

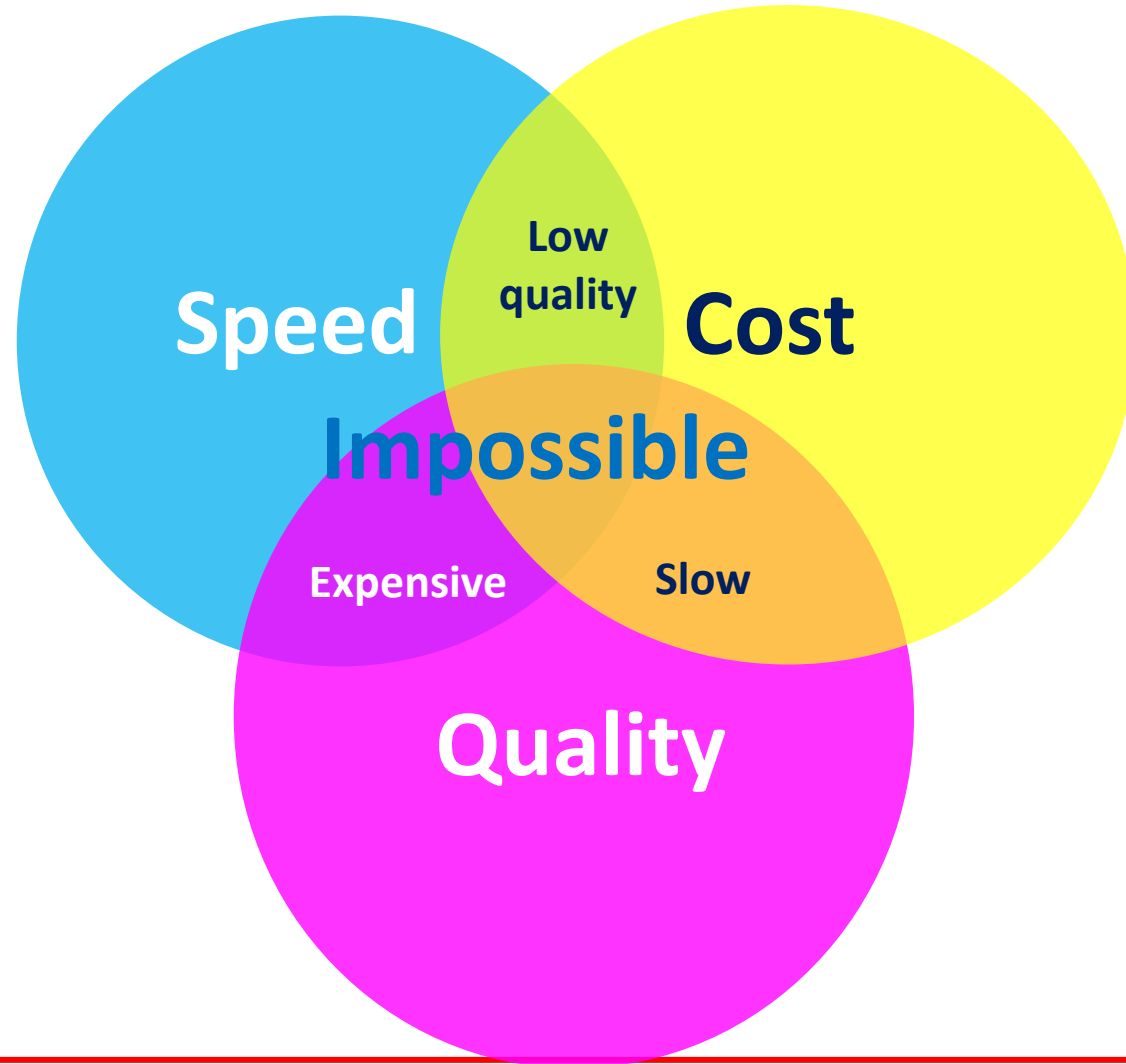
# Making Memories Sticky – Writing to the Long -Term Memory

Trevor Dale FRAeS MCIEHF

The ultimate safety tool is, after all, well-trained people.



