

The Tyranny of the Mother Tongue and Learning a Second Language

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Learning a second language is a difficult thing to do. Why it is so hard to learn a second language is of interest to teachers and parents because for a short critical period of our lives it is not hard at all.

First we have to know a little about brain maps and neuroplasticity. Neuroscientists have discovered that nerves go into the brain and affect parts of it according to the position or their origin, like on a topographic map. It was found that these maps are dynamic, which means if you don't use an area for a while the neighbours will take over the neural real estate. A practiced skill thickens grey matter; a non-practiced one slowly fades away, like a muscle. This means our brains are plastic. They change according to their experience.

Neurons are also competitive and vie for space in the brain maps. Practicing one thing over another gives the neurons involved in the practice a competitive edge and they will expand their tiny little empires, both in space and density.

Next we need to understand the concept of **critical periods**. The critical period for language learning begins at or before birth and continues until somewhere between eight years and puberty. Our children's cortex is so plastic during the critical period that its structure can be changed just by exposing it to new information. For instance, young children pick up words and sounds just by hearing their parents speak without effort. New stimuli cause the brain maps to wire in.

Post puberty we have to work a lot harder to learn a new language. The critical period door has been closed and the era of free learning is over. Merzenich says this is because during the critical period the learning machinery is always on. Babies don't know what will be important in life so they pay attention to everything but when a brain is a little more organized it starts to know what is worth paying attention to.

What is this learning machinery? The *nucleus basalis* is the part of the brain that focuses our attention. This is turned on by Brain Derived Neurotrophic Factor, BDNF. When 'on' it helps us focus and helps us remember experiences. Differentiation and change can take place effortlessly.

If two languages are learned at the same time when we're young, that is during the critical period, they don't really compete. In a bilingual child all the sounds of its two languages share a single large map, what Doidge calls a "library of sounds from both languages". But learning a second language after the critical period for language learning has ended is more difficult because as we age the more our native language has come to dominate the linguistic map space and the second language finds it hard to compete. This is Doidge's "tyranny of the mother tongue".

Another thing to keep in mind is that 'bad habits' are difficult to break or unlearn. A bad habit takes over a brain map and each time we repeat it, grows stronger because it grows physically denser within its place in the brain map. This prevents the use of that space for 'good habits'. Early childhood education is one

of the most important part of school because unlearning is harder than learning. It's best to get it right early, before a bad habit gets a competitive advantage.

What does this mean for schools?

1. Teenagers and adults *can* learn a second language. Given high motivation, time to practice and effective instruction everyone can, but it's hard work, and the chance of speaking the second language without an accent is slim.
2. The language soaks are our primary schoolers. This is the time to introduce second language learning. Effortless learning in our language critical periods means that children will learn more even if motivation and time is less than perfect.
3. Early childhood education is extremely important. When schools are allocating resources Principals need to ensure the lower part of the school is not short changed.

Visit www.derekpugh.com.au for more free information booklets about brain compatible education.



Derek Pugh is an experienced Principal and teacher in both Australian and International Schools. He now runs workshops in Brain Compatible Education for students, teachers, parents and corporate groups worldwide. Workshop participants discover the

latest in neuroscience and why knowledge of the brain is a powerful tool in education; the 'SEWBaD model' of preparation for learning; what brain 'plasticity' means to education; individual learning profiles and how to use them for effective learning and teaching; how to teach or learn efficiently; and models of brain operation and function.

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