

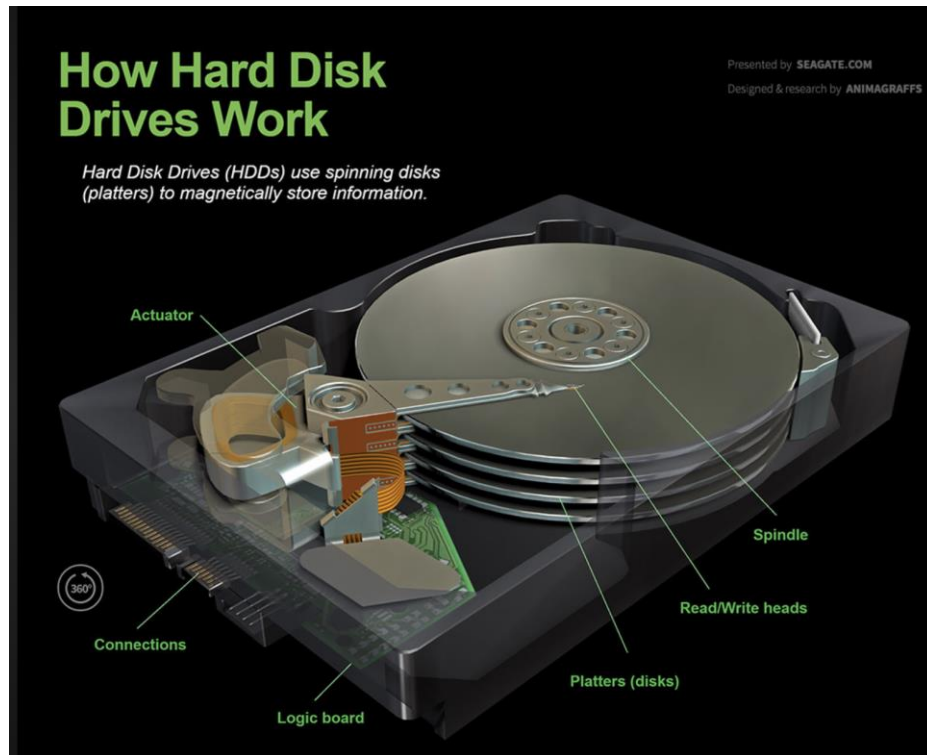
PERFORMING UNDER PRESSURE



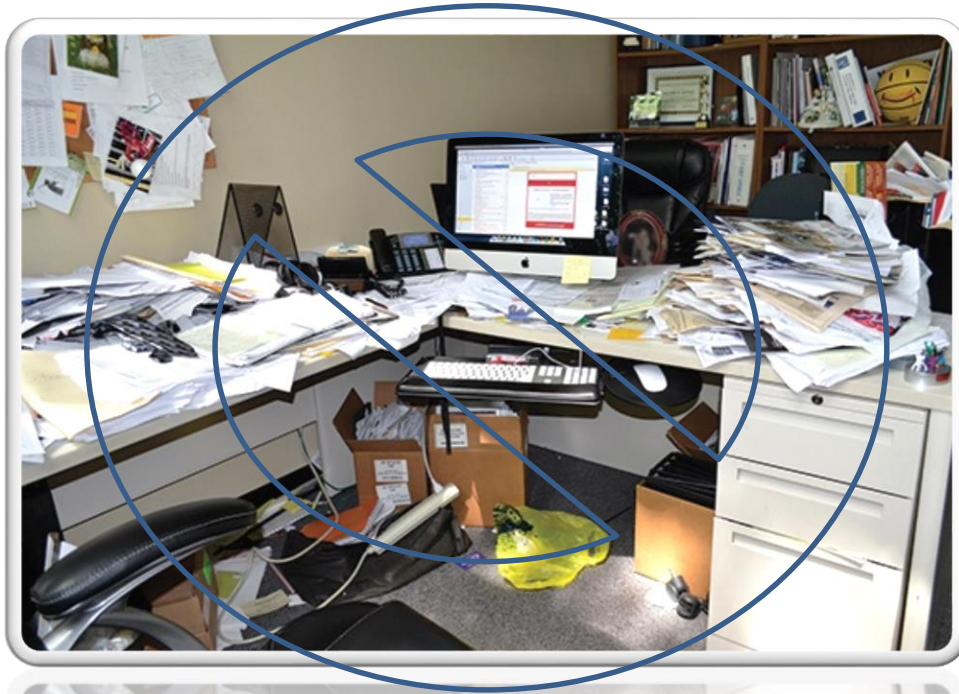
The brain is an incredibly effective, learning computer.

