systran
CUSTOM LEARNING SOLUTIONS

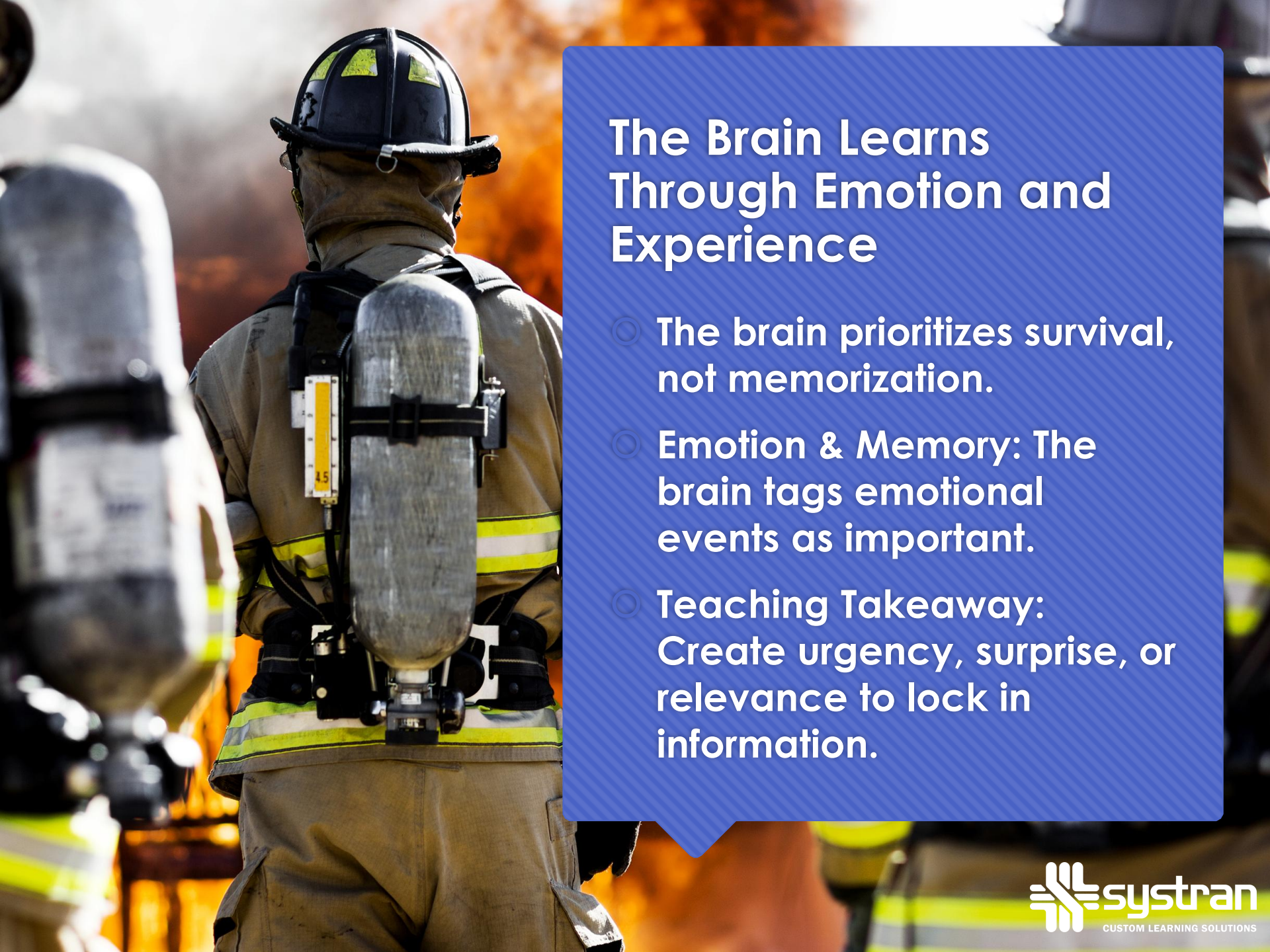
Rewiring Learning for Long-Term Retention

Share

What is your most vivid memory?

Why do you think you remember it so well?

