

Bored students? Tap into the brain's own reward system!

The idea of 'rewards' is usually associated with two images – the carrot and the stick. Many of us give 'carrots' for anything that pleases **us**: gold stars, smiley faces, praise, good grades, certificates. So we usually reward what **we** find pleasant.

Neuro-scientific research shows, however, that rewards of that kind are likely to achieve pretty much *the exact opposite* of what we want to achieve.

Key findings about the brain:

- Learning is physical, and whenever we learn something, the brain changes. There is no learning without brain change.
 - The brain reacts to content that is relevant, in other words is seen as important by the student. If it is seen as important to the students' lives, it contributes to their survival – and that's what the brain's interested in.
 - The brain needs to be 'in control'. 'No outside influence or force can cause a brain to learn. It will decide on its own. Thus, one important rule for helping people learn is to help the learner feel they're in control.' (James Zull)
 - Emotions play a key role in learning – release of certain chemicals (dopamine, adrenaline, serotonin and others) makes growth of neuronal networks possible. Zull stresses that the brain changes physically when we learn, and states that the 'change is most extensive and powerful when emotion is part of the learning'.

- The brain has a **fear** system and a **pleasure** system. The pleasure system is a 'want' system, and the fear system an 'avoid' one.

Learning to identify what we need to have more of and what we need to avoid is crucial to our continued survival. So this learning is powerful, and a punishment/reward system has evolved in the brain, manifested as a sense of fear or a sense of pleasure.

- The pleasure system is the brain's reward centre. *Our brain actively rewards us for understanding, for developing the so-called higher cognitive functions of the brain.*
- We get joy from successful goal-oriented action, hence from learning itself. Brain research shows that we get joy and satisfaction from *physical* movement and *imagined* movement and *anticipated* movement. (This is what keeps us reading a good book or watching a movie. So the reason why we enjoy reading narratives is that we want something to happen, or we are curious about what will happen – the story 'goes somewhere' –*anticipated* movement!)
- So what counts is not so much a learning situation that gives the student pleasure because there's fun all the time. Rather, it's a classroom culture that makes it possible for the students to engage in exploring the language, have meaningful experiences and get enough opportunity to understand and create new language for themselves. This means students become aware they are making progress – which in itself carries the movement metaphor – and then the brain rewards itself with joy. Learning creates joy!

Extrinsic rewards:

- If the student gets an external reward for something they have achieved, this takes away from them the feeling that they're in control. Students who get external rewards for learning will often learn less, because getting the reward starts becoming their main interest, and not the learning. After some time they will try everything they can to get the more rewards, and completely lose sight of their learning. This happens when students cheat in tests, for example!
- Extrinsic rewards, though, are not completely useless. Used appropriately, they can arouse students' initial interest in a subject.

Importance of 'ownership':

- Learning that takes place through personal discovery lasts longer and is more enjoyable for students, releasing as it does more of the reward chemicals into the body. This kind of learning is so very powerful, too, because it creates a sense of ownership in the learner – it's based on the perception 'I did it myself!'
- When we discover something new, when we develop an idea that we feel is ours, and become aware that we are the creators of that idea, we begin to have a sense of ownership of our creation. This helps us develop our thinking skills, in that the process of becoming aware of our ownership means that we engage in metacognition, hence we improve our ability to think about thinking. Plus, we feel joy because we get rewarded by our internal reward system.

Maxims – how to tap into the brain's own reward system:

- Avoid extrinsic awards as much as possible.
- 'Sell' what you are teaching as IMPORTANT for your students' LIVES.
- CHALLENGE your students cognitively – their brain rewards their subsequent understanding.
- Make sure your students get plenty of opportunity for 'anticipated action' – give them enough thinking and reflection time.
- Give students plenty of learning experiences that make them feel they are in control: OWNERSHIP – 'I did it myself!'
- Make sure your students get a good sense of their LEARNING PROGRESS.

Recommended reading:

Kohn, A. (1999) *Punished by Rewards. The Trouble with Gold Stars, Incentive Plans, A's, Praise, and Other Bribes*, Boston: Houghton Mifflin, 1999.

Zull, J. E. (2002) *The Art of Changing the Brain: Enriching the Practice of Teaching by Exploring the Biology of Learning*, Sterling VA: Stylus Publishing.

Zull, J. E. (2011) *From Brain to Mind: Using Neuroscience to Guide Change in Education*, Sterling, VA: Stylus Publishing.