# The Need to Deliver More with Less



## How & why we make errors

### Cognition

#### Automatic

- Fast and effortless
- Subconscious
- Highly practised.



#### Conscious

- Slow and hard work
- Uses working memory
- Method of last resort.

When mistakes are made ...

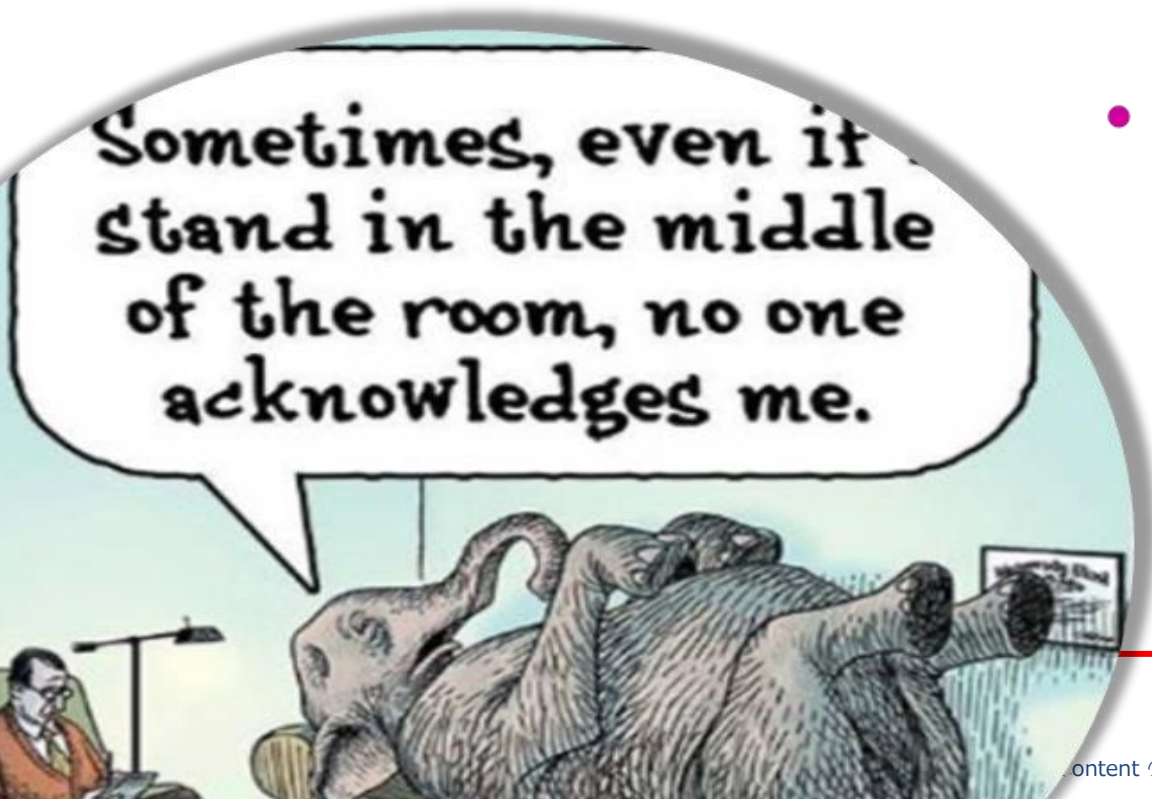
Why did you do that?



“I don’t know I just wasn’t thinking! It just seemed right....”