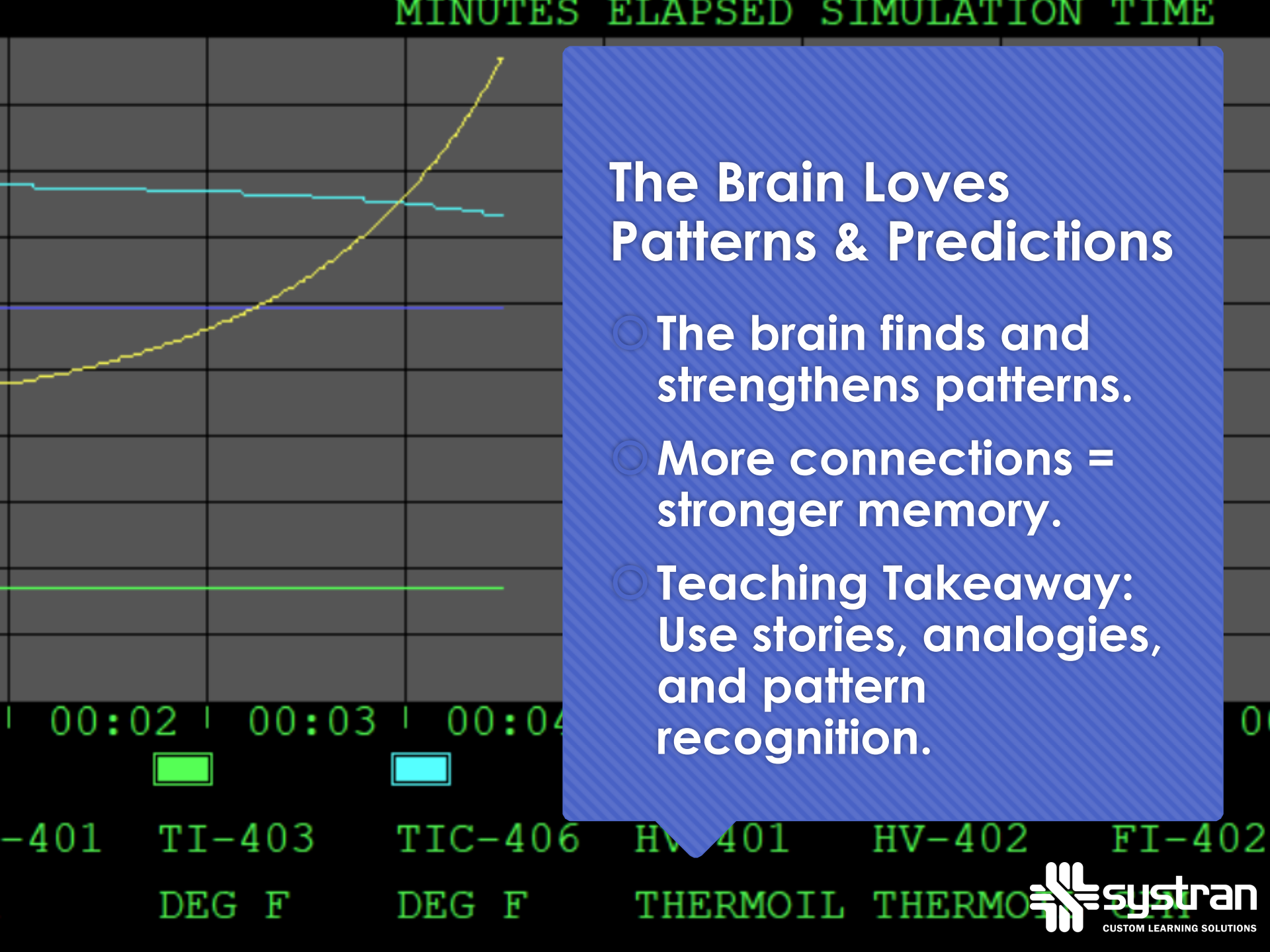
systran
CUSTOM LEARNING SOLUTIONS



The Brain Learns Through Emotion and Experience

- The brain prioritizes survival, not memorization.
- Emotion & Memory: The brain tags emotional events as important.
- Teaching Takeaway: Create urgency, surprise, or relevance to lock in information.

