



## **Interventions Strategies for Children with Reading Difficulties**

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Over the past 20 years, we have learned an enormous amount about the cognitive, linguistic, and neurophysiological factors that can make learning to read very difficult for many children. During this same period, our knowledge of methods for teaching these children to read has also grown significantly. The scientific study of interventions for children with reading disabilities has led to discoveries in three core areas.

First, we are learning more about the instructional strategies that are most effective with these children. For the majority of both younger and older children, interventions are more effective when they provide explicit and systematic instruction in phonemic awareness and phonics along with many opportunities to practice these skills in meaningful reading and writing tasks. We also know that children with reading disabilities (or dyslexia) require intensive instruction. These children usually require a period of daily one-on-one or small group instruction to "close the gap" with their same-age peers. We also are learning that skillful teaching involving careful "scaffolding" of learning tasks is also very helpful in building the reading skills of children with reading difficulties.

Surprisingly, it may also be true that instructional methods can vary on a number of other dimensions and be equally effective, as long as they contain the important core elements. For example, in one recent study, two methods that differed significantly in the amount of time devoted to various instructional activities produced essentially the same strong outcomes for 3rd to 5th grade children with severe reading disabilities. In one method, teachers spent the majority of the time teaching phonemic awareness and phonics using single word activities, some time teaching sight words, and minimal time reading text. In contrast, the teachers implementing the other method spent the majority of their time on supported reading of text, slightly less time on learning sight words and the least amount of time on phonemic awareness and phonics. Even with the differences in the way time was spent during instruction, the improvements in reading accuracy and reading comprehension were the same for both groups!

Another group of researchers looking for the most effective intervention strategies are studying the effects of interventions on the way the brain processes information during reading tasks. Several studies have shown that before intervention, the areas of the brain activated during reading tasks are quite different in reading disabled children when compared to children who read normally. After interventions that produce significant improvement in the reading skills of the disabled children, their brains function much more normally than before the intervention. These studies are showing that, even in children as old as late elementary and middle school, the brain remains relatively "plastic" in adapting to effective reading instruction.

Still another group of studies on intervention have addressed questions about the extent to which it is possible to prevent reading disabilities in young children or remediate them in older children. For example, studies employing a variety of intervention methods ranging from explicit instruction from

classroom teachers, to supplemental instruction delivered individually or in small groups by intervention specialists, have shown that we can reduce the number of children who finish first or second grade with serious reading difficulties (i.e., below the 30th percentile) to anywhere from six percent to less than two percent. These studies have also shown that small group instruction can be just as effective as one-on-one instruction in preventing reading disabilities.

Finally, we have learned that older children with severe reading disabilities can dramatically improve their reading skills if they are taught for a reasonable amount of time with intensity and skill. Most of the children in these studies have been in late elementary school when the interventions were provided. Dramatic improvements in phonemic decoding, text reading accuracy, and reading comprehension have been demonstrated in studies that have provided anywhere from 70 to 130 hours of high quality instruction individually or in small groups. Although children in these studies also become more fluent readers, their relative gains in fluency are not nearly as dramatic as those in other areas of reading skill. One hypothesis suggests that children who are allowed to seriously fall behind in reading development during the early years of elementary school cannot readily make up the enormous disadvantage in reading practice and experience that accumulates during several years of reading failure. Thus, one of the enduring costs of waiting to provide interventions to children with reading disabilities until they have demonstrated failure in reading for several years is a relative deficiency in reading fluency that may be very difficult to overcome.

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