Some parts are like apps; the more apps you have open, the slower your cognition.

Some parts of the brain are hardwired and automated.

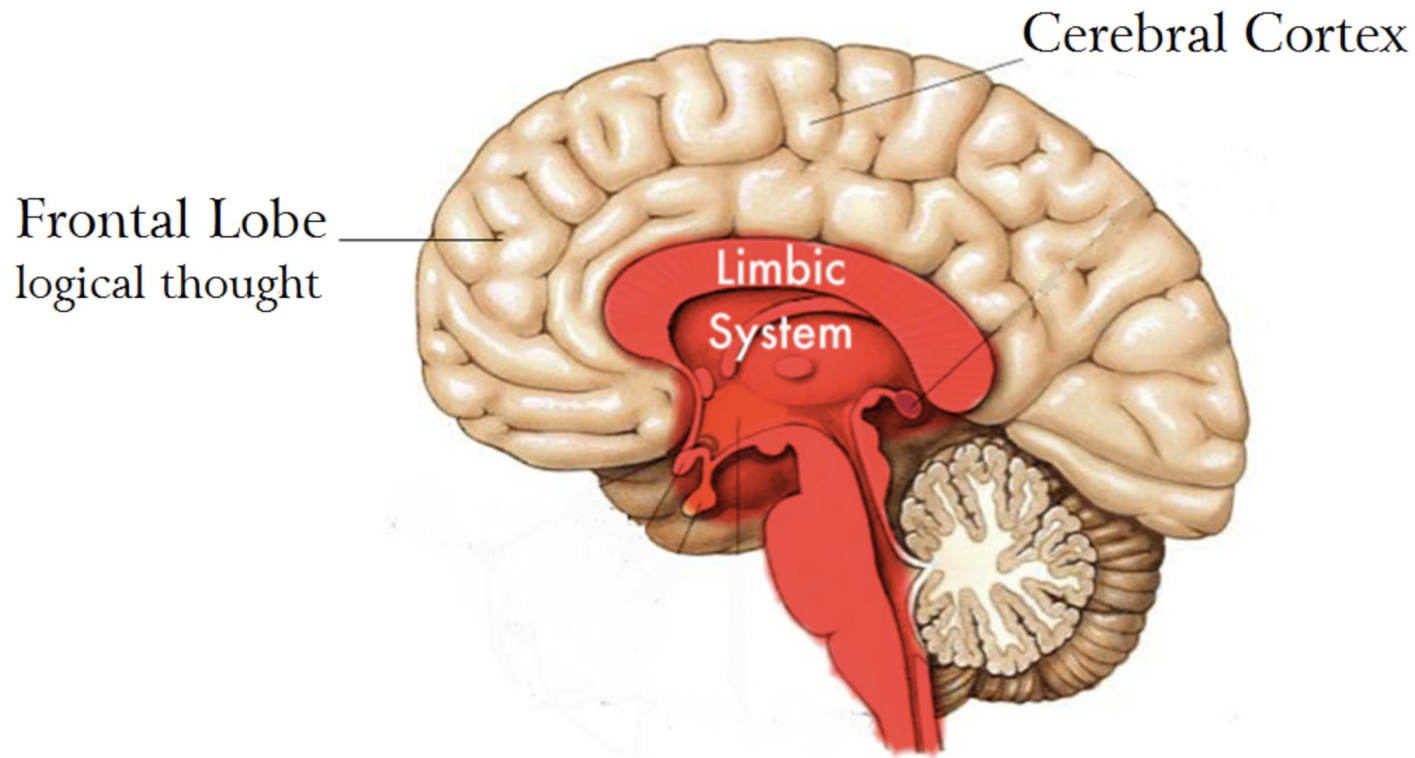


THE BRAIN IS HIGHLY EFFICIENT AND PREFERS ORGANIZATION.



