

## Less learning, more often

**Smaller, more frequent learning spread over time and interwoven in the workplace is dramatically more effective than traditional single hit training delivery. Lars Hyland suggests its time to drop old assumptions.**

- Short term gain, long term pain
- The spacing effect
- Train your brain in minutes a day!
- Informal learning
- The role of technology

It's been said before, but I think we've forgotten. We are programmed to forget. So we need reminding. Regularly.

As learning and development professionals, designing and delivering training within our organisations, we avoid confronting the fact that most of our efforts are quickly forgotten and remain unapplied. We continue to design training as discrete events with little or no follow through. We ask people to attend one/two/three day training courses and then expect them to put this into practice back in the job. Indeed, most e-learning ends up being consumed as a single hit session of one/two/three hours with little additional support.

Why do we continue to allow this to happen? In a word – habit. Our expectations are neatly aligned – management, trainers and trainees expect their training to be delivered and received in this way. So it becomes the path of least resistance. The painful irony is that this is at odds with the way we actually learn most effectively. Like any addiction, we know the cure but find it too painful to change.

But we are going to have to. The pressures of global competition are rising and will soon overcome entrenched views. Likewise, technology is now mature, prevalent and cheap enough to support a new economic model for learning in the workplace. So what will this new model look like? In a phrase: Less Learning, More Often.

## Short term gain, long term pain

Back in 2001, the American Psychological Association published (Journal of Experimental Psychology: Learning, Memory and Cognition, 2001, Vol. 27, No. 4) some interesting research. It concluded that practicing different skills in concentrated blocks is not the most efficient way to learn. While focusing on a particular skill leads to a short term boost in performance during the period of training, this leads people to over-estimate how well they learned the skill they practiced and results in poorer long term learning. This has the potential to fool trainers and trainees into believing that the apparent progress made during the training will be sustained in future performance back in the job. In fact, for long-term retention, practicing skills that are mixed with other tasks (contextual-interference practice as the researchers call it) results in better learning.

This has far reaching implications for most training design. It clearly points away from focused training on single skills and concentrated repetitive practice and suggests we design learning experiences that are deliberately interwoven among other tasks, requiring people to actively recall and then practice the new skill over longer time intervals.

## The spacing effect

An experiment conducted by the UK Post Office (now Royal Mail) in the 1970s also observed this effect. Employees training to operate new sorting machines were split into three groups. Group 1 completed their training in one continuous session. Group 2 completed their training in 2 sessions, while Group 3 completed the same training across 4 sessions. Group 3 demonstrated the best recall and job performance.

Interval based reinforcement, or the spacing effect, has been known and seemingly ignored for a long time. Pike's research into adult retention span in 1994 concluded that if people were exposed to an idea one time, at the end of 30 days they retained less than 10%. But if they were exposed to an idea six times with interval reinforcement, at the end of 30 days they retained more than 90%. Interval reinforcement maintains that knowledge and learning presented once and then reviewed perhaps ten minutes later, an hour later, a day later, three days later, a week later, is cognitively assimilated in a more robust and usable manner, dramatically improving active recall.

Will Thalheimer, a consultant and learning researcher based in Massachusetts, USA has produced an excellent paper (Spacing Learning Over Time, 2006) summarising the breadth of research that has been conducted on determining the spacing effect.

The overwhelming conclusion is that spacing learning over time produces substantial learning benefits. The ideal interval of time between repetitions of

learning is roughly equal to the retention interval – the time you expect learners to remember information before putting it into practice on the job – this could be hours, days, weeks or even months. Indeed an interesting observation is that longer time intervals between repetitions of learning result in better long term retention. There is still debate around the causes of this effect, but it is likely to be due to the extra cognitive effort creating stronger, more varied memory traces and the development of more effective encoding strategies that aid remembering.

## **Train your brain in minutes a day!**

There is still too little discussion and real focused application of the spacing effect in the workplace with regard to training design. It should no longer be seen as esoteric research but central to future training design. Indeed, it is already in the mainstream with the hugely successful Brain Training software available on the Nintendo DS handheld game console. This game has motivated millions of people - young and old - to regularly complete fun mental exercises aimed at improving active cognitive performance, all based on the spacing effect. Indeed, the software insists on short ten minute daily activity and then tracks your improvement accordingly.

Nintendo have now taken this further with the English Training software based on similar principles which is also proving to be a huge hit. We could learn a lot from this successful approach to engaging and sustaining attention and learning activity.

## **Informal learning**

It appears we are at the cusp of a shift in emphasis away from the current dominance of formal learning (structured courses, workshop events, sequenced instructional experiences) to an increased recognition of informal learning. In the USA, Jay Cross and other learning commentators are spearheading a drive to understand the '80% of learning' that currently falls outside the scope of formal Learning and Development. This includes day to day activities such as conversations with peers, self-motivated searching for information and answers, experience drawn from practice on the job, storytelling exchanges in the bars and cafés after hours. This naturally takes into account the spacing effect and each individual activity or action is inherently small and conducted frequently. As this trend takes hold, it may put further pressure on formal training and development budgets as efforts to justify their effectiveness continue to prove inconclusive. This can already be seen in the growing interest in, and use of, the phrase 'employee engagement'. This starts to draw together previously separate functions of communication, learning and performance and will mean a re-definition and reframing of how we design learning solutions in the future. Intuitively, it makes sense to start viewing things from the employees point of view and begin to coordinate and schedule communications and training

messages so that they are mutually supportive rather than confusing and contradictory. Too often it is the latter in large organisations.

## The role of technology

Our relationship with technology has shifted in recent years. We rely on it and expect more from it than ever before. From online shopping, listening to music and watching movies, searching for information, playing games, to talking with our families and friends across the world. We, as consumers, are demanding instant gratification and control over what we spend our time on. This has to impact education and training. There are clear signs that the status quo is beginning to unravel as students and trainees take control of their own learning experiences through collaboration with respected peers and experts, through instant access to supporting content, and through immediate practice of newly acquired skills in safe, virtual environments that realistically simulate the eventual work experience. The model of the traditional "course" looks decidedly clunky in this new world.

With an always connected environment we can start to see support solutions being developed that are designed to optimise the spacing effect. Some exist already in the guise of performance support or workflow based learning. Knowlagent offer the ability to deliver 15 minute modules of learning content to call centre employees in between customer calls. Fort Hill Company in the USA has a system that manages reinforcement and practice at optimal intervals for the individual learner. Rest assured, more systems will follow as awareness grows of the powerful impact the spacing effect has on learning effectiveness and employee performance.

Remember. Less learning, more often. Don't forget!

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