systran
CUSTOM LEARNING SOLUTIONS



The Brain Loves Patterns & Predictions

- The brain finds and strengthens patterns.
- More connections = stronger memory.
- Teaching Takeaway: Use stories, analogies, and pattern recognition.

systran
CUSTOM LEARNING SOLUTIONS

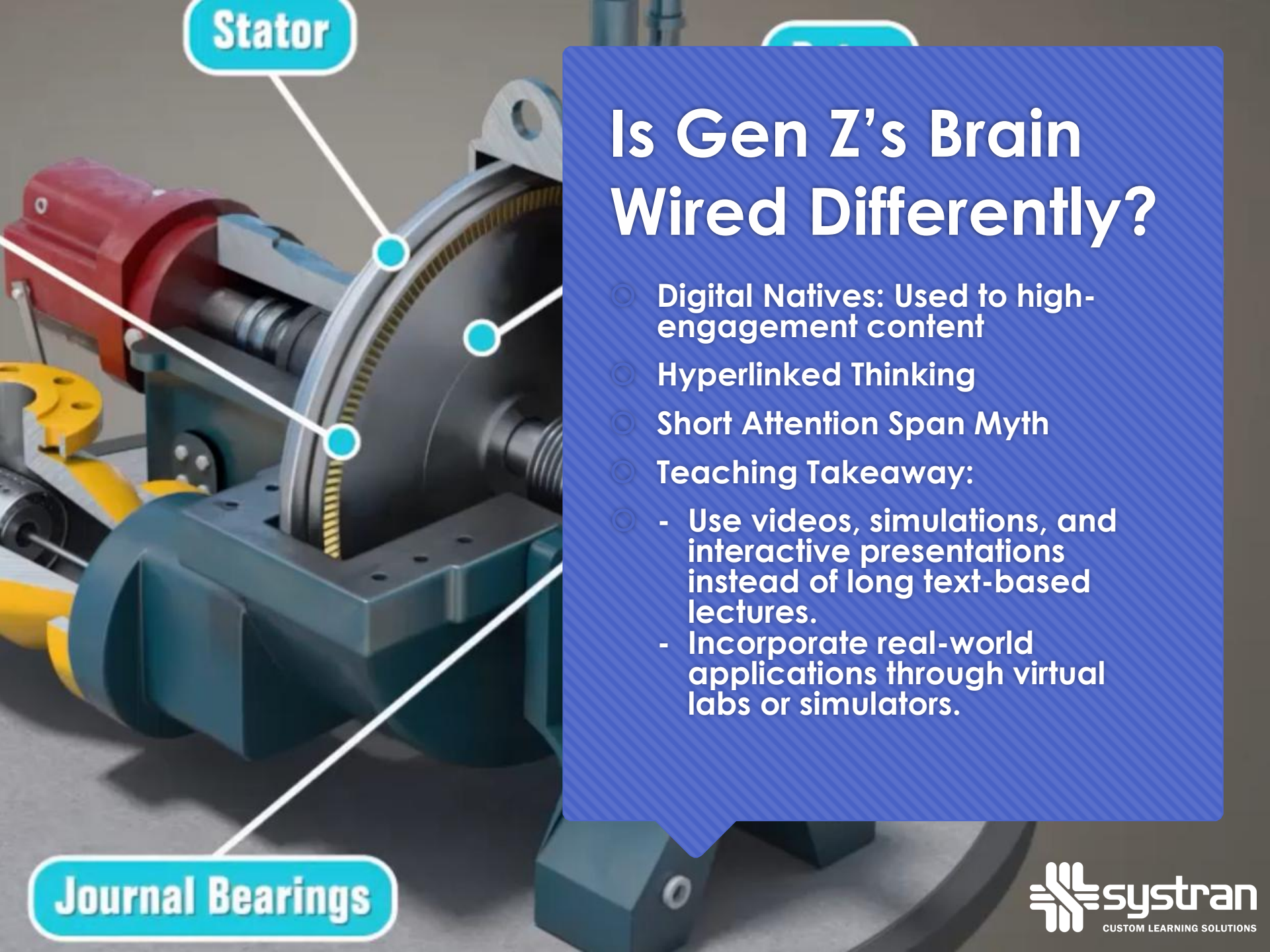
The Brain Forgets to Conserve Energy

Ebbinghaus Forgetting Curve

- 50% forgotten in 1 hour
- 70% in a day
- 90% in a week

Teaching Takeaway:
Reinforce through repetition, retrieval, and variation.

systran
CUSTOM LEARNING SOLUTIONS



Is Gen Z's Brain Wired Differently?

