



headspring
executive development

Metacognition at work:

THE SCIENCE OF LEARNING IN BUSINESS

A joint venture of



Metacognition at Work was written by Catherine Bolgar, a freelance business writer and former editor at The Wall Street Journal, and edited by Paul Lewis, Headspring's editorial director.

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1

Part One

How we Learn

The Basics of Metacognition

2

Part Two

Planning your Learning Journey

Monitoring your Progress

Evaluating Results

Six ways to enhance metacognition
in the workplace

Introduction

It's hard to recall a time when senior executives had to rethink so many long-standing assumptions. Facing such challenges as digital transformation, AI, demographics, changing working cultures, new geopolitical risks and much more, today's decision makers need to be continually learning and relearning as efficiently as possible to survive and thrive. Therefore, how executives learn is as important as what and why they learn.

Undoubtedly, most experienced executives have been learning all their lives. The chances are that they were good students. After that, they were successful enough professionals to rise to senior levels within the organisation. But unlike the college student, the company executive will rarely need to memorise facts and pass tests. Rather, he or she might need to learn how, for example, to restructure a division, redefine a business model, adopt new technology or enter new markets. And where one learns will be different too. As well as traditional classroom-style settings, learning can occur in meetings, at conferences, even during impromptu conversations and more unconventional settings.

Learning in a corporate setting therefore is about acquiring new information and skills in a durable, practical and flexible way that helps solve strategic

or day-to-day problems, identify opportunities and make decisions. The executive's 'learning to learn' or 'metacognition' challenge is to identify the processes and techniques that best enhance that learning with a bias towards decision-making and action. Companies have an important role to play here: by enlisting L&D, HR, line managers and corporate leaders to foster a culture of learning and deep metacognitive practices within the organisation.

This paper tries to frame the 'learning-to-learn' challenge and embed ideas within Headspring executive's own unique approach to executive development. It is aimed at all executives, especially senior leaders charged with developing strategy, L&D professionals looking to optimise learning within the organisation, and educators who design and deliver programs.

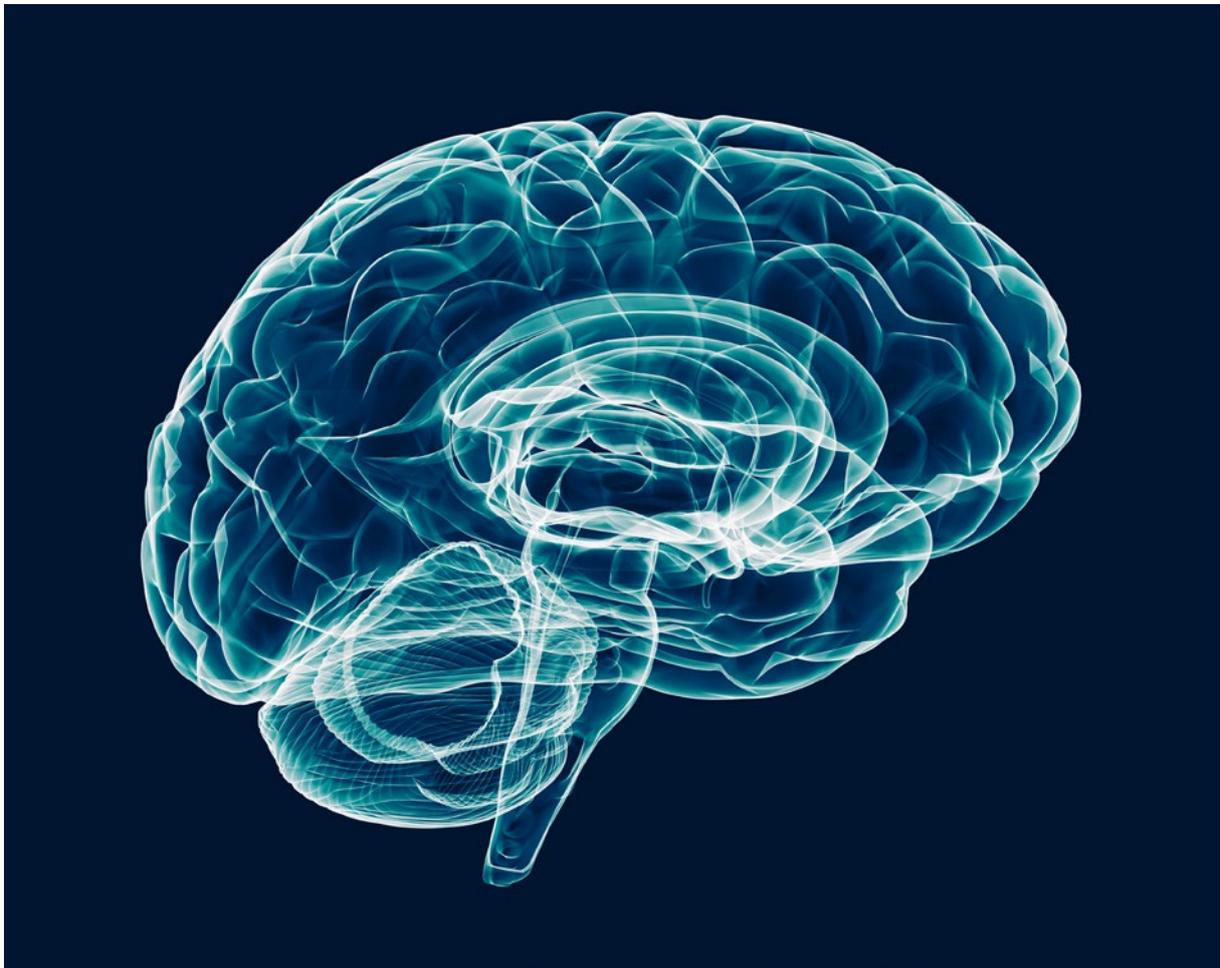
Drawing on academic research, Part 1 provides a basic awareness of the neuroscience behind learning and asks why so often we find learning so difficult. In Part 2, we provide a practical learning-to-learn-strategy that includes planning your learning journey, monitoring progress and evaluating results.



