



YOUR BRAIN AT WORK – LATEST ON WORKING MEMORY

Working memory in a work context

1. Remember that people will make sense of incoming information by linking it with their prior knowledge and experience. As far as possible, communicate in ways that will help people connect aspects of what you're saying with what they already know. If they're unable to do that, your message will seem like gibberish to them, unlikely to have the impact you were anticipating.
2. Cultivate a shared professional language. This will ensure that, when terms are used, everyone knows what is meant. Information in the shared context will be processed more quickly and people will literally be able to take in a lot more at the time.
3. Minimise distraction, especially when making important decisions. For example, when someone looks down at their mobile device during a meeting, they wipe their workbench of current context. It gets replaced with attention on the mobile device. It takes effort to reconnect with the meeting. If they do this continuously, they're likely to miss a lot. They'll possibly claim later that some of the conversation never happened! For them, it didn't.

Brains matter in 21st Century work

Did you know that barely 10 years ago, in one Australian state, there was an almost equal distribution between three major types of work. 28% of jobs were classified 'routine', involving regular exchanges with either people or information. Among these roles, bookkeepers, bank tellers and sales assistants. Thirty five percent were physical, including roles such as drivers, machinists, chefs and carpenters. Finally, 37% of jobs were labelled 'knowledge-intensive', with roles such as managers, professionals, scientists, nurses and accountants.

During the past decade, there has been a massive shift to knowledge-intensive jobs. Over 80% of new jobs fall into that category. Now, only 23% of jobs are 'routine' and 29% 'physical'. 'Knowledge' jobs (48%) make up nearly half of all roles. This trend is expected to accelerate going forward. Knowledge workers are 'those who think for a living', so brains at work matter more than ever before!

Working Memory – a key brain function

A recent conference highlighted the critical role of 'working memory', not only for 'those who think for a living' but in fact for anyone with a brain! More commonly labelled as short term memory, it really isn't memory at all. For the record, even with increased research focus, neuroscientists still don't agree on a definition of working memory.

One common perspective of working memory is that it's like a workbench. The workbench supports the integration of new, incoming information with past experience, accessed from stored memories. New information and memories are placed on the working memory workbench and juggled around to make sense to the individual.

According to educational neuroscientist, Dr Jared Horvath, 'the world comes in, and we need to tie the now with the then - we always reference new information with old'.

When there isn't a lot to do on the workbench, you're likely using sensory memory. For example, simply recalling a short list of numbers. But, if you had to reorder the numbers, say from high to low, working memory must then ramp up. You now need to process what's coming in (the list) and combine it with what you already know (the relative value of each number). You also need to hold them on the workbench while you do the juggling. It takes a lot more effort. To help understand working memory better, Horvath suggests four 'rules' you can use.

Rule 1: Working memory has a biological limit

The cold, hard truth is that the working memory has a biological limit, and it's pretty limited. Further, individuals reach their capacity by 9 years of age.

Researchers think about working memory capacity as the number of 'chunks' that can be placed on the workbench at the same time. The initial estimate was an average of 7 but recently this was revised downwards to only 4 chunks.

What are chunks? Basically, they're smaller parts of a whole. For example, 0512212308 may be chunked as 0512 212 308. Although the number sequence has 9 numbers, we can organise them into 3 chunks that are much easier to process and recall. This brings us to rule 2.

Rule 2: Chunks kill the limit

Even with a biologically limited working memory chunking, in Horvath's words, 'kills the limit'. While the number of chunks is constrained, the nature of chunks varies by individual, based on context. Also, chunking is as much about prior experience (patterns & memories) as it is about new information. Experts have much larger chunks than novices. Learning and practise help expand chunk size.

For example, when a novice memorises a chess board they memorise individual pieces. In contrast, very experienced chess players see the board as clusters of pieces. Chess masters have accumulated a 'vocabulary' of around 50,000 chunks or patterns of possible play. Grandmasters have learned around 300,000 chunks. They process a lot, quickly.

At work, assess the experience of your audience and pace the rate of information transfer accordingly. When experience is a factor, many assumptions are taken as given and shared. You may benefit from checking at times that everyone is on the same page.

Rule 3: When it's gone, it's gone!

The workbench is not only small, it's also very temporary. Whether you intentionally switch focus or are distracted, the outcome is the same. Your workbench wipes what was there before and replaces it with the new information. What was there before is gone, unless it had been consciously processed.

It's a bit like someone asking you to do something while you're focused intently on something else. You might give them an 'okay, a bit later' response but, because you immediately wiped the request when you re-focused on your original task, the request simply disappears from memory. Make sure people are focused when involved in important exchanges.

Rule 4: Working memory is constructive

Finally, you'll recall how working memory involves juggling the new and giving it meaning by experiences from the past. This means memories aren't a literal snapshot or photo of events. Rather, they're only ever an individually interpreted phenomenon. When working memory is used, processing error and distortion can and do creep in.