- Digital Natives: Used to high-engagement content
- Hyperlinked Thinking
- Short Attention Span Myth
- Teaching Takeaway:
- - Use videos, simulations, and interactive presentations instead of long text-based lectures.
  - Incorporate real-world applications through virtual labs or simulators.

systran
CUSTOM LEARNING SOLUTIONS

Teaching Takeaways for Retention

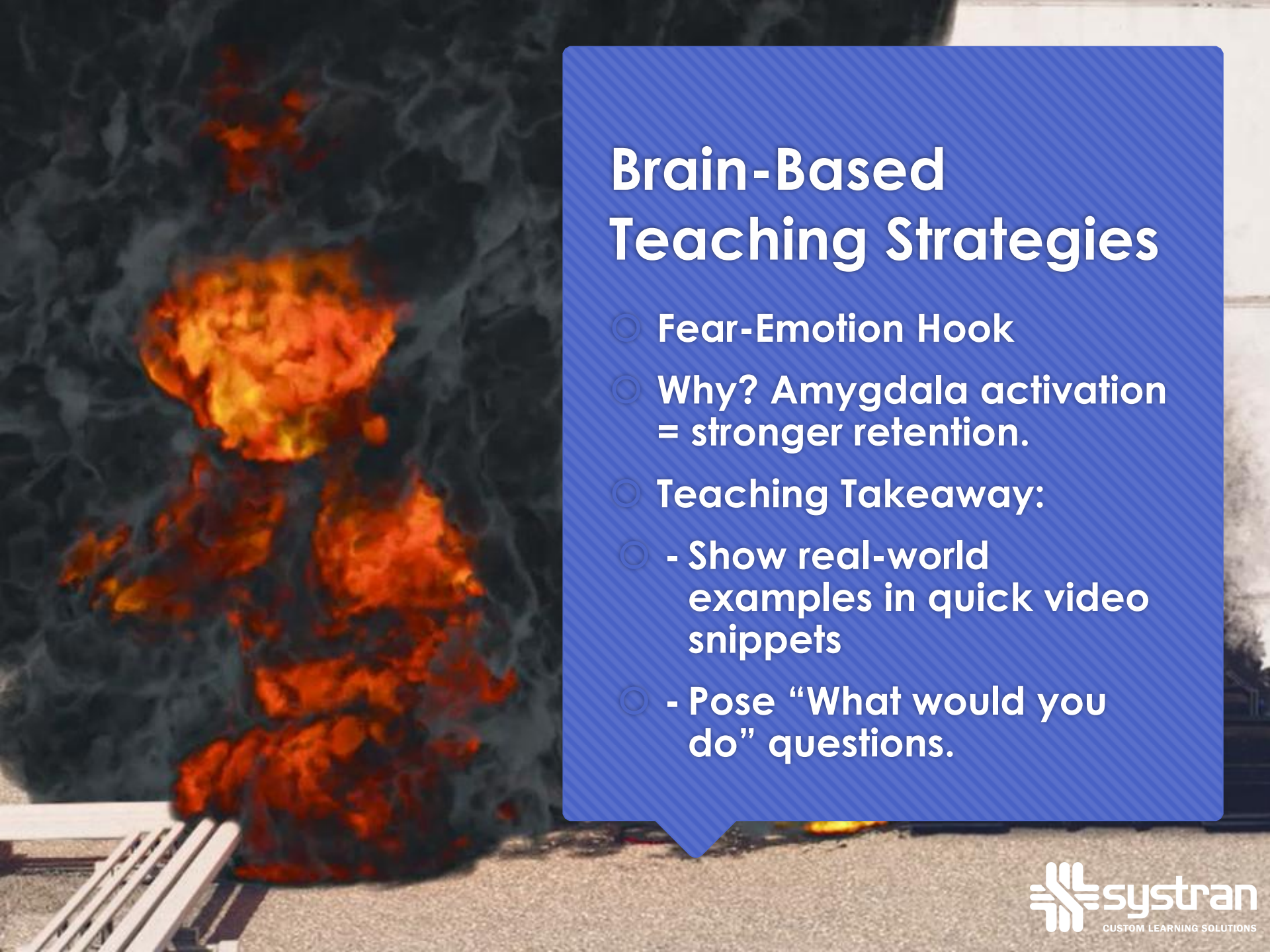
Exploration Over Explanation: Problem-based learning.

