How Do Children Learn?

By

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I remember my first experience learning to ski. I thought I'd never be able to do it. In contrast, and as a parent, I continue to be impressed at how quickly children seem to learn new things. If the truth be told, however, and despite my own reservations at learning new things, we never stop learning - our whole life is a learning experience.

For children, of course, the learning process is of paramount importance. Over the past ten years, significant advances have been made in the understanding of learning development of children. The focus is moving beyond ‘what’ we learn and ‘why' we learn, to appreciate ‘how' we learn. Learning is to be understood as a rational process but also a biological, perceptual and emotional process, and children develop learning capabilities through the stimulating all these sensors. Children develop, or ‘progress', in their learning capabilities as their bodies and minds grow, and, thus, it is possible to talk of learning development stages.

I propose that children's intellectual aptitude progresses over a spectrum of capability, and that it is possible to perceive learning as the process of increasing intellect. How children learn, accordingly, is fundamental in developing children intelligence.

Learning is a function of the brain. Through interaction with the environment, the brain receives information from the 8 sensory systems of the body and by processing, categorising and storing information the brain creates memory, and knowledge.

Intelligence is something we develop through learning as the brain is given both opportunity and stimulation. Sheena Reynolds, Learning Development director with the British Institute for Learning Development, explains: “The brain, as the most complex organ in the body, with some 100 billion cells and has an infinite capacity to learn. In order to learn,” she says; “a child needs to be both calm and alert. They also need just-right interaction-learning opportunities to suit their stage of development. A child also needs to be ready to learn. That is, it is no good trying to get a child to read or write if their mind and body is not ready for such activity.”

The fundamental problem with mainstream school education has been the focus on developing performance (reading, writing, maths, comprehension) without first

developing learning capabilities. High-level functions, such as writing, drawing, language, and reasoning, are dependent upon the development first of low-level functions and the integration of sensory systems of our bodies. Primary to this development is the tactile system (the sense and system of touch).

The tactile system functions before a baby is even born. As an embryo develops, its outer membrane surrounding the brain and the spinal cord, becomes our skin. As the largest organ of the body, our skin continues, after birth, to sense the world around us and act as the outer-membrane of the brain.

As our first language, touch is essential to our development. We learn through what we touch. Thus, an infant requires a range of physical experiences of movement, shape and form in order to develop knowledge of their world and the skill to use their bodies in the world around them.

Our skin senses pressure, temperature, texture, pain, vibration, movement, shape as well as differentiating between soft and deep touch. Over time, we learn by perceiving information and interpreting it to build up habits of response in our activities. Where there is poor and inadequate information, the sensory process malfunctions, and our learning is impaired, and so are our capabilities. Thus, there is a direct link between our perception and the development of intelligence.

We learn to hold and control a pencil because we can feel the pencil, and through it, the paper, and can plan out what we are doing by mapping and coordinating our activities in writing and drawing.

Yet, the way children learn, is different from boys and girls. From the time a baby is born, male and female brains are different. Indeed, from 6 to 7 weeks after conception, embryos designed to be male receive a ‘hormone bath' of testosterone which influences the development of the brain. The difference in the brain of boys and girls means that

boys and girls learn differently and have different learning needs and this has a profound affect upon their learning capacities and development.

In general, girls have better connection between right and left brain thinking and thus develop communication skills, including their reading and writing abilities, much earlier than boys. On the other hand, boys tendency to excel at certain skills such as problem solving, maths and science which is directly linked to how their brain is hardwired and to the presence of the hormone, testosterone.

The difference in the brain of boys and girls has a profound affect upon their learning capacities and development. For a variety of developmental reasons, when compared to girls, boys are 6 times more likely to have learning difficulties than girls. Michael Gurian, in his book *The Wonder of Boys*, points out that in the US, from elementary grades through to high school, boys receive lower grades than girls. Eighth-grade boys are held back 50% more often than girls and by high school, boys account for two-thirds of students in special education classes.

But boys are not inferior, just different. Accordingly, the way they learn, and, their readiness to learn, is different. At the age of 6 or 7, when children start serious schooling, boys are 6 to 12 months less neurologically developed than girls. They are especially delayed in what is called fine-motor coordination, which is the ability to use their fingers carefully and to hold a pen or scissors. And since they are still needing ;gross-motor' development, they will be itching to move their large muscles around. Boys have 30% more muscle than girls and therefore their senses seek to move more than girls to flex their muscles. Boys fidgeting in class and roaming around the room is just their bodies trying to find expression - not them being naughty children.

Yet, where a child has trouble orientating and interacting with their environment, or if one or several sensory systems are not functioning properly, learning is impaired.

Sheena Reynolds reports that there is probably as many as 10% of children in schools across the UAE experiencing learning difficulties. “Studies in learning problems conducted in the UK have suggested that at least 5% of children in school are affected by learning difficulties while studies in the US have put the figure at some 15%, but based on our experience over the past 3 years in Dubai, the figure is probably as high as 10% for the UAE,” she says.

However, having a learning difficulty is not a sentence: It is not a life-long condition that can't be helped. A learning difficulty is often the outcome of a dysfunction in the sensory integration network of the body and children with learning difficulties can receive attention to correct or mitigate the underlying condition.

The term ‘learning difficulty' describes a range of conditions and is used differently in different countries. Here, the term is used to describe general learning problems that stem from delay in a child's development. Many times, learning difficulties are the result of poor sensory integration of information-input and communication in the brain. When information is ‘sensed' by the brain, it needs to be organised in order for a plan of action, or response, to take place. Sometimes children can experience a traffic-jam of sensory information that needs to be sorted in order for the brain to function properly and allow the child to increase their learning capabilities. Sensory integration therapy seeks to correct this dysfunction.

Children with learning difficulties can have average to above average intelligence but display a gap between their ability and their achievement. The issue of ‘how' we learn is that much more important for children with learning difficulties.

Creating the right environment for learning, and appreciating the importance of movement to neurological development, raising the question of whether there is something that parents can do to help their children to be more receptive and perceptive. “They can certainly take steps to help prepare them for class”, says Sheena. “First, children need their rest. Getting about 10 hours sleep each night, doing some reading or creative activities before bed, all help children get the rest they need. Second,

appreciating that movement is good for children. Lots of play, as well as getting children to do as many things as possible and avoid others doing things for them will develop both fine motor skills and levels of self reliance. And, third, getting children to eat nutritious food and low sugar content foods and drinks before bed and before going to school."

Parents, teachers and therapists, in appreciating the learning process, can accelerate the learning process and help children overcome learning difficulties. Children with learning difficulties can be helped by seeking understanding the level a child has reached in their development and processing capabilities, and then providing the right development interaction to promote the learning process.

Because boys learn differently to girls, and to try and help boys through school there needs to be some radical changes in the philosophy of education to take into account the neurological developmental needs of children. Having said that, there are several things teachers and their schools can do on a practical level to improve learning environments for boys. First, look for ways to bring more energy into the classroom. As a rule, children are supposed to be quiet and compliant in class - which is not the natural tendency for boys. While many teachers already do this, it is a good idea to try and bring some fun and excitement into the classroom. For boys, learning needs to be physical, energetic, concrete and challenging. Second, schools could seek to employ more men as teachers as boys tend to hunger for good male examples and male encouragement.

Whether in school or at home, the aim in teaching is to give a child a 'just-right challenge' within their reach and thereby allow the child to succeed, with a direct effect upon their self confidence and self esteem.

Yes, learning is a rational process, as well as a biological, perceptual and emotional process and children learn through a combination of all these sense capabilities.

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