LEARNING WITH THE MIND IN MIND

We live in a VUCA world (volatile, uncertain, complex, ambiguous) in which the digital revolution requires different and new competences and skills. Not only digital literacy and technological knowledge become important, but also other competences such as an entrepreneurial and creative mindset and the ability to be resilient, and innovative. Lifelong learning is crucial to ensure the productivity and competitiveness of companies and organisations and helps to deal with the shortage on the labour market. It is clear, lifelong learning is essential. In order to ensure that learning has an effective impact, it is important to have insights in the role of memory and the way the brains remembers information. I had the opportunity to discuss this interesting topic with Dr Sam Mather, who will be presenting a keynote on Thursday **27 January 2022** during the L&D Talks.

WHO IS DR. SAM MATHER?

Dr Sam Mather has a BA (Hons) in Business Studies, an MSc in Learning and Performance Management and a doctorate in Occupational Psychology and Neuroscience, has a unique combination of skills that allows her to bring neuroscience solutions to individuals and organisations. Dr Mather teaches at Henley Business School on the Applied Management and Leadership degrees and Masters in Leadership programmes. In addition, she is a frequently requested speaker and has published two books based on her research on how organisations can create safe, brain-friendly environments that enable employees to develop, build and maintain their Resilience and Innovation, to be able to Switch their thinking enabling them to Evolve (RISE).

We live in a world that changes and evolves very quickly. How important is (lifelong) learning today?
Learning is nowadays essential to every organisation or company. But I think that it is not only about learning new things, but rather knowing how to (un)learn, because the things we are learning today will be quickly outdated. People should be able to pick something up that works for now and then quickly drop it and pick something else up that works in the future. We really have to be able to unlearn things as quickly as you can learn things - and that's not easy. It's also about being innovative and creative when you have to do something that you don't know, adapting learning to new circumstances and opportunities, etc. We are talking about learning agility, that has become a very important competence on the work floor which importance will only grow in the future.

A key issue for L&D experts is to understand how memory and the brain work. Can you explain from a neuroscience perspective how learning works and what happens in the brain when you learn?
If you want to learn something, a change has to take place. You need to unlearn the old and relearn the new. In order to do that, you need to, of all things first, have the resilience and the willingness to deal with the change. Learning means you have to think differently, be innovative and creative, you need to switch the way you work and in doing that you evolve, because learning allows you to increase your comfort zone and it allows you to become more confident and comfortable in your abilities.
From a neuroscience perspective, learning something new is creating new neurons and connecting new neurons together. If you are learning something completely new, the brain connects two new neurons. But if you have to do something completely different than you've learned before, you have to disconnect neurons and connect them to different ones. So there is physiologically a change in the brain. And this process takes energy and effort. Think of when you bought a new car. In the old car you use a specific stick to put the indicators on. But in the new one, the stick is somewhere else. So for the first two weeks with your new car you are putting the window wipers on instead of the indicators, until you relearn this change. And for this change you need a willingness, because it takes effort, and when you're not paying attention you will go back to putting the window wipers on.

The function of learning is to put information into memory so that it can be accessed when required at a later date. What are the conditions for the individual learner to learn?
First of all you need to you have to look after yourself physically because learning is a physiological process. in the sense that you have to have slept well, have eaten well, etc. Sleep is a good example: research has shown that learning with breaks in between, particularly the sleep break, is very beneficial and a lot of learning is being processed as we sleep. While sleeping, the hippocampus is going over what happened in the day and is storing memories. And if you don't get enough sleep, you miss the opportunity to transfer this learning into memory.
You need to enable the brain to maximise its ability to learn by ensuring that it is not using its valuable energy and resources on things such

as protecting itself and avoiding failure. In other words the 'threat response' in our brain needs to be quiet, in particular for learning.
Some people prefer learning at home, because they feel less threatened, safer. They feel at home with their cat on their lap, slippers on and a nice cup of tea. They feel comfortable and therefore their brain is in a safe space which is why some people say they learn better at home because they are not distracted by things that happen at the office.
Ironically, this doesn't work for everyone. Some people struggle to concentrate at home because, well its home, not work.. This is because of the way the brain works. In order to maximise memory efficiency, the brain thinks in "chunks". When we move from one "chunk" to another, it is called an event horizon. Crossing an event horizon can transition from one state to another, such as from "home mode" to "work mode"..
An example being: I leave home in the morning, I get in my car, I drive to work, I arrive at work. The drive between home and work is the event horizon that I cross and it prepares you mentally for work. The reverse happens when you get home. You start winding down, so when you get home, you are already a bit more relaxed. For people who have strong event horizons it's very difficult to learn from home, because this is the place where the brain is being programmed to say: "This is where you switch off and chill out". So there is not one universal way of learning, learning happens whenever it is right for the learner.