- Commonly-used information is stored where it can be easily accessed (desk top).
- Less-used information is stored in a junk drawer or seldom-used computer file.
- ASAP, habits are moved to and stored in the hard drive; this clears space for the working brain.

IT'S IMPORTANT TO KNOW: WE HAVE TWO BRAINS, AND EACH SERVES A DIFFERENT PURPOSE.




LIMBIC SYSTEM:

AUTOMATED; SUB-CONSCIOUS
IMPULSIVE (and EMOTIONAL)
INCLUDES AN EFFECTIVE EARLY WARNING SYSTEM

PRE-FRONTAL CORTEX:

CRITICAL THINKING AND JUDGMENT
CONTROLS IMPULSES
CUMBERSOME IN AN EMERGENCY

The LIMBIC SYSTEM does whaaat?

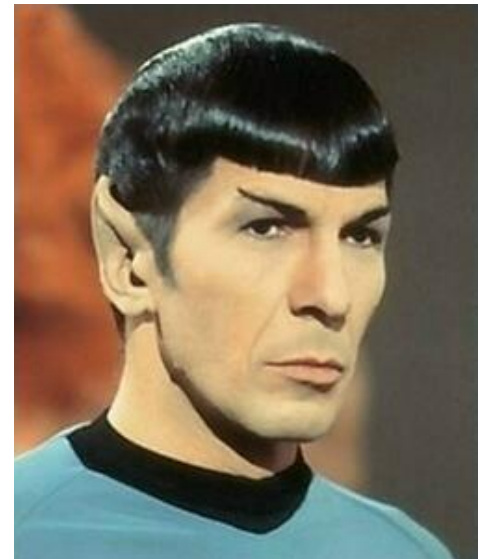


I know pleasure
pain, and fear.

- It's primitive.
- It's super fast.
- It's a hyper-paranoid car alarm:
 - It's constantly "on guard" for potential threats.
 - It secretes stress chemicals when stimulated.
- It's excellent at "remembering" patterns.
(Is that your amygdala you're feeling?)
- In an emergency, it is given priority.

What is the PRE-FRONTAL CORTEX?

- It is an *amazing* computer that learns from its past.
- It is good at analyzing; good at critical thinking. This is where decision making happens.
- It represses urges and helps keeps the limbic system under control
- It reaches full maturity by around age 25.



BOTH HAVE DOWN SIDES

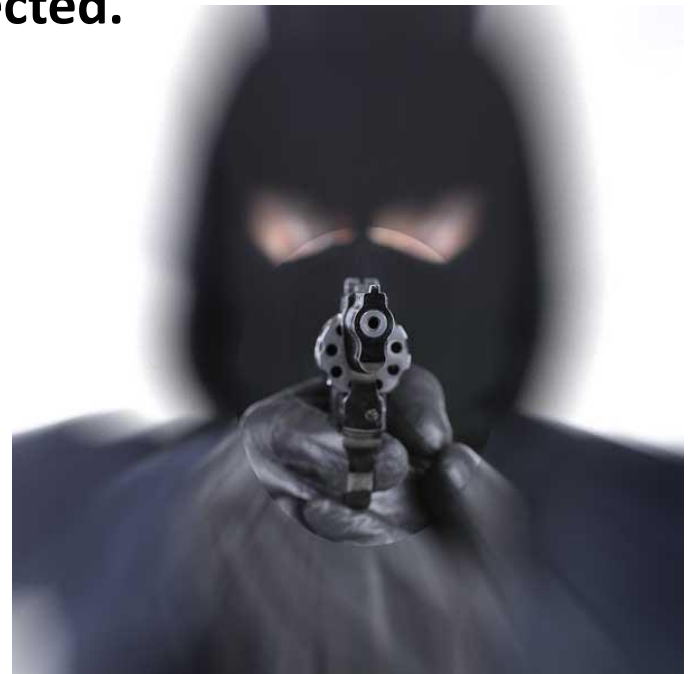


When the pre-frontal cortex is highly stressed, it ...

- ✓ Becomes bogged down,
- ✓ Cannot handle multi-tasking,
- ✓ Isn't able to recall information well, and
- ✓ Decision making is significantly affected.

Commonly, people lose situational awareness .

Tunnel vision sometimes happens.