Microlearning: Short, fast-paced content.

Gamification: Points, leaderboards, and challenge-based learning.

Social Learning: Peer-to-peer teaching over authority.

systran
CUSTOM LEARNING SOLUTIONS



Brain-Based Teaching Strategies

- Fear-Emotion Hook
- Why? Amygdala activation = stronger retention.
- Teaching Takeaway:
- - Show real-world examples in quick video snippets
- - Pose “What would you do” questions.

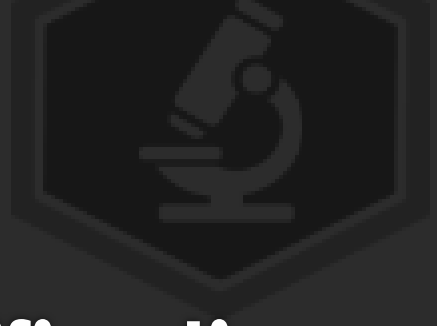
systran
CUSTOM LEARNING SOLUTIONS

Learning Newbie

(1 completed course)

Learning Grower

(2 completed courses)



Learning Adventurer

TEST BADGES

Gamification

- The brain craves progress → Dopamine release.
- Teaching Takeaway:
  - Incorporate challenges, puzzles, escape rooms.
  - Use badges and leaderboards.

systran
CUSTOM LEARNING SOLUTIONS

Teach Back - Teach to Learn

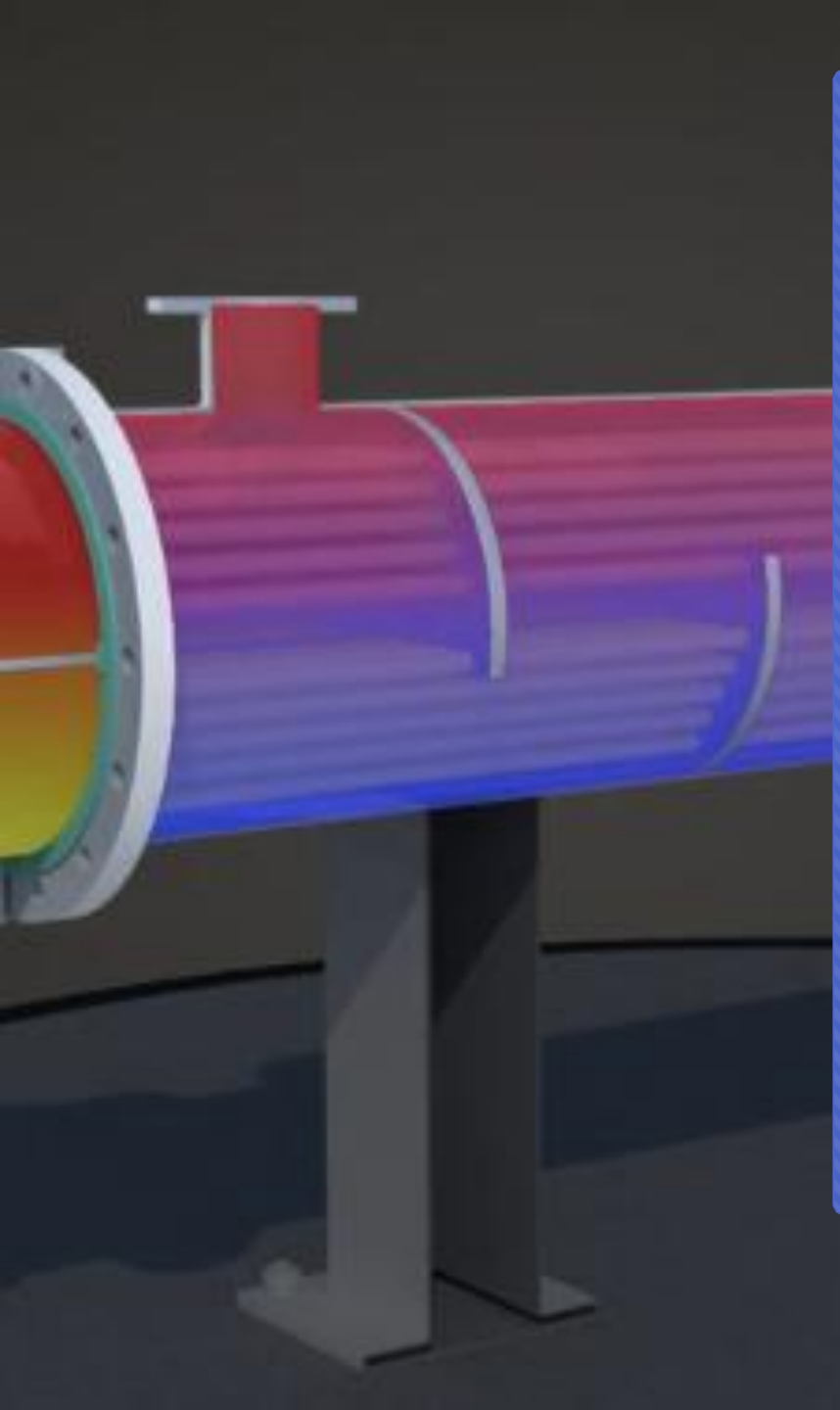
- People retain 95% of what they teach.
- Teaching Takeaways:
  - Peer teaching
  - Group problem-solving
  - Role reversal

