

# Smarter Learning for a Smarter Organization

Using Cognitive Science to create learning that works!



The success of your business depends on having the right talent in the right place at the right time. Some organizations rely on acquiring talent whenever and wherever they need it. Smarter organizations know that, in such a volatile world, rampantly acquiring talent undermines organization's culture. Such organizations focus on three things - high-performance enabling culture, high-potential employees who can learn what they need to learn, when they need to learn it and, smart learning that can move fast enough and can last long enough.

MindNudge employs following cognitive science principles to create smarter learning that is scalable and sustainable, learning that is short and targeted, learning that dynamically identifies and addresses each individual employee's knowledge gaps, learning that employees apply consistently and confidently – learning that works!

## Retrieval-based Learning

In traditional learning, mind is seen as a physical space and knowledge as physical things in that space. There seems to be a tacit assumption that successful encoding or construction of knowledge, in itself, is sufficient to ensure learning. Therefore, a premium is placed on identifying innovative ways to encode knowledge, and retrieval is considered merely an assessment of that knowledge.

Mind, however, learns in a different way. It emphasizes information retrieval over information storage. When new information is processed by the brain, a neural pathway is created. If that information is not used for some time, that neural pathway slowly disintegrates. Every time that piece of information is used (retrieved), neural pathway is stimulated and strengthened, because our minds anticipate that information to be of value in future and expect it to be retrieved again. Also, each active retrieval enriches past knowledge because we now associate it with newer cues - query, experience or event that activated the knowledge. This means that new neural pathways are connected to the same piece of information so now we can reach the same knowledge via multiple pathways. Thus, active retrieval is an effective strategy for promoting long-term and meaningful learning.

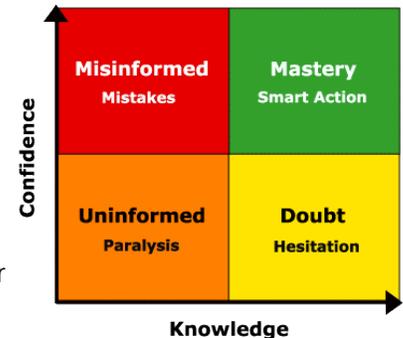
The mind is not a vessel to be filled but a fire to be kindled.

Plutarch

## Confidence-based Learning

How would you feel if you found out that the pilot, of the plane you're flying in, had guessed most of the answers on his certification exam? Or your key employees, whom you've trusted your company's growth to, had guessed on their exams?

Traditional learning allows (and encourages) guess work. So even if your "star" employee fared well in that last training, doesn't mean he understood everything and will apply it to work. Traditional learning produces a spectrum of unproductive behaviors, from doubtful. Overconfident employees make mistakes, whereas doubtful ones hesitate. You want your employees to master the concepts and consistently apply them to work resulting in higher productivity and better business results.

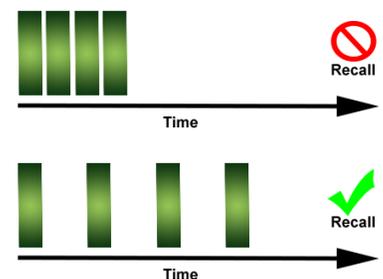


Confidence-based learning, CBL, measures the correctness of a learner's knowledge and confidence in that knowledge. It is designed to increase retention and minimize the effects of guessing. It distinguishes between what individuals think and actually know. In CBL sessions, learners are asked to indicate their confidence level when answering a question. When people are not confident but answer correctly, their confidence is improved. Conversely, if people are confident but answer incorrectly, they pay extra attention to the right answer and remember it longer because they don't want to let themselves down next time. While the learner's mind corrects itself, either in confidence or in knowledge, the system also learns about learner's lack of knowledge or lack of confidence, and serves content accordingly to fill the gap and move the learner towards mastery.

## Spacing effect

Most learning programs, especially in workplaces, are delivered over a short period of time, with an intent to get employees up to speed immediately. After such programs, most managers do notice a transient productivity boost but then employees relapse into their old ways soon. This can be attributed to a combination of factors, one of which is Spacing Effect.