When the limbic system is over-stressed, it has three typical responses...

ONE ...



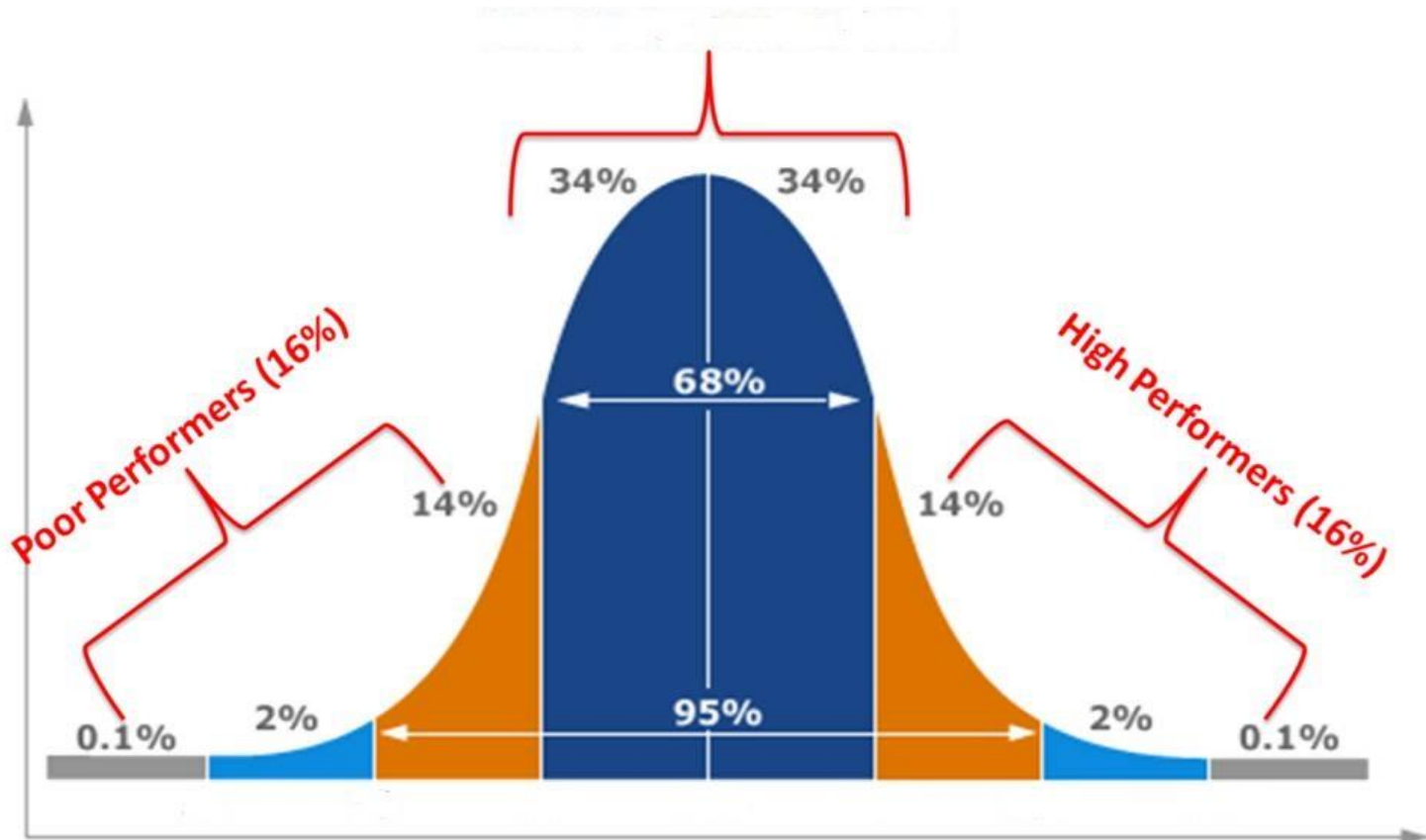
TWO ...



AND THREE ...