# THE CURRENT PARADIGM

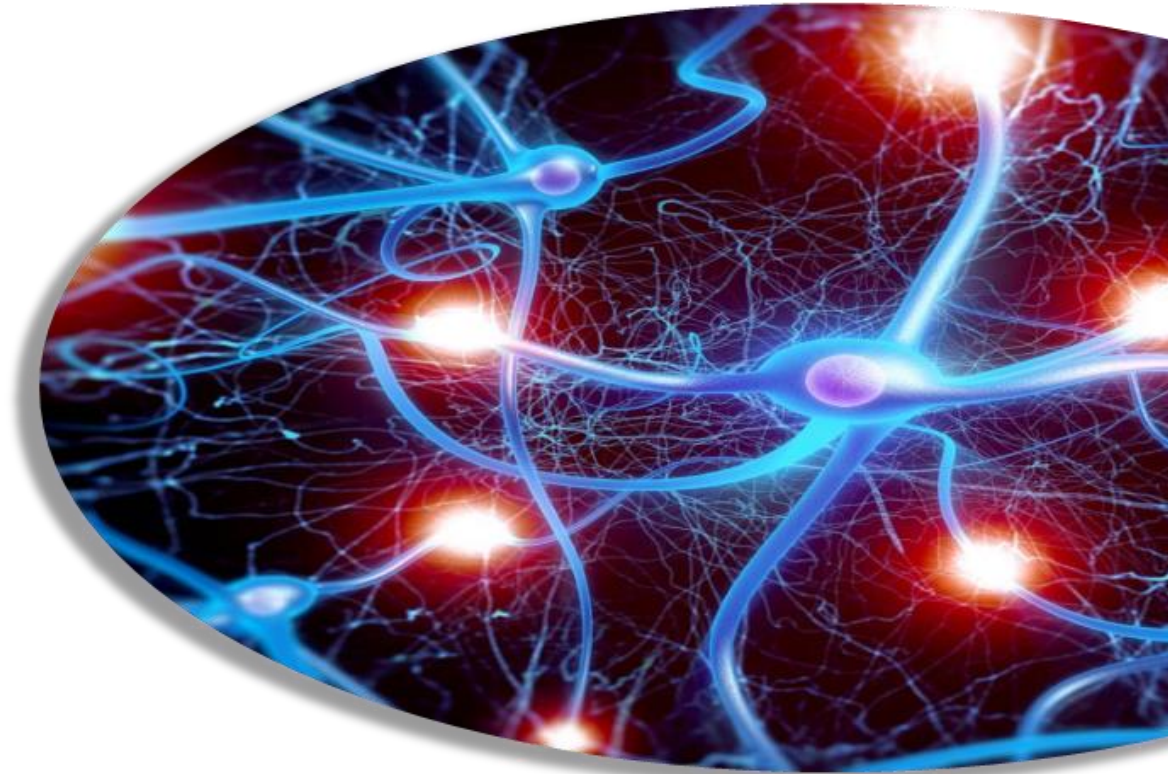
- Teaching to the short-term memory
- 79% knowledge degradation in 31 days (*Ebbinghaus*)
- The Magic Number 7
- 18 minute concentration span





# LONG TERM MEMORY

- 300,000 times faster
- Retention
- Application



# THE NEUROSCIENCE

- Different neurons for short and long term memory
- Different reset rates
- Time sequencing for long-term memory
- Repetitions x3
- Strengthen connections (Synapses)





# Time Sequenced Learning

- Embeds knowledge directly into the long-term memory within one learning period
  - Reduces learning times by 75-96%
  - No loss of learning outcome
  - Improved knowledge retention
  - Improved application



# BENEFITS

- Reduced learning times/operational impact
- Improved learning outcomes
- Increased trainer coverage, redeployment or reduction in numbers
- Reduced cost/improved ROI



# TIME SEQUENCED LEARNING IN ACTION:

## Stop & Search

- 5000 officers
- Critical/mandatory training comprising;
  - Two day classroom
  - One hour eLearning

Download™ training;

- One, one hour module
- 10,000 man days saved
- 75% reduction in training budget





# TIME SEQUENCED LEARNING IN ACTION:

## Structural Dynamics Training

- Client; Global IT Company
- The norm
  - Global experts
  - One day course
- Download training;
  - One, one hour module
  - 20% better learning acquisition
  - 7 man hours per learner saved
  - flexible learning



# Time-sequenced learning

So how do we design learning to have the right space built in?

Could it look like this?

A complex body of learning in about 10 minutes – space to rest

Review that learning – space to rest

Revise that learning – space to rest.



# The Need to Deliver More with Less



Hot off the press: Institute of Physics August 2023

**'the big message overall is that one hour's time-sequenced learning pretty much doubles the impact of the traditional teaching.'**

Atomic structure theory module compared to 'traditional teaching' GCSE  
Physics (16 year old students)

Evaluation conducted by University College London