found that there

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EDITOR:

William J. Therrien, University of Iowa
newsletter@TeachingLD.org

CO-EDITOR:

Shannon Gormley-Budin, Buffalo State College
newsletter@TeachingLD.org

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was little evidence of significant differences between these two groups. This finding suggests that there is little benefit in using a discrepancy definition of a reading disability and that low achievement is sufficient. Although other meta-analyses (i.e., Fuchs, Fuchs, Mathes, & Lipsey, 2000; Hoskyn & Swanson, 2000) have provided some indication of differences between the two groups, as Stuebing et al. (2009) have noted, these meta-analyses failed to differentiate between variables used to define the groups, (such as IQ) on which one would expect to find differences and variables closely related to reading (phonological awareness) on which there were no differences.

Swanson notes that Fuchs et al. found moderate effect sizes in favor of low achievers without a discrepancy between IQ and achievement. Again, this type of analysis does not provide information as to the variables on which the differences occurred and how these differences relate to the reading process or the provision of appropriate intervention.

It is also important to note that dyslexics and poor readers did not differ in reading comprehension (e.g., Siegel, 1992, Siegel & Smythe, 2008). It would be reasonable to think that the higher IQ scores of the individuals with dyslexia would lead to better comprehension but that was not the case. Their problems with basic processes of decoding and word recognition (both accuracy and fluency) seriously interfere with their comprehension.

One might argue that the pattern of errors might be different for the low achievers and the individuals with dyslexia. If there were differences in pattern of errors, then these differences may have some consequence for remediation. However, there are no empirical studies that have found this type of difference.

Meta-analyses conducted by Hoskyn and Swanson (2000) and Stuebing et al. (2002) do not support the differentiation of IQ discrepant and low achieving children when IQ is outside the range associated with mental retardation.

IQ scores and response to intervention

The second question pertains to how important an IQ score is to predicting response to evidence-based intervention.

However, in a recent meta-analysis, Stuebing et al. (2009) reviewed studies that examined the extent to which IQ scores predicted response to intervention. They found that IQ scores accounted for no more than 1% of the variance in predicting response to intervention. Variables related to reading, such as phonological awareness, were significantly more predictive of response to intervention.

Throughout the years of discussion on the role of IQ scores in learning disabilities, there is a fundamental distinction that has been largely ignored. This issue is the question of clinical vs. statistical prediction. Data can be presented to show that IQ is correlated with reading achievement. However, the presence of this correlation tells us nothing about an individual.

Specific vs. General Learning Disabilities

“Few children with achievement difficulties need an IQ test to rule out mental retardation” (Stuebing et al., 2002, p. 48). Stuebing et al. make an important point; IQ scores may be useful in some cases but they question the need for a routine administration of the IQ test.

However, even this use of IQ scores is not without problems. What cut-off score should we use? Does this mean that we have to give every child an IQ test? Let us assume that we say that an IQ score below 70 means that we cannot say that an individual has a specific learning disability but instead has a general intellectual deficit. I am sure that many would argue with that and propose a different cut-off. Even if we could agree, which IQ score do we use? Suppose an individual has a Verbal IQ of 55 and a Performance IQ of 84 and a Full Scale of IQ of 69? Is that a learning disability (given that some score on an achievement test is low?) Suppose that the Full Scale IQ is 68 but the score on the Raven Progressive Matrices is 85? Which is the real IQ?

There is some level at which the issue is not a learning disability in reading or mathematics but the learning of basic life skills. There are obviously some people who have problems in academic areas and who have severe cognitive and/or physical deficits and/or severe psychiatric problems. Individuals with these types of problems need different types of interventions, in addition to intervention and accommodation for any learning disability that they might have.

Where do we go from here?

The use of the IQ score in individual cases has led us down the garden into the poison ivy. If the IQ score provides little information about the nature of the learning problem and if it does not predict response to intervention, why do we need it?

To extract the field of learning disabilities from the poison ivy, we should abandon the IQ altogether and just provide accommodations and remediation to any person who has difficulties with reading spelling, writing, and/or mathematics using an RTI model. We should assess reading, spelling, writing, and mathematics skills regularly. If a child has a low score, then he or she should get remedial help and accommodations. If an adult has a low score, then he or she should get remedial help and accommodations.

Beware the poison ivy

The time has come to leap out of the poison ivy patch, run for the anti-itch medication, learn what poison ivy looks like and what its consequences are and avoid it.

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