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Creativity - the Biology of Learning – a basic need

<https://wp.me/p92pWp-3o>

Whilst my overall blog theme is that of creativity and whether or not it can influence the achievement of primary age children in the classroom, I am finding some intriguing rabbit trails to follow in the process.

I am currently considering how the brain functions and what conditions are necessary to support learning. I felt that there wasn't much point in exploring creativity properly if, ultimately, my brain was not particularly well wired for it!

The brain is an understandably substantial area of the body to explore and has generated many fields of study as a result; neuroscience and neuropsychology are just two. Gleaning key findings of the brain's function and character is difficult as all are inextricably related.

As a result, there are no nice neat silver bullets to generate clear ideas for teachers and no simple formulae to implement in the classroom. But there are some possible concepts that, have we these in mind, may make a difference in how we view learning. I hope these will become clearer over the next few blog posts.

So, a little bit of basic biology

The brain is a complex structure but at its core is the need to survive. At least 250 million years (1, p49) of hard wiring programme the two oldest areas in our brain, the primitive and limbic systems, to keep us safe and happy.

The pleasure and fear centres in the primitive system (*ibid*) are effectively in charge of, as Andreas Komninos cleverly puts it

“Feeding, Fighting, Fleeing, and... Reproduction (well, we won't use that other f-word here!)(2)

The second area, the limbic system, doesn't occupy a particular area in the brain but is constituted of various structures that are in charge of our “emotional responsiveness, motivation, memory formation and integration, olfaction, and the mechanisms to keep ourselves safe” (6).

The third area, the neocortex, is a relatively new kid on the block, having possibly been around for just 5-10 million years (1, p49-50). It is in charge of our rational being; our intellect, conscious thought and self-awareness (4)

Whilst the neocortex plays a substantial part in how we operate and is the area that will be of main interest in the learning discussion, what needs to be clearly noted is that it can be placed “offline” when the older areas are engaged as “first responders” in keeping safe and secure (3, 5).

As Nigel Nicholson (3) suggests:

“You can take the person out of the Stone Age, not the Stone Age out of the person.”

Whilst that is a very basic and crude summary of the brain structure, and one that may make a proper neuroscientist cringe, what is notable is that our rational brain, the place we aim to influence as educators, will not engage if we do not feel safe and happy.

With that in mind, I took myself off for a walk....

References:

- (1) Zull, J.E. *The Art of Changing the Brain*. (2002) Stylus Publishing: Virginia USA
- (2) <https://www.interaction-design.org/literature/article/our-three-brains-the-reptilian-brain> Posted Sept 2017 Accessed 30/03/2018
- (3) <https://hbr.org/1998/07/how-hardwired-is-human-behavior> From Harvard Business Review 1998 Accessed 30/03/2018
- (4) <https://www.interaction-design.org/literature/article/the-concept-of-the-triune-brain> Posted Aug 2017 Accessed 30/03/2018
- (5) <http://www.neuropsychotherapist.com/the-triune-brain/> Posted Oct 26 2016 by Matthew Dahlitz, Accessed 30/03/2018
- (6) <https://www.neuropsychotherapist.com/the-limbic-system/> Posted Dec 27, 2016 by Matthew Dahlitz Accessed 30/03/2018