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Motivating Teens through Activating their 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' – gold stars, smiley faces, praise, good grades, certificates – for anything that pleases us.

So we usually reward what WE find pleasant.

But neuroscientific research shows that rewards of that kind often achieve pretty much the exact opposite of what we want to achieve.

There is also strong evidence from research into motivation in non-educational settings (e.g. business) that supports the above claim, as shown by the following quotation from Dan Pink's thought-provoking TED talk 'The puzzle of motivation'.

'As long as the task involved only mechanical skills, bonuses worked as they would be expected: the higher the pay, the better the performance. But once the task called for even rudimentary cognitive skill, a larger reward led to poorer performance.'
 (D. Ariely, U. Gneezy, G. Loewenstein, and N. Mazar, Federal Reserve Bank of Boston Working Paper No. 05 – 11, July 2005; NY Times, 20 Nov. 08)

Key findings about the brain:

- Learning is physical, and whenever we learn, the brain changes. There is no learning without brain change.
 - The brain reacts to content that is relevant to the learner, 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. This is powerful learning, 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 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.
- 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, not the learning. After some time they will try everything they can to get more rewards, and completely lose sight of their learning– which is what happens when students cheat in tests!
- But extrinsic rewards are not completely useless. 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.

Practical suggestions

1: Use 'positive information feedback' rather than praise

In his book *Motivational Strategies in the Language Classroom* Zoltan Dörnyei says that when teachers give '*positive information feedback*' this involves 'positive,

descriptive feedback regarding student strengths, achievements, progress and attitudes. Most importantly, this feedback provides students with information rather than judgements against external standards or peer achievement.’

Examples of positive information feedback (from *Classroom Management Techniques*, Jim Scrivener, Cambridge University Press, 2012, 9. 166):

I really enjoyed reading this story. The part about swimming made me laugh out loud.

This exercise has 10 correct answers out of 10; how do you feel about that?

You answered all the questions with well-written sentences. There were only three small grammar mistakes.

I saw you working really hard to find the answers, but I'm afraid these four are wrong. What help can I give you to make the task clearer?

2: Help students become aware of their learning progress

Make sure students themselves begin to get more and more of a feel about how their learning is going so they become less dependent on teacher praise.

Examples:

- Ways of making students' work and performance public: displays of texts generated by students (on a classroom wall, a school corridor, a website); role play activities (end of term / year) plays
- Posters, wall charts, skills checklists, reading charts that demonstrate the outcomes of students' work, their skills and projects
- Learning journals, diaries and blogs that students write at certain intervals and that help them to become better aware of their achievements.

3: Engage students in goal-oriented action and give them plenty of opportunity for anticipated movement

- Make students more and more aware that learning is a language activity that needs planning, where goal setting is important. We can start by simply sharing at the beginning of a lesson what the goals are, and by referring students back to them at the end of the lesson when we check if we have attained them.

- As a next step, we can gradually involve students in discussing options of how we could get to those objectives in ways that work best for our students.
- Use narratives – James Zull stresses that anticipated movement is probably the most important thing that keeps us reading a good book or watching a movie. ‘Our body isn’t moving as we read, but the story is. 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’ – and while we read, we hope it will go in the desired direction, and we suffer when it doesn’t. And the only thing that keeps us reading – because the only thing that’s going on – is *anticipated* movement!’

4: Help students feel they have ownership over their foreign language

Key elements of developing a feeling of ownership are freedom and choice. Spoon-feeding makes students dependent on the teacher and creates feelings of helplessness. Learning that takes place through personal discovery, on the other hand, lasts longer and is more enjoyable for students, releasing as it does more of the reward chemicals into the body.

Giving students choices – for example:

- Small choices: Do you want a bit of silent time to go through the irregular verb forms before we do the activity? Do you want to practise the dialogues in pairs first?
- Either/or choices: Would you like to do exercise 3 or 4 first? Would you like to act out the role-plays now or at the end of the lesson?
- Invite individual students to make choices (but ensure everyone in class gets their turn): Anthony, shall we work on the text on page 78 in the next lesson, or do more practice on what we’ve been doing today?
- Bigger choices:
 - Give them a chance to decide on a project you want to do with them.
 - Invite them to develop tests for themselves / the class.
- Occasionally, use a ‘Menu for the day’. This is a list of tasks students have to do in a lesson – or in the last twenty minutes of a series of lessons, or indeed in all

their English lessons for a whole week, depending on the time frame you choose.

Points 5 – 7 are self-explanatory, I hope:

5: Use relevant content.

Sell what you are teaching as important to your students' lives (see Kieran Egan's *Romantic Understanding* for background information, and *English in Mind*, Puchta Stranks Lewis-Jones as an example for course-book content that many students find relevant).

6: Challenge your students – but not too much!

7: Use incentives in a light-hearted way and avoid 'If ... then'

We may occasionally (and the stress really is on occasionally!) want to try one of the following strategies based on suggestions by Zoltan Dörnyei.

- Don't engage in 'if ... then' kind of rewards. Offer rewards as surprises after students have accomplished something, rather than promising them incentives if they achieve certain outcomes. In that way, you can show students your appreciation of their achievements without tying a carrot to a task, so they won't get preoccupied with the carrot rather than the task itself.
- Occasionally, let a student choose a reward rather than you deciding what kind of incentive you want to give them. This makes the reward more meaningful. For example, the reward could be that a student can choose an activity they want to do, a song they want you to use, or decide on the content of a whole lesson.

Recommended reading (and watching):

Dörnyei, Z. (2001) *Motivational Strategies for the Language Classroom*. Cambridge University Press.

Egan, K. *Romantic Understanding: The development of Rationality and Imagination*, Ages 8 – 15. Routledge 1990.

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

Pink, D. 'The puzzle of motivation'. A TED talk
http://www.ted.com/talks/dan_pink_on_motivation.html

Puchta, H. J. Stranks, P. Lewis-Jones, *English in Mind 2nd edition*, a course-book for teenage students. Cambridge University Press, 2011.

Scrivener, J. (2012) *Classroom Management Techniques*. Cambridge University Press.

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.