HOW WE LEARN

In simple terms, the brain has different parts for different functions (although in most complex functions multiple parts are activated). The prefrontal cortex deals with rational thinking, willpower, creativity, and learning. The limbic system, which includes amygdala, hippocampus and other areas, is mainly interested in keeping us safe, thus creating automatic habits and emotions. The cerebellum controls coordination, balance and procedural learning such as riding a bike or juggling. The hypothalamus links the brain with the body by triggering endocrine system to produce relevant hormones such as adrenalin when we are stressed or oxytocin when we are with those we trust. Each of these areas consists of millions of cells, called neurons. Neurons connect with each other to form neural networks. Neurons have axons -- nerve

fibres or projections of the neuron which conduct electrical impulses. Bundles of axons are like our nervous system's transmission lines. Dendrites also branch out from neurons and receive signals from axons at gaps called synapses. Dendrites are covered with mushroom-shaped protrusions called dendritic spines, which change greatly in size, shape and number and are where synaptic connections occur. These connections are constantly changing though based on how much they are being used - the most 'popular' ones get stronger over time and the redundant ones wither. Also, we form new connections, and subsequently new networks, all the time, creating an unlimited potential for learning and change. That is the cellular mechanism for learning.



1. The Learning Challenge

Our brains weren't made to learn for the sake of it. Learning has evolved as means to help us survive in a changing environment. Learning is a luxury. It requires more energy and time than relying on old, well practiced ways. This presents huge challenges when it comes to executive development. "The way to stay alive was to be right, to be fast, to already know something—the early brain wasn't terribly reflective," says Kathleen Taylor, professor in the Doctoral Program in Educational Leadership, Saint Mary's College in Moraga, California, and co-author of *Facilitating Learning with the Adult Brain in Mind: A Conceptual and Practical Guide*. "This is always in operation, at the lower levels of brain function, but persistent."

The basics of metacognition

At its most basic, metacognition is being aware of how one learns, not just theoretically but during the very process of learning, i.e. going outside ourselves to monitor our progress. The brain is plastic, which means that even adult brains are malleable whether or not we seek to change, and are perfectly capable of learning and relearning. Like a stroke patient who can recover the use of a paralysed arm by repeating exercises, repetition and practice allows the brain to rewire itself.

There are multiple schools of thought about metacognition and about how it works. The term was coined in 1979 by developmental psychologist John H. Flavell, but its roots go back to cognitive psychology in the 1960s, especially a 1965 paper by Joseph T. Hart, "Memory and the Feeling-of-Knowing Experience." The developmental and cognitive theories have mostly stayed separate, but they are starting to overlap since the 1990 work of Thomas O. Nelson and Louis Narens on monitoring and control.