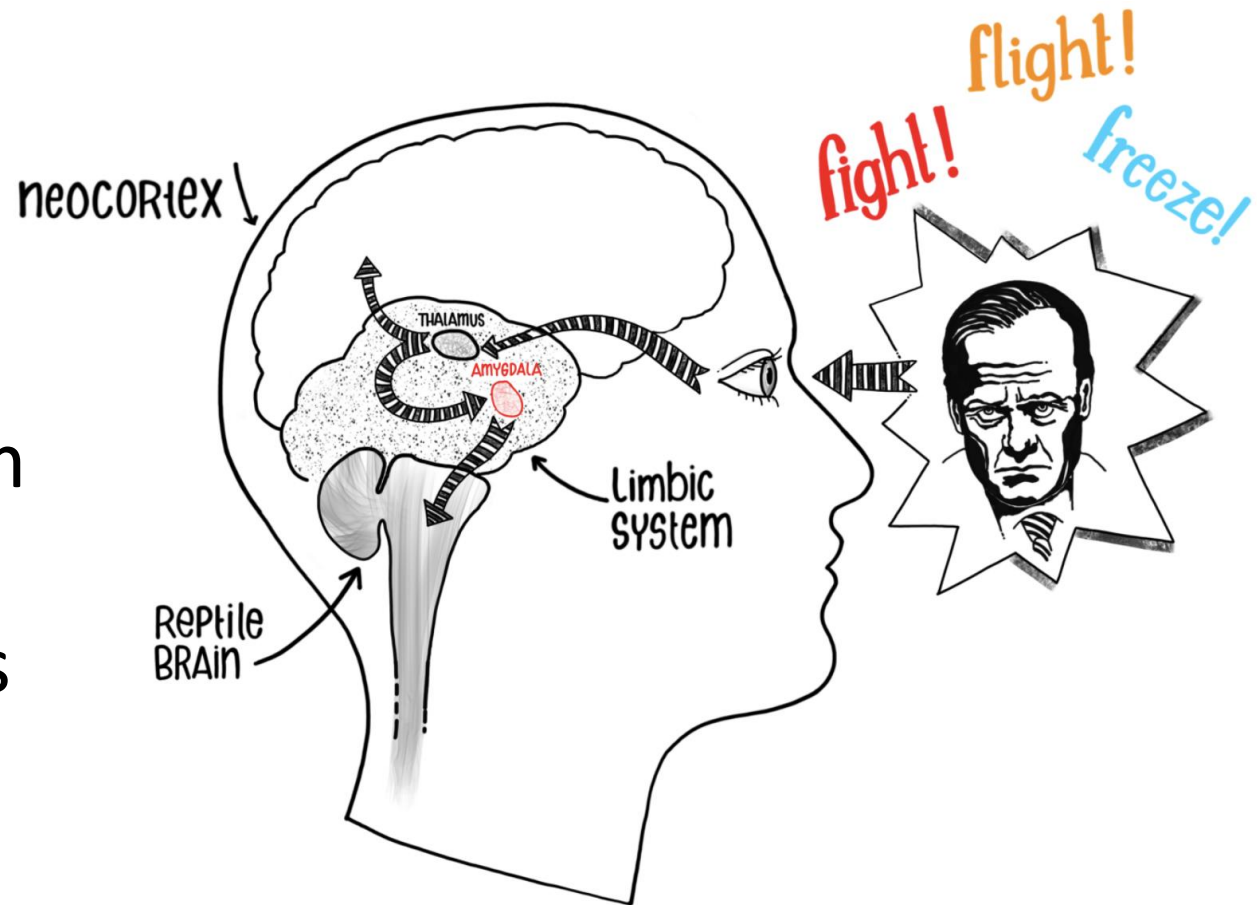
TYPICAL PERFORMANCE (of the average person) UNDER PRESSURE



Research suggests that upwards of 85 percent of people will have cognitive and/or performance deficit in an emergency.

DURING AN EMERGENCY ...

The amygdala warns the system even before a message reaches the cortex.



AMYGDALA HIJACK

During an emergency ...

The pre-frontal cortex gets busy and instantly scans for a memory or impactful experience that can provide useful data.



