Executive Functioning and Dyslexia Symptoms

Research has shown strong correlations between dyslexia symptoms and deficits in short-term memory and executive functioning. It is undisputed that children with specific reading disabilities have deficits in phonological processing and storage, and there is evidence to suggest that they also experience deficits in central executive functioning.

(Pickerling, 2006b; Swanson, 2006; Vellutino et al., 2004) and (Landerl, Bevan, & Butterworth, 2004; Palmer, 2000; Siegel & Ryan, 1989; Swanson, 1993, 1999)

"The term executive function describes a set of cognitive abilities that control and regulate other abilities and behaviors. Executive functions are necessary for goal-directed behavior. They include the ability to initiate and stop actions, to monitor and change behavior as needed, and to plan future behavior when faced with novel tasks and situations. Executive functions allow us to anticipate outcomes and adapt to changing situations. The ability to form concepts and think abstractly are often considered components of executive function"


Executive functioning is vital for successful adaptation and performance in real-life situations. Executive functioning oversees the "slave" process of working, or short-term, memory. The executive functions help to organize and apply what is in the working memory. That being said, if there is a weakness in the executive functioning, along with difficulties with short-term memory in relation to storing and retrieving information, then the ability to connect the visual and auditory representation of the phoneme and grapheme is further impeded by knowing how to apply that information in sequence and in relation to reading. It becomes very important, since the information comes into the senses first and second to working memory, that all of the senses be used to help store the initial input of information.

"Children develop their abilities from the bottom up, with the wiring together of sensory stimuli. Those that fire together are more likely to wire together into efficient neural representations. This linkage is enhanced with repetition, and representations are mapped into functional modules in a distinct fine-grained fashion. The more perceptually salient, consistent, frequent, multisensory, and emotionally reinforcing the input, the stronger the map becomes”. This is the main reason that any remediation given to someone with dyslexia symptoms must be a multi-sensory, sequential approach.

("Current Status of Treatments for Dyslexia: Diagnosis and Treatment of the Child with Dyslexia," Medscape.com)

Once the information has made it into short-term memory, then those with executive-functioning issues will need to be given some clear, sequential steps to be able to apply the information to functions like reading and spelling. Discover Intensive Phonics teaches in a sequential, multi-sensory fashion with simple strategies given to help apply the information learned. All of these components are so important for effective reading remediation and long-term success.