Knowing how our brains function and being aware of how we learn, even as we're learning, is an important process, but not one that can be simply adopted and then applied. "People expect their rational minds to be able to work all the time. That is never the case. Rational thinking, learning and creativity require very large neuronal networks, thus, consume huge amounts of energy. After we do these tasks, we need to replenish our energy and let these networks 'recover'" says Gabija Toleikyte, neuroscientist, lecturer and business coach. "Understanding how the brain works lets us create the best conditions for learning. It enables people to manage their performance and optimise change."



When we repeat something – whether through deliberate practice or unthinking daily routine – we reinforce certain connections and it becomes easier the next time around. Conversely, unused paths or synapses become thinner and thinner and may eventually disappear. If you got good grades in calculus but haven't used it for a few decades, it will take some time to figure it out again before getting easier with more use.

Babies develop from not being able to say anything to full sentences within three years. They are born with the ability to figure out the 800 basic consonant and vowel sounds that comprise human speech. But each language uses only about 40 of those sounds. Through repeated exposure to their mother tongue and perhaps another language or two in their regular environment, they learn to speak one or a couple of languages, but not every language. They aren't adding pathways; they are pruning them.

Don't mourn for the lost synapses though. Studies of autistic children find they have a surplus of synapses and that perhaps their brains were not doing enough pruning. Pruning occurs especially during sleep and makes room for more learning. Indeed, too many synapses may even limit learning potential.

In the case of adults, we want to make new connections or pathways for new learning. Adult brains do it by piggybacking on what they already know, i.e. their experience.

"Adults are different from children in that they have a lifetime of experience and a lifetime of learning that has already created a whole bunch of patterns in the brain," Dr. Taylor says. "We call these the Broadways or Grand Canyons. They exist as a pattern that is resistant to change. Adults learn all the time, but we are resistant to certain kinds of learning." Broadways are like the street in New York, which was originally a cow path and which was so ingrained that it couldn't be moved when the city adopted a grid for other streets. Mental Broadways are the familiar, well-trodden path, but other options are easily available, the way other streets are available in New York. Grand Canyons are deeper and so big that when you're inside you might not even be aware of being in one. Examples of these Grand Canyons are culture, psychology, anthropology. "All we can see is this way of constructing reality," says Catherine Marienau, co-author with Dr. Taylor and member of the leadership team of DePaul University's Center to Advance Education for Adults. "When you have an experience that causes you to see something anew – say you go to a new country – when you come



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back you can see the Grand Canyons. Nothing is different, yet all is transformed."

Over time, we build up established patterns that enable us to be effective in certain contexts, such as the workplace, family, political situations, etc. "These are ways of thinking that we feel safe about because we have established they are how things are. But how things are is constantly changing," Dr. Taylor says. "The brain doesn't like not knowing about something. It feels like a tiger is around the corner."

"There's learning that adds to our storage house of information because we know that knowledge comes from more and more books," Dr. Taylor says. "Then there's learning that can change how we understand what knowledge is and where it comes from. Today for example, 'Google knows everything.' That is a new paradigm, not just more information. Metacognition can move us toward that paradigm shift" towards a new way of understanding a problem or finding new meaning.

A better understanding of metacognition can help us learn by analysing the process and not placing blame for a lack of progress. "I'm often asked why someone is struggling to concentrate, why his or her brain isn't working properly. We have unrealistic

expectations about how our brains work," Dr. Toleikyte says. "Under stress, our mental capacity changes. We are physically not capable of sharp rational assessments of a situation, quick learning, or true connection with others in that state. That has to do with the way energy is managed in the brain. Also, the amygdala, the brain area that detects threat, can temporarily suppress prefrontal cortex in stressful situations. That leads to poor performance, errors, falling back to old patterns even if they are not effective." Dr. Toleikyte claims that embracing metacognition in organisations is crucial "Another challenge for creating an effective learning environment is the neurodiversity - we all have slightly different brains and different approaches will be optimal for our own learning. Thus, the metacognitive approach is necessary if constant learning is required".

There may be good neurological explanations for this. But these mental processes can be managed and harnessed by companies and executives, and if implemented with expertise, care and clarity around purpose, can help solve many executive learning challenges.