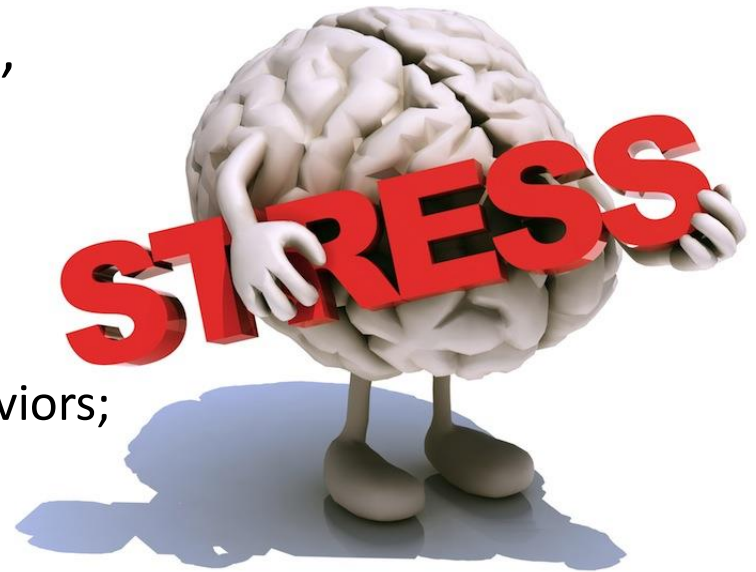
It is essential to upload the brain with quality “hits” that can be easily retrieved.

During an emergency ...

The cortex hates adding more stress or workload to an already stressful situation. (Being over-busy leads to cognitive error).

Consequently, to limit cognitive output, people will:

- Speak their native language;
- Avoid attempting new or unfamiliar behaviors;
- Follow their habitual routines, etc.



... in other words, they will automatically do what takes as little thought as possible in order to keep the pre-frontal cortex clear.

During an emergency: (common responses)



- People gather “stuff.”
- People have a need to be with others (most loathe isolation) and they (and primates) benefit by touching each other.
- People check in with those around them and seek information; if they don't get it, they check in with others, start rumors, etc.
- People are apt to do what those around them do; they are very open to suggestions.

WHY DOES THIS MATTER?

- 1) We underestimate how the stress will affect our brains in a real emergency.
- 2) We overestimate our cognitive abilities (including our ability to multi-task).
- 3) We are often surprised by “something.” This adds to stress and reduces performance.



**Don't gamble that all will go well.
Instead, change the odds.**

SPECIFIC STEPS THAT CAN HELP



- Simple checklists provide grounding.
- Breathing techniques can effectively reduce heart rate and BP.
- Knowing about bystander stress can minimize surprises.
- Use of case studies and close calls allows you to **imagine what you might do** in the situation. (Think through each step in detail.)
- Taking time to stop, breathe, and take a drink of water has been shown to reduce stress.

RESEARCH SHOWS...

We perform as we practice ...



PEAK

SECRETS FROM
THE NEW SCIENCE
OF EXPERTISE

Anders Ericsson
and Robert Pool

Note: It is very rare that we will perform better under pressure than we perform in practice.

CONSEQUENTLY...

- 1) Hold yourself to high standards,
- 2) And make your practices real!



REALISM MATTERS

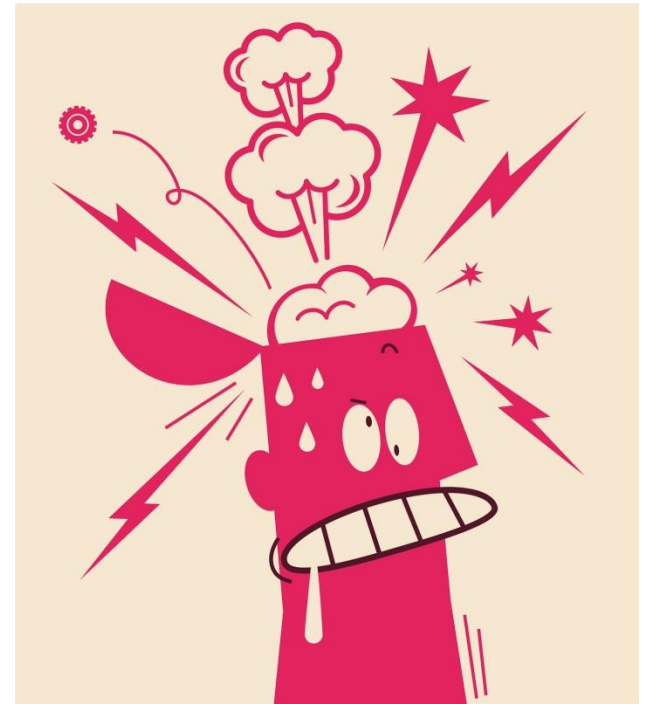
- Research has shown ... *talking* is a fairly ineffective method for improving performance; *showing* is marginally effective; having students *do* leads to better performance/retention.



