

Learning Disabilities: The Complexity of Learning

By Margaret Thornton, M.Ed.

If your child has been diagnosed with a learning disability, you've probably been bombarded with terms like dyslexia, auditory processing disorder, non-verbal learning disability, sensory integration disorder, dysgraphia – the list is endless.

The crucial thing to know is that these terms and labels for learning disabilities can change, sometimes according to the latest trend in education, and sometimes according to the professional examiner's background or field of expertise. Terms and labels are used in order to give a diagnosis that succinctly describes a set of symptoms, but the problem with this approach is that it doesn't tell the whole story. Students with learning disabilities usually display an array of symptoms that don't always fit neatly into one category.

It may be more helpful to look at learning disabilities in a different way. Learning disabilities are simply problems with the way the brain receives and processes information. We all receive information through our senses, and in the case of academic learning, the two senses that are primarily engaged are seeing and hearing. With a typical child, if they've read and/or heard something in class – they've 'learned' it. This isn't the case for a child with a learning disability. Learning is actually a very complex process; one which we take for granted. There are four things that have to happen when we learn something. In a child with a learning disability, there can be a breakdown in any one, or all, of these four areas:

1. Input
2. Integration
3. Memory
4. Output

Take problems with 'input'. A child may have difficulty with visual or auditory discrimination – or being able to tell one sound or shape from another. They may have a depth perception problem, or have an auditory lag – a delay in the amount of time it takes to process words that they hear. Or, they may have a sensory integration problem, which means that information coming in through the nerve endings, (tactilely), or through the muscles (proprioceptively) is distorted in some way, being either hyper or hypoactive.

After they have received information, the brain has to integrate it, or put it in order and have it make sense with all the other information that's already there. But a child with a learning disability may not be able to sequence or organize the information properly. They also might have trouble with abstract thinking, or making connections between new and old information and generalizing from one setting or situation to another.

After information is received and integrated, it has to go into the brain's short and long-term memory banks for later retrieval. Information is stored in memory in the form of *schemata*. Think of *schemata* as a house with many rooms; each house representing a broad concept. A house that represents "school" may have rooms which contain topics like 'friends, school of fish, preschool, homework, etc. Ideally, schemata are able to accommodate new experiences and new information. Children with learning disabilities sometimes put things away in the wrong room, (or wrong house!) producing retrieval problems.

After the information has been received, integrated, and stored in memory, attending school requires that the student produces output. If a child has a fine motor skill, language processing or a word retrieval problem, output is going to be a big challenge for them. Their papers will be messy and disorganized, they may write very slowly and be unable to produce the words they need to both speak and write their thoughts.

Although this is a very simplified explanation of just some of the things that may interfere with a child's learning, you can see that learning is a complicated process. Children who suffer from learning disabilities usually have more than one area where their brain is not processing information in the most efficient way. So many different combinations of things can go wrong from 'input' to 'output', it's very difficult to lay the 'learning disability' at the door of one word like "dyslexia".

So, try not to pay as much attention to the label for your child's set of symptoms as to identifying the specific areas that are a challenge for your child. Then work with your team of professionals to remediate the deficits and/or help the child learn strategies in order to compensate for the problem areas. Although the rate and volume of learning may vary, *all children* can learn. Let's find a way to make all children successful in school.

Margaret Thornton M. Ed.

Head of School

Summit Academy