2. Learning to learn strategies

For executives striving to develop effective learning habits in their professional lives, they need techniques to help them plan, monitor and evaluate their executive learning.

Step 1. Planning Your Learning Journey

Honest self-assessment

Learning isn't a question of taking a course with an expert who tells us information, which we endeavour to remember. It is a journey, and we the learners - not the instructors - need to be the navigator of our own journey. A good starting point is to think about what you think you know or don't know. "It can be hard to admit what you don't know. Humility is a virtue for the 21st century," says Professor Ruth Crick, author of *Learning to Learn: International perspectives from theory and practice*. "Knowing everything was expected in the industrial era," she adds, but computers have made knowing mere factoids less necessary. Connecting factoids to create a vision is what will count in the future and what will define leaders. "We get executives who are so busy and so driven they are unwilling to let go of control and think about things differently," she says.

one moment to another. Whether it's the names of new colleagues, understanding the complexities of a lawsuit, or how to digitally transform your business, the first step is an honest assessment of what you need to learn.

"When you're learning things at an executive level, your challenge is that every way you look there are impenetrable layers of complexity," says Barbara Oakley, professor of engineering at Oakland University and author of *Learning How to Learn: How to Succeed in School Without Spending All Your Time Studying; A Guide for Kids and Teens*. "You have to nimbly grab the key ideas and realise that even those key ideas are being recommended by people who have their own background and who can have vested interests."

In planning your learning journey, you must be aware from the outset of what might hold you back. Researchers and educators have identified several techniques to help overcome learning hurdles.

Identifying biases

As mentioned, the adult brain connects new learning to previous experiences. Although this means we don't have to 'reinvent' the wheel, it

"Learning is a journey, and we the learners - not the instructors - need to be the navigator of our own journey. Part of preparing for the journey requires an honest assessment of our learning power."

Part of preparing for the journey requires an honest assessment of our learning power. "It's counterintuitive in business, where getting results is what counts," Dr. Crick says. But it allows us to spot the ways we might undermine ourselves. Are we open and flexible or rigid and persistent, and which combination best contributes to learning success? For example, "If we're not good at collaboration and are rigid and persistent, it will be difficult to learn with other people," Dr. Crick says. "We will want to get to the solution before we have figured out what the problem is. We need to address that weakness."

What you need to know can be wildly different from

can also involve a myriad of biases that block learning. Confirmation bias, for example, leads us to seek out information that conforms with what we already believe and to reject new, contradictory information. "It can be rare to find people who are willing to look openly at new ideas," Dr. Oakley says. "People operate on group think. They don't look at facts for themselves. They think they do but they don't because they don't even read things that contradict what they already think is right."

These biases are some of the Broadways and Grand Canyons that Dr. Marienau and Dr. Taylor mentioned (see Part 1). "The brain wants to be



right and to know. It is drawn toward answers. It is drawn toward things that can be bullet points on a slide," Dr. Taylor says. However, some problems have no right answer; they might have several not-bad solutions and the executive's quest is to weigh the good and bad points.

How the problem is framed is important. "If you follow in established patterns, you will frame the problem in the same way as always," Dr. Marienau says. It's the age-old syndrome of the person with the hammer seeing every problem as a nail.

Metacognition can help us step out of these fixed perspectives. Knowing our biases allows us to stop and question ourselves: Does this material contradict my experience; Have things changed such that my experience is now outdated; Is the answer too simplistic? Should I approach the problem differently?

Interestingly, Dr Oakley suggests that those who travelled extensively as children tend to be less susceptible to confirmation bias. "There's a mental flexibility that can arise when you move around

a lot. You can handle the cognitive dissonance between new and old more easily. You are more comfortable not thinking the same thoughts as everyone else," she says.

Assessing cultural and diversity awareness

Strongly linked to the issue of bias is that of 'Cultural metacognition.' This is increasingly important in an interconnected world. "Part of metacognition is thinking about one's own knowledge and thoughts - self-awareness," says Michael Morris, professor of management at Columbia Business School and professor of psychology at Columbia University. "Part is other awareness - thinking about other people's thoughts." For example, a good teacher must be aware of what students understand in order to calibrate the lesson to be where they are.

In a business setting, cultural metacognition is valuable in managing multinational teams and international negotiations. Executives who are culturally fluent can collaborate more successfully because they will communicate more effectively with people from different backgrounds.