Research shows that the brain is best able to retrieve information when it is asked to recall info under similar circumstances.

Things that add stress ...

- Performing new skill
- Performing in front of others
- Being evaluated
- Surprises
- Gaps in knowledge
- Lack of familiarity
- Noise
- Overstimulation (task saturation)
- Working alone
- Time pressures
- Limited resources



Things that can reduce stress.

- Knowledge
- Familiarity
- Routine
- Checklists
- Quality leadership
- Working with a partner
- Quiet, soothing voice
- Breathing
- Laughter

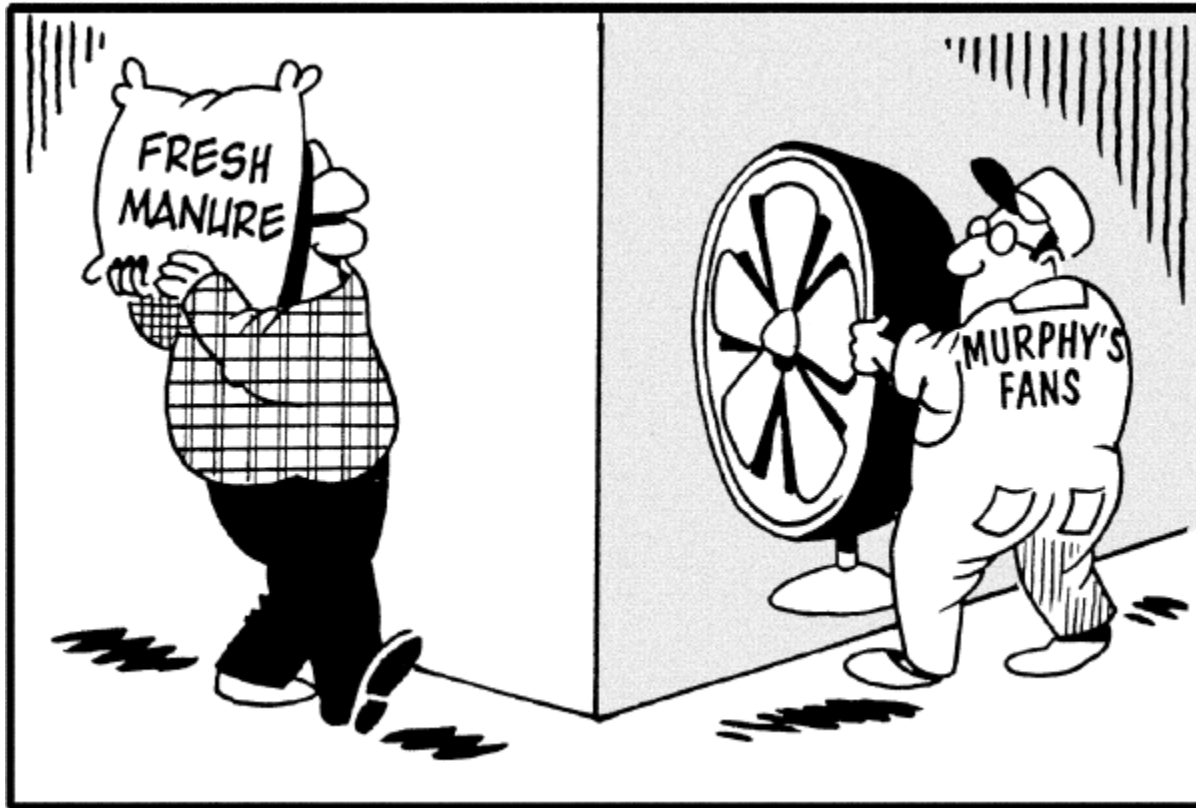


AND KEEP IN MIND ...



Practice without corrective feedback often allows bad habits to solidify.

Good luck!



May all your emergencies go well.

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