THE TUTORIAL FOUNDATION DAY SCHOOL JANUARY 2020

Learning Bulletin

Supporting our school ethos and vision for learning

Secrets of the teenage brain: a psychologist's guide for teachers

If being a teenager is hard, teaching them is harder. Here are four insights into the adolescent brain – and how it can inform classroom practice.

Teenagers think differently to grown-ups – they are more likely to take risks, be sleepy, misread emotions, give in to peer-pressure and lack self-control. Thanks to advances in technology, we have been able to peer inside the teenage brain and see more clearly how it works. So what have we discovered? And how can teachers use this information to help young people navigate the challenges of growing up and getting an education?

Let's play a game. I will give you £5 for free. In a bag in front of you there are blue and red tokens. You don't know how many tokens are blue and how many are red. If you draw out a blue token, you double your money. If you draw out a red, you lose your free £5. Would you do it?

This was essentially the question posed by researchers to teenage and adult participants. They found that when the odds of success aren't known, teenagers are far more likely to gamble.

The authors of the review take pains to point out that "adolescents' greater involvement than adults in risk-taking does not stem from ignorance, irrationality, delusions of invulnerability, or faulty calculations." So where does it come from?

Professor Sarah-Jayne Blakemore's TED talk on the subject has been viewed more than 1.7 million times. Her research found that during adolescence, the pre-frontal cortex – the area of the brain associated with self-regulation, conscious decision-making, memory, judgment and insight (among other things) – is still developing. Teenagers, therefore, do not have the self-control to not take risks, even if they know something is risky.

Teaching tip: Teachers could tap into teenagers' risky mind-set to help them do better at school. Taking risks and choosing difficult tasks is one of the benefits associated with having a growth mind-set. If teachers guide this risky behaviour by encouraging pupils to take chances in a safe and secure environment, the students could challenge themselves more.

One of the biggest barriers to taking risks is a fear of failure. This can be overcome by facilitating an environment where students know mistakes won't be mocked or criticised.

This resource looks at how we can help develop a growth mind-set.

During her teenage years, musician Adele almost got excluded from school for continually turning up late. She said: "I wasn't doing anything. I wasn't bunking, I just couldn't wake up." But research shows that a good night's rest is essential for

learning: students who consistently get a good night's sleep get better grades.

The National Sleep Foundation suggests that teenagers need more sleep (8-10 hours) than adults (7-9 hours). Most adults start to get sleepy at about 10pm. This is because there is an increase in the sleep hormone, melatonin, at around this time. But this increase happens later in teenagers, meaning they don't feel tired until later. As many students have to get up before 8am, this means there is insufficient time to get the necessary hours of sleep.

Teaching tip: Young people may not have enough time to get the sleep they need, but that does not absolve them of their sleep responsibilities. Discuss the importance of sleeping well in class – try talking about common sleep mistakes and tips for getting a good night's rest.

Research carried out by Dr Deborah Yurgelun-Todd and others suggests that because the pre-frontal cortex is still developing, teenagers rely more on their limbic system (which acts more like an instinctive reaction) when reading emotions.

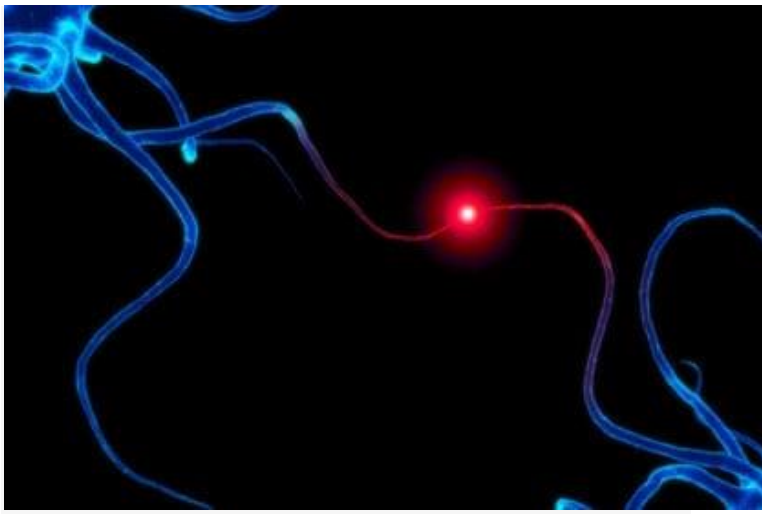
In a test, adults were shown a picture of a person's face and had to choose whether the emotion expressed was fear, shock or anger. All the adults correctly identified the look of fear, whereas only about half of teenagers got the right answer. One possible reason for this disparity is that a teenager's limbic system is less accurate than an adult's pre-frontal cortex. The limbic system also elicits an increased emotional response, so teenagers are more likely to misread an emotion and overact while doing so.

Teaching tip: There is no quick solution – time and patience are required. Be explicit and clear about what you mean and help students improve their self-awareness. This is a helpful factsheet about pupils' meta-cognitive skills (the ability to analyse how you think).

Teenagers have less self-control

When working with teenagers, it can often feel as if they have no self-control whatsoever – if they think it, they say it (or do it). Research suggests that this reduced self-control is most pronounced in heated situations (which is exactly when you need it).

This is not only down to the developing pre-frontal cortex (which is associated with impulse control), but also due to enhanced activity in the part of the brain that seeks out novelty and reward.



Why memorising facts can be a keystone to learning

Teaching tip: Self-control can be improved but it is difficult. One option is to limit distractions during times when concentration and memory are needed and when tensions are running high, for example, during revision periods. Talk to your students about what distracts them (it is a good idea to make students put their phones away) and try to reduce these factors as much as you realistically can.

A final thought...

Being a teenager is hard. You face life-altering exams at a time when your brain is going through huge changes. While they have a responsibility to manage their own behaviour, by understanding the changes and challenges they face, teachers can guide their practice to help them navigate this as happily and successfully as possible.