“You have a set of rules, and you’re not even conscious of them as rules,” Dr. Morris says. “You think it’s human nature. Then you encounter a different set of rules in another culture, and it’s easy to dismiss them as a weird mentality. But what’s hard to realise is I also have a weird arbitrary set of constructions. Awareness of one’s own cultural assumptions is more important than being aware of others’ rules.”

People with high cultural metacognition tend to be curious and open. But even experienced expatriates can at times ask: “why don’t these people just do it the right way?” as if their home country’s way is the best. “That’s not true awareness of the other,” Dr. Morris says.

If your interactions with people from other cultures often end badly or in confusion, you might need to improve your cultural metacognition. Dr. Morris suggests actively learning the things one might need to know about a new culture. Another tip is to enlist a partner or a mentor. Dr. Morris recalls asking his secretary in Hong Kong to photocopy some documents just before her lunch break. Noticing how unusually upset she seemed at his apparently normal request, he asked a colleague to decode the situation. Lunch breaks, he discovered, were rigidly controlled, and the task would eat into her free hour. “It’s only by having a learning partner that I could understand how I had messed up,” he says.

Finding the right learning environment

When you have established your learning starting point and goals, you need to create a setting that will not undercut your efforts. “We can only learn if we have loads of energy. We can’t learn in survival mode. It means choosing the right time of day, the right place, the right mindset,” Dr. Toleikyte says. Look for a setting that doesn’t set off our survival instincts – where we don’t feel vulnerable. And give your brain a chance to recover and replenish through sleep, exercise and healthy eating. Also, it’s crucial to take frequent breaks to recover during mentally challenging activities if we want to stay sharp and creative. Moreover, sleep and resting time is when the brain gets the chance to process what we have learnt, connects it to previous learning and forms long-term memories.

When choosing the right place, find one without distractions, as these eat up our energy. “The brain has to process something else in the background,” Dr. Toleikyte says. Usually it takes less than a second to get back in focus if we’re interrupted. But if interruptions happen all the time it can waste 20% or more of your time just by switching. Of

course, the time to get back in focus depends on the amount of cognitive processes involved in the task. Some struggle with it more than others, so it’s crucial to embrace individual brain differences for effective learning”.

Of course, for most of us, it is not easy to ignore work-related interruptions for much more than an hour. That may not be such a bad thing because “we have unrealistic expectations for how long we can focus on a task,” she says. In general, we can only focus on brain-costly tasks for four to six hours a day. If we expect to focus for six to 10 hours, we will frustrate ourselves. “The brain will shift focus to something easier, such as constantly checking emails, browsing news or making unimportant calls in order to relax,” Dr. Toleikyte says.

The problem is that we are prone to drift off after 15 minutes or less. Fortunately, we can train ourselves to lengthen our attention spans. It starts with a realistic expectation of how long we can focus – say 20 minutes – then take a break, Dr. Toleikyte says. Gradually lengthen the focus time. That trains our task-focused networks to become stronger and eventually makes it easier to block the distractions.

One helpful approach is the “Pomodoro method.” Named after the tomato-shaped kitchen timer, it was conceived by Francesco Cirillo in the 1980s as a time management technique. It teaches us to be intensely focused, but in sessions that don’t overwhelm our brains. “When you are learning something new and tough, you are inputting that information and creating new sets of links between neurons in the hippocampus,” Dr. Oakley says. “That puts it into long-term memory. But the hippocampus can only take so much information into that buffer. You have to take a break to download it into long-term memory. Focus, focus, focus, then take a break.”

Managing procrastination

Allotting specific times to focus, with breaks, can also help us manage one of the most common obstacles to learning: procrastination. “We procrastinate for multiple reasons,” Dr. Toleikyte says. “Sometimes we’re exhausted and putting too many demands on our brains. Sometimes a task is giving us emotions we find difficult to deal with – fear, anxiety, fear of failure. Procrastination becomes escapism from emotions.”

And sometimes a task is simply too boring. “We haven’t been designed to do things that are boring for us, since they don’t trigger the reward system. It’s why it is so hard to stop procrastinating when

doing repetitive tasks because switching creates pleasure or relief from stress or boredom.” Dr. Toleikyte adds.

The first remedy is to make the task more interesting. We might do so by thinking about the intrinsic reward of completing it, which is the best kind of motivation. Another trick is to make the task more enjoyable; working from a cool café rather than a stuffy office perhaps. And if that doesn't work, then take a break after 20 minutes during which time you reward yourself.