systran
CUSTOM LEARNING SOLUTIONS

Active Learning Strategies

- Curiosity-Driven: Ask questions before providing answers.
- Spaced Retrieval: Make students recall instead of just reviewing.
- Chunking & Microlearning: Teach in 5-7 min blocks.
- Simulation-Based Training: Use high-stress scenarios.

systran
CUSTOM LEARNING SOLUTIONS



Reinforcement Techniques

- Interleaving: Mix operations, safety, and troubleshooting concepts.
- Multisensory Learning: Engage multiple senses.
- Storytelling: Use analogies (e.g., heat exchanger = coffee cup).

systran
CUSTOM LEARNING SOLUTIONS

Takeaways

- The brain learns through emotion, patterns, and retrieval.
- Gen Z thrives on active, interactive, and gamified learning.
- Reinforcement beats repetition—make students recall.
- Align teaching with brain processes for better retention.

systran
CUSTOM LEARNING SOLUTIONS

The Learning Styles Myth

No scientific evidence supports tailoring instruction to learning styles.

Use multisensory learning instead.

systran
CUSTOM LEARNING SOLUTIONS

'Rereading & Highlighting' Myth

- Passive reading does not enhance retention.
- Use active retrieval practice like self-quizzing.

'More Hours = More Learning' Myth

CRAMMING LEADS TO COGNITIVE OVERLOAD.

USE SPACED LEARNING AND MICROLEARNING FOR BETTER RECALL.

