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Neuroleadership

Neuroscience, leadership and learning

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What are your thoughts on leaders and learning? Is a leader's role simply to tell and do, or is it just as important for leaders to help others learn? When you're helping people learn, you're 'messaging' with their brains, so it may be useful to understand a little of the psychology and neuroscience of learning.

The first step to effective teaching is something all leaders do, which is to inspire. When learners are inspired they'll do much of the learning themselves, and if they're not inspired, then 'teaching' becomes as painful as drawing teeth.

Neuroscience is of increasing interest to everyone, partially driven by the increase of information available. There are books, TV programs and even films looking at how a one-kilogram mass of specialized cells drives our beliefs, emotions, behaviors and lives. More students are studying psychology, and psychology graduates are a highly employable group, so more managers, leaders and organizations will understand and value the evidence and measurements from the disciplines of psychology and neuroscience.

What do you already know about the neuroscience of learning? Building on what you already know is easier than starting from fresh because you already have a connection to information in your brain that you can hang new information onto. So spend a few minutes before reading further to think about what you already know.

Emotions drive our behavior and actions because they are a faster way to process information than to take the slower, cognitive (thinking) route. If you've read Daniel Kahneman's book, *Thinking, Fast and Slow*, you'll recognize that we have two thinking styles and tend to use the faster style driven by emotion, habit and learned behaviors partially because it's less physically draining on our brain's resources. Your brain uses about 20 percent of your energy resources, whereas active working memory can use up to 75 percent of blood glucose.



What creates an inspired learning state and how do you help yourself and your colleagues get there?

Fear or Stress

A certain amount of trepidation often promotes learning. Fear is a strong tag for memory – if you've been frightened you probably won't forget it. However, stress increases adrenaline and cortisol levels, which are useful for action but not necessarily for peak mental performance. A heightened sense of awareness is useful for learning, but cognitive performance will drop off if the level is too high. Provoke a

certain amount of discomfort or challenge to increase attention by posing problems, creating slightly puzzling situations and taking people out of their comfort zones.

Tell emotional stories about what could potentially go wrong as a useful way to introduce a topic and stimulate interest without overwhelming a learner. Show the possible unfortunate consequences if certain procedures aren't followed. However, balance that emotional tug with an exit strategy so people are aware of the action to take to 'escape' from the fear or possible loss, and that exit strategy can be knowledge or skills to learn in order to avoid the situation in the future. If people feel too stressed, they will not be in a receptive state for learning because they'll want to get away from that stress, so think about the environment and how to improve someone's sense of security so they feel alert but not threatened. Setting up training rooms like a classroom or an intimidating boardroom may increase stress, so find more social ways of arranging your furniture such as café style or small clusters of chairs when you want people to learn.

Curiosity

Did you know curiosity is addictive? When you're curious you experience a spike of dopamine, which is a key factor in motivation; we will repeat behaviors that give us that dopamine fix. How can you increase curiosity for yourself or for those you teach? A simple way is to ask people to guess the answer to a question; this has been shown to improve learning whether the person guesses correctly or not. The key to making the learning 'stick' is to ensure there are no penalties for an incorrect guess and to show the correct answer immediately after the guess. Other curiosity-inducing techniques include telling a story or relating an incident that seems puzzling or surprising and helping your listeners work towards finding the reason why and how the situation occurred, and creating games or puzzles where finding the solution teaches the knowledge or skills you want to share.

Relaxation

While it may seem counter-intuitive, part of the learning process involves not appearing to do anything. As well as actively consuming information or practicing skills when you're learning, you also need time to reflect, build neural connections and let your brain change its activity. When you're actively processing information, the dominant brain waves are beta waves, but when you relax, the alpha brain waves start to dominate. Alpha brain waves are associated with increased creativity.

You can help people achieve more relaxed brain waves with quiet spaces – both physical and mental – in which to

reflect, relax and slow down. Some music can induce alpha wave activity, so experiment with music of around 60 beats per minute. Short naps and/or guided visualization also boost cognitive performance, particularly during a naturally quiet time such as the lull after lunch. Some people find that going for a quiet walk stimulates connective thinking. Changing a small habit every day also promotes creative thinking: drive a different route to work, brush your teeth with a different hand, walk up the stairs instead of taking the escalator.

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Some leaders like to boast of their ability to function with very little sleep, and perhaps they are exceptions to the rule, but for most of us, significant things happen when we sleep. During the day information flows from your cortex into your hippocampus, a brain area which is crucial for processing memories. When you're deeply asleep a neurotransmitter, acetylcholine, seems to reverse the direction of the flow of information between your hippocampus and cortex; this is important for fixing or consolidating your memories. So if you don't sleep well, at the very least you are likely to be less effective at creating long-term memories, which is clearly a crucial part of learning. So next time someone boasts that they can operate on only three hours' sleep, it might just be worth wondering how well they learn.

Connectedness

One of the hormones that's released when we're 'social' is oxytocin; sometimes called the nurturing hormone. In an increasingly global world, connecting with other people sometimes becomes more difficult and the proliferation of technology-enabled learning can sometimes leave learners isolated. Fortunately, that same technology can also bring people together even if they can't be in the same physical space, so using social media as a learning tool may have significant benefit.

If you're a leader or working with leaders, help people learn by creating useful emotional environments that kick-start their learning process. ●