

Neuroscience-based Learning Design

Brain-friendly learning – it isn't rocket science!



CREATE ASSOCIATIONS

Learning is a process based on associations. Creating associations between concepts can increase our ability to remember details by as much as 40%.

focus on spacing

- ▶ It is much easier to re-learn materials than the first time. 
- ▶ Learners will experience great success by spreading out their study sessions over time, not engaging in one-time cram sessions.
- ▶ It is hard to retain meaningless information.

Encourage consistent practice



In order for learners to retain new information, they have to use it constantly or else they will lose it. When learners stop practicing a new skill, the brain will eventually eliminate certain pathways. They'll eventually lose a new skill unless they keep on practicing. Create learning opportunities that promote continued practice.



RECOGNITION VS. RECALL

Recalling information requires full mental activity, while recognition involves a much lower level of conscious effort. Clarity, familiarity and consistency should all be common goals when designing training.



important stuff first

Organization and sequencing of content is a key task in instructional design because the order in which subjects are presented directly affects how learners process, store, and recall information.

Balance Cognition & Emotion

Neurological studies have found that the limbic system, which is central for processing emotional reactions, shuts down when emotions run too high. It is important to enable the brain to function properly and therefore allow knowledge to pass into long-term memory.

NOVELTY EVERY 15 MINUTES

Attention is at its highest when something new is introduced every 10-15 minutes because our brains are hardwired to ignore predictability and repetition.

Bite-sized chunks

Chunking makes learning more manageable and easier to integrate into long-term memory. Once it's in long-term memory learners can remember it and transfer the knowledge to their daily tasks.



create multiple sense learning

Students learn best when every sense is engaged and when their imagination is most active. Experts confirm that "presentation methods which use two or more senses are more effective than using one sense only".