systran
CUSTOM LEARNING SOLUTIONS

'Hands-On Learning is Best' Myth

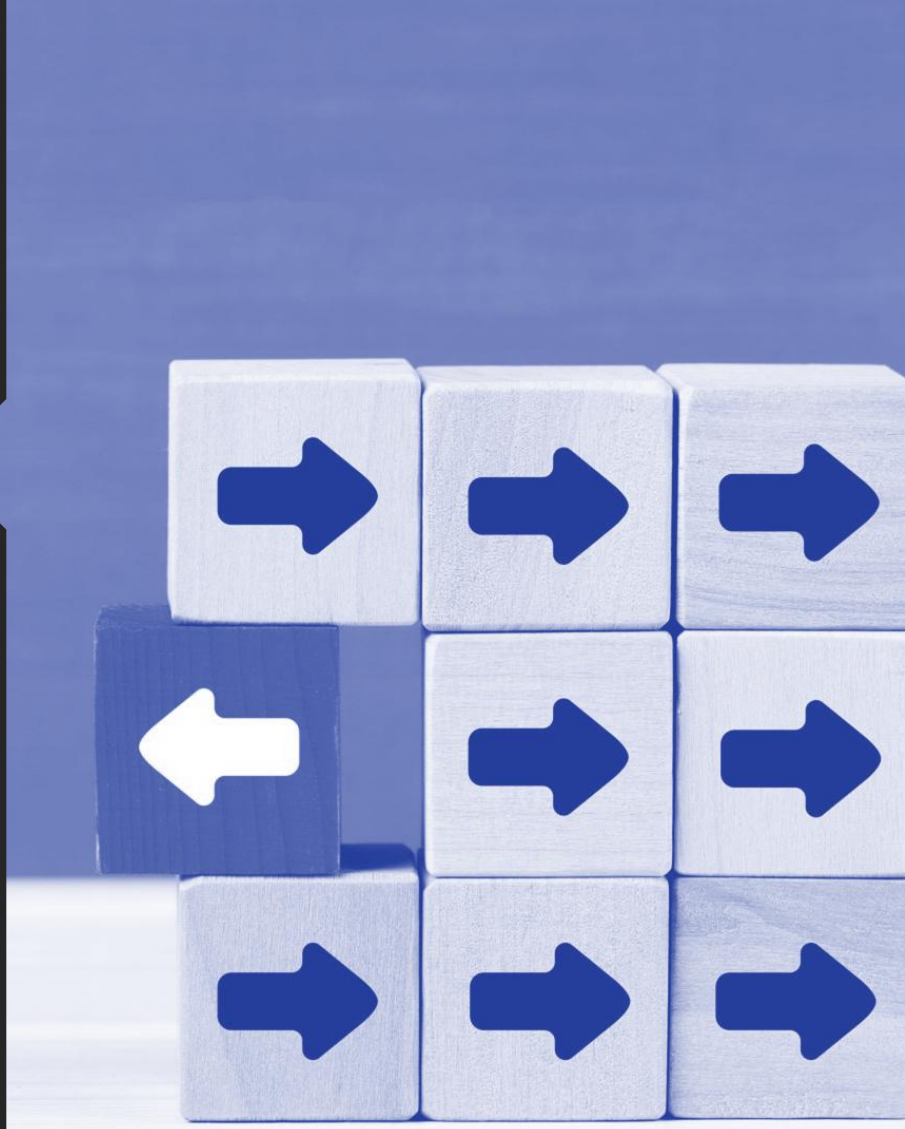
Hands-on training without understanding leads to rote memorization.

Combine with cognitive engagement.

systran
CUSTOM LEARNING SOLUTIONS

'Mistakes Should Be Avoided' Myth

- Errors help retention.
- Allow learners to fail in low-stakes environments and learn from mistakes.



systran
CUSTOM LEARNING SOLUTIONS

'More Content = More Learning' Myth

- Too much information causes overload.
- Prioritize key learning outcomes for better retention.

systran
CUSTOM LEARNING SOLUTIONS

Teaching for Retention, Not Coverage

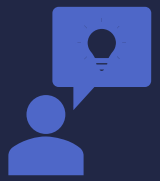
- Use retrieval practice instead of re-reading.
- Emphasize problem-solving and hands-on learning with cognitive engagement.
- Allow learners to struggle in safe environments—errors enhance retention.
- Space learning over time rather than cramming.
- Combine multiple learning modes (visual, verbal, hands-on) instead of relying on 'learning styles'.

Open Discussion

systran
CUSTOM LEARNING SOLUTIONS

Call to Action

Pick ONE strategy to apply next week!



Think: 'How can I make this lesson stick?'

Share your experience with the group

systran
CUSTOM LEARNING SOLUTIONS

Feedback

David Hirsch

dhirsch@systraninc.com

systran
CUSTOM LEARNING SOLUTIONS