The Pomodoro's system of focus with breaks also allows an intimidatingly big project to be broken up into smaller, more manageable pieces. How to break up a task might not always be obvious, though as Dr. Oakley says simply “focus on it; that's the best way to figure it out. Taking the breaks gives you the bigger perspective and can help you determine where to go next.”

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Using analogies and games

Because our brains want to link to something familiar, metaphors, analogies and stories are useful learning tools. “Neurologists believe that we think metaphorically,” Dr. Marienau says. “We can't not use metaphors. Some are more intentional and some are part of ‘what do I already know’ without putting it into typical words or language.”

Metaphors can help you grasp an idea and later remember it by attaching it to a visual image—the Grand Canyons and Broadways of the brain, for example. If you are learning new information from someone, you can repeat it back to them using a metaphor. They might correct you on how the information is like and different to your example—and that will help you learn nuances around the information.

Metacognition, Dr Oakley says, is “like baking a cake - there's no one ingredient that makes it,” while Kathleen Taylor views metacognition like eyeglasses; “if you have a good pair, you forget that you are wearing them.” In the business context

metacognition may be like looking through a transparent lid onto your brain to observe and then fine tune it in specific situations.

Similarly, look for stories and examples to illustrate a situation. Hearing about inventors or entrepreneurs who created new businesses can help you see that a similar opportunity or pitfall exists in your own industry. To teach executives in Panama about metacognition, Dr. Oakley recalled how Ferdinand de Lesseps, the developer of the Suez Canal, had tried to replicate the strategy he used in Egypt when building the Panama Canal, but failed badly. “I used de Lesseps as a story about how unlearning as well as learning are important,” she says.

Games and exercises provide other effective analogies that learners can deploy. They can help us with metacognitive activities if guided by an expert. They make the point far better than slide presentations because they embody analogical experiences - you are doing something, it's analogous to your learning goal and you can make the click that says this is how my brain works, Dr. Taylor says.

In her workshops, Dr. Toleikyte uses cards with pictures. Participants take turns describing associations the pictures bring. Then the group discusses insights from the exercise, which shines light on different ways each of us think and challenges it. The gaming options are endless: from games that government and businesses use to simulate culture shock and build cross-cultural awareness, to games that require players to confront cognitive biases.

Activities can be as simple as just changing standard procedures. For example, instead of going through the corporate hierarchy, Dr. Crick had a client's employees identify a problem, create an innovative solution, then videotape themselves pitching it to senior leadership. Although excruciating for some, the video forced them to reflect, for example, on “what did I learn, how do I feel, why is this uncomfortable, and how can I improve?” says Dr Crick.

Step 2. Monitoring Your Progress

Executives may recall formal exams in the distant past, which involved cramming facts the night before and hoping enough material stuck. But those facts, figures and dates dissipated over time. Today, that kind of information is stored in one's phone not one's brain and the material needed to master a subject is far harder to assimilate and make use of in the corporate world. Dates are relevant only to better understand a sequence of events.

"Often people who can memorise can retain facts. But facts without understanding is Jeopardy knowledge, like the TV quiz game," says Theo Dawson, founder of Lectica, Inc, a nonprofit dedicated to thinking and learning tools. "Knowledge we use is knowledge that is hard-won. That's the knowledge that makes us more adaptive, let's us create new challenges, helps us deal with problems that don't have 'right' answers."

One of the best ways to know whether you have learned something is to test yourself. Although graded exams are rare beyond college life, executives are nevertheless constantly being tested - by a complicated proposal or in a multicultural exchange, for example - and too often found wanting. So companies need different ways to test understanding in the executive education sphere.

Safe testing

First, test yourself in a place where it's safe to fail - the opposite of most school systems. "How many people when they feel they don't understand something are paralyzed by that? They feel shame. They feel diminished. Contrast that with the reaction of people addicted to learning - they might feel frustrated but still feel excited," Dr. Dawson says. "It has to be safe to fail. Too often, leadership is a heroic journey where you can't make mistakes—it takes huge amount of courage to admit mistakes."