Leaders and learning & development professionals need to carefully consider the role of memory and the brain when creating learning programmes. Can you share some insights that are essential to make learning in an organisation or company 'sticky' and transferable from the training room to the workplace?
Psychological safety is something that leaders can create and a learning organisation is one of the key ways to create this safe environment. When I'm talking about feeling safe, I'm not talking about having a nice and comfortable stress free life. It's about not having to spend mental resources on pretending to be somebody you are not or withholding views and opinions because you are afraid of what the consequences will be. It's about having the freedom to use all of your mental energies on things that are constructive and allow you to be your best self. Until now, studies on Psychological Safety focused on it being the role of the leader and team to create an individual's psychological safety. However, my research discovered that the individual also has a responsibility, because even the most perfect organisation with the most perfect leader cannot guarantee that a person will learn. There is a role for the leader and a role for the employee to get it right in terms of making sure that the environment is perfect for learning.
Also, an organisation or a company can have a great learning environment, but if the leader doesn't help his people to apply the learning on the work floor, the learning will not be effective and impactful. After all, learning means that you've made new connections in your brain. If the involved neurons aren't strengthened by repetition, the new connections will fade away. So you need leaders who reinforce learning with a growth mindset, who don't criticize failure and who allow people the space physically and mentally to 'play'.
A great leader understands that you don't always get you best ideas during work. A lot of people get their good ideas in the shower or just before/after sleep. This is often when the brain is functioning in the "theta" brainwave frequency.. The theta wave can be a gateway to learning and because you are in a zone in which you are not fully conscious and yet you aren't unconscious. You are not really thinking about anything. It's here that neurons that might not normally come together, connect because you are not consciously driving and controlling your thinking. In doing so, you get that "Aha!" moment. Sitting at work in front of a laptop with a leader asking you to be creative or innovative, won't do the trick, because you are not in the right space to do so. But if you can take time out to 'play', in the broadest sense, and are given the time to solve the problem by not focusing on it, that's where the great ideas pop up and that's where the learning and the connection happens.

It is clear that many factors have to be taken into account for learning to be effective and impactful. How can the various preferences of different learners be accommodated in practice?
It is clear that leaners have different preferences. For instance, some prefer to learn from home, others prefer learning at work, some prefer to learn alone, others learn best when in a group. If a leader or a learning & development professional wants to provide learning for everybody in the company, there are many preferences to take into account. It would be amazing if all those different preferences could be taken into account and the same content was created in different forms. From a business perspective, that's obviously very expensive and in most cases not really practical. So it's an interesting challenge. I think what needs to be done is to structure the learning in a way where people get small bites of information in a main group. When we have a satisfying and beneficial interaction with other people, the brain rewards us with oxytocin, also known as the cuddle hormone. It's a hormone that gives you a nice, fuzzy and warm feeling. So when you have great interactions in the classroom, you go away feeling really good because your oxytocin is high, so it's a great start for learning. Afterwards learners can go their own way and process the content further, either from home or at work, either alone or in small subgroups, either offline or online and then come back to the initial big group. Keeping in mind the attention spans that are dropping, short collective enforced learning in a main group alternated by different options to embed or build on the learning, are a very effective and efficient way of facilitating learning. We are talking about a blended approach, that gives the opportunity to repeat certain important content and at the same time to work in depth. ■

BOOKS BY DR SAM MATHER

RISE: The science and practice of creating and developing your cognitive resources for resilience and wellbeing

RISE Together: A leaders' guide to the science behind creating innovative, engaged and resilient employees

Scarlet Coopman is didactic project manager at d-teach online learning, an international expertise centre on online, hybrid and blended learning. D-teach does this by advising on online training, providing online coaching, and developing effective e-courses. D-teach has also launched an online academy on digital didactics. Scarlet is an enthusiastic world traveller and (crazy) cat lady.