

HYDESVILLE TOWER SCHOOL

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'The challenge of learning' and the role of the brain in helping our children develop.

Mr Warren Honey, Headmaster at Hydesville Tower School, Walsall.

As a biologist, I have always had a huge fascination for the brain, but sensed that its complexity made understanding it an unachievable hope. I was genuinely pleased when a friend came home from his medicine degree studies and freely admitted, "The brain is something of a mystery to doctors.", since it allowed me to focus on the organs I could comprehend!

Move forwards 27 years and the awareness of the brain is better understood. As educationalists, this has become increasingly important as we recognise more ways to harness its power, its ability to build memories and to develop new skills. In the future, new discoveries will make us question whether schooling needs to change methodology to better suit the maximal times and styles of learning, and how we can best secure knowledge in the deep centres of the mind. And for parents, this information will challenge us to think about the environment in which we raise our children, and how best to stimulate creativity and imagination, or reasoning and evaluation. We may be some way off "uploading" information into minds, but what seems science fiction today, will be science fact in not too many tomorrows.

Neuroscientists refer to the brain as being "plastic". That may sound derogatory, but it refers to its ability to create new neural pathways and hence, is the basis of all learning. In former times, it was believed that children's brains were exceedingly plastic, whilst adults had lost all hope: after all, you can't teach an old dog new tricks. The child stage of the brain is at its most heightened plastic state, but increasingly evidence is revealing that brain development can continue throughout adulthood. We are all learners.

Connections between nerve cells are called synapses, and these are created whenever a person experiences a new phenomenon. Observing a lesson in Nursery last term illustrated this perfectly, with some children having already formed strong connections for certain phonic sounds, whilst others were in the early stages of making those neural pathways. The adult expertly created a series of fun and varied activities that allowed the children to keep trying these phonics problems in a series of low-stakes tests. No one felt they were being tested, but an expertly-applied level of *challenge* ensured that the pupils were always being stimulated to make more neural connections, and ever-stronger ones. And two days later, I saw one of those children who had been uncertain of his phonic sounds; I pointed at a letter on the wall and was delighted by the immediacy of the hissing snake, stood before me!

Challenge? For some people, the word conjures images of stress. That doesn't seem appropriate for a friendly, family-feel school like Hydesville! Stress is something that negatively impacts learning, with the release of the hormone cortisol triggering a primitive survival instinct: it is hard to learn if your brain is scanning for the impending attack of a predator or panicking about whether sufficient food will be found. Thus, we tread a careful path as educators at Hydesville Tower School. Provide enough challenge for children to move out of the comfortable state and they open the pathways for new synaptic connections in their brain; provide too much challenge or increase the

anxiety around the process, and we risk the stress freezing them and negating the benefits. Lev Vygotsky – the Soviet psychologist – referred to the Zone of Proximal Development (ZPD): an adult can give the child something they can achieve with guidance, and they can then develop the skills and strategic approaches that enable them to do this independently. Our staff are excellent at setting tasks within the ZPD of the pupils to stretch and challenge their learning.

Together, home and school play a huge role in helping your child develop to the full. Their progress is best assured by a combination of challenge and support. Making mistakes and “failing” are not problems in themselves, provided the child is reassured that they are nearly there, even if “not yet”. Motivating the child to keep applying themselves and not give up is key in this process of their learning. Rest assured, we will keep helping them to improve and develop: for our staff, this is the most satisfying motivator of all.