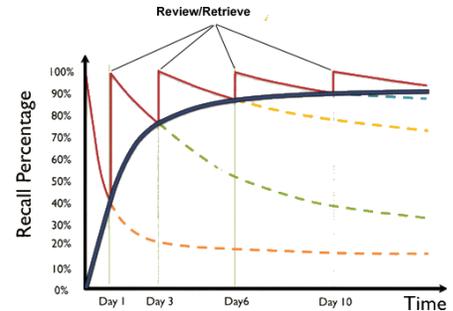
Information that is spaced over time is longer and better remembered than the same amount of information massed together (cramming). Learners benefit from spreading their learning across numerous days. They don't necessarily study more, they just distribute their learning time differently. Learning over an extended period of time induces a more persistent memory.



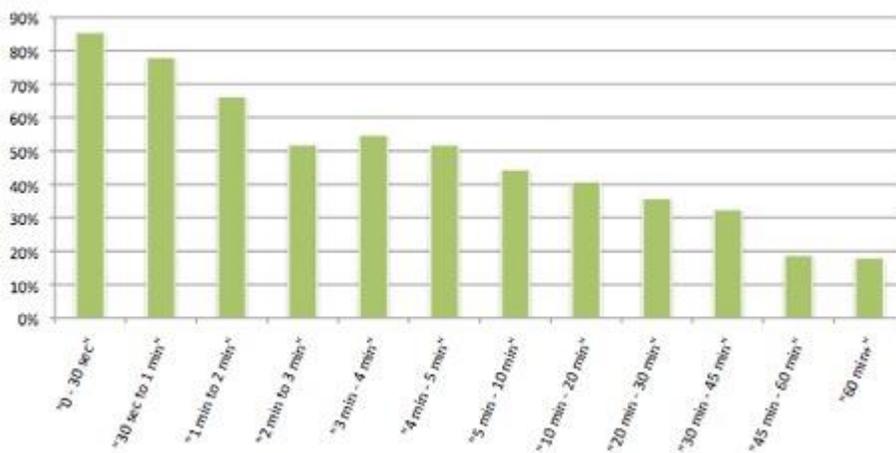
## Spaced Reinforcement

As soon as we stop learning, we start forgetting. Many researchers are busy determining precisely how much we forget. They are forgetting that it doesn't matter whether we forget 90% within a week or within a month. Even if we forget 90% within a year, the situation is disconcerting. And it means that no matter how much you invest into learning and development, nearly everything you teach to your employees will soon be forgotten. Corporations spend 60 billion dollars a year on training. But this investment is like pumping fuel into a car that has a hole in the tank. All of your investment simply drains away.

Neural pathways, created during learning, start disintegrating as soon as we stop learning. Studies show that if we review same or related information, these pathways not only become stronger, they disintegrate slower. As seen in the picture, every review/reinforcement restores knowledge to previous levels and also flattens the forgetting curve. In fact, spaced reinforcement is empirically proven to increase rate of remembering and to allow learners to retain understanding once it is gained, thereby plugging that metaphorical hole in your bottom-line.



## Human Attention Span



Research shows that human attention span is about 18% after 45 minutes. However, most corporate learning programs span at least a few hours between breaks. It's irrelevant that employees forget most of the content within days. With such low attention spans, it's surprising if they even understand the content.

This has garnered a lot of attention in recent years and many eLearning companies now offer "bite-sized" learning.

These five cognitive science principles combine to create smarter learning for a smarter organization. Our sophisticated algorithm uses repeated retrieval to continually identify employee knowledge gaps and to encode relevant learning into long-term memory. Learning is delivered in daily, short bursts while we have employee's full attention. All our learning is reinforced at increasing intervals to maintain high knowledge retention and to reduce subsequent forgetting. Confidence-based learning moves employees towards mastery so that they can quickly take right decisions and grow your business.

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[mindnudge.com](http://mindnudge.com)



### References

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