One place where it can be safe to fail is inside your own head. "Reflectivity is a cultivated habit that most of us have been discouraged from," Dr. Dawson says. Try simple recall techniques: if you are reading material, look away from the page and try to recall the ideas on the page. "It's not memorising," Dr. Oakley says. "It's forcing neural connections to begin growing and forces you to think about what is the key idea of this page. It's a powerful technique to use so what you're reading doesn't just go into working memory and then disappear into nothingness."

Another technique is to tell somebody about what you've just learned. Describing the material will help you connect the various facts, and get to a deeper understanding, which is the goal. Sometimes, however, we don't make honest assessments of ourselves. We measure how much time we spent or how many pages we read rather than whether we made progress. In that case, we might need someone to hold us accountable. And some things we want to learn require a change of behavior. This is best monitored by a mentor or trusted peer who can offer feedback. For example, if you want to learn to be a better listener, you have to start with awareness, paying attention to what is going on in the environment where you're listening. You need to reflect on the listening at the moment it's happening and afterward. Sometimes the experience needs to marinate before you can judge it. You need to identify people whose listening skills you admire, get their tips and feedback on your progress. "Use each moment to build your knowledge base," Dr. Dawson says.

Eventually, you want to test yourself in the real world. Ideally, you would select low-risk situations to conduct your experiment, Dr. Dawson says. That in itself requires reflection on whether a situation will be appropriate and how you will handle it.

Executives can take heart from the example of startup entrepreneurs, the vast majority of whom fail, often repeatedly, before finding success. Those failures teach them something, if they have taken the time to analyse the situation. You can reframe "failure" by examining it objectively as a set of lessons you've learned. If you are learning in a group setting, you can be a role model and make the environment one where it's safe to fail by calling on analogies to entrepreneurs and inventors who didn't get it right the first time.

Formalise reflection time

Considering that learning is a constant process, reflection on your progress should be built into your schedule. "One executive" Dr. Crick says, "takes the first hour of every Monday to think through mindful planning". He adds: "If you and your team know you're weak in terms of learning from each other, build in an extra half hour to listen to each other's views on a project."

Mindful agency - i.e. understanding your purpose, the feeling of learning and understanding and managing the process of learning - can extend beyond yourself to your workforce, she says.

If progress is limited, you might just need to work on your weak areas or try something new. Metacognition isn't about powering through; it's about constantly adjusting and refining. "Use common sense," Dr. Oakley says. "See if what you learned actually works in a real-life situation. If not, what your new strategy might be depends on what you're learning and what your challenges are."

Step 3. Evaluating Results

Set clear goals at the start of your learning journey so you can assess progress by the end. We often fall prey to optimism bias, underestimating how long a task will take and overestimating our performance. If you want feedback from a mentor, provide pointed, specific questions, Dr. Toileikyte says.

Some things may be difficult to quantify. Improving cultural metacognition may lead to more successful

collaborations and better communication, but you might not always be able to pin down the contribution.

Other times, results can be dramatic. Dr. Crick recalls working with an Australian water company whose teams appeared to lack creativity, failed to collaborate and were deemed 'rigid and persistent'. "The challenge was to listen to colleagues more and to build engineering capabilities in the team," she says. One team proposed a new way to repair a broken entrance to a dam. With the company now more open to listening, the idea was considered seriously and then implemented effectively for a quarter of the cost. "Knowing how to manage knowledge is critical," Dr. Crick says.

Even if you must approximate the likely impact of your metacognitive activity, this is worth detailing not just in your own mind, but as a first step in analysing the wider corporate impact.

Six ways to enhance metacognition in the workplace:

1. Schedule it. Set aside a few moments each day devoted to reflecting on what you're learning, how it's going, whether you need to make changes and planning what you will learn next.

2. Accept failure. Failure isn't final. It's a step on the road to something better. Making your workplace one where it's safe to fail will let you and your colleagues think truly creatively.

3. Take breaks. While you're working, focus intensely. But after 45 minutes or an hour, give yourself (and others) a reward for not having been distracted and let that information have time to sink in.

4. Speak in stories. When you need to make a highly complex issue clearer, use analogies and metaphors in communications as a means to engage others. However, imagery must be carefully considered so that it clarifies rather than confuses your point.

5. Seek out contradictory information and viewpoints. Our cognitive biases make us give too much weight to issues that confirm our existing views. Ask yourself when you adopted a position and where you got your views. It might be time for a rethink.

6. Act it out. Games, activities and role-playing can provide new perspectives that work at an emotional level when an intellectual-led approach fails.





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