


Concurrent Presentation Session  
LEARNING SCIENCE FOR OUTCOMES



# Driving Retention: Using Technology to Support Learning Science

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# Driving Retention

Using Technology to Support  
Learning Science

iFEST – Alexandria, VA

August 27, 2019

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# Why are we here?

*“People are generally going about learning in the wrong ways.”*

Make It Stick

2014 - Brown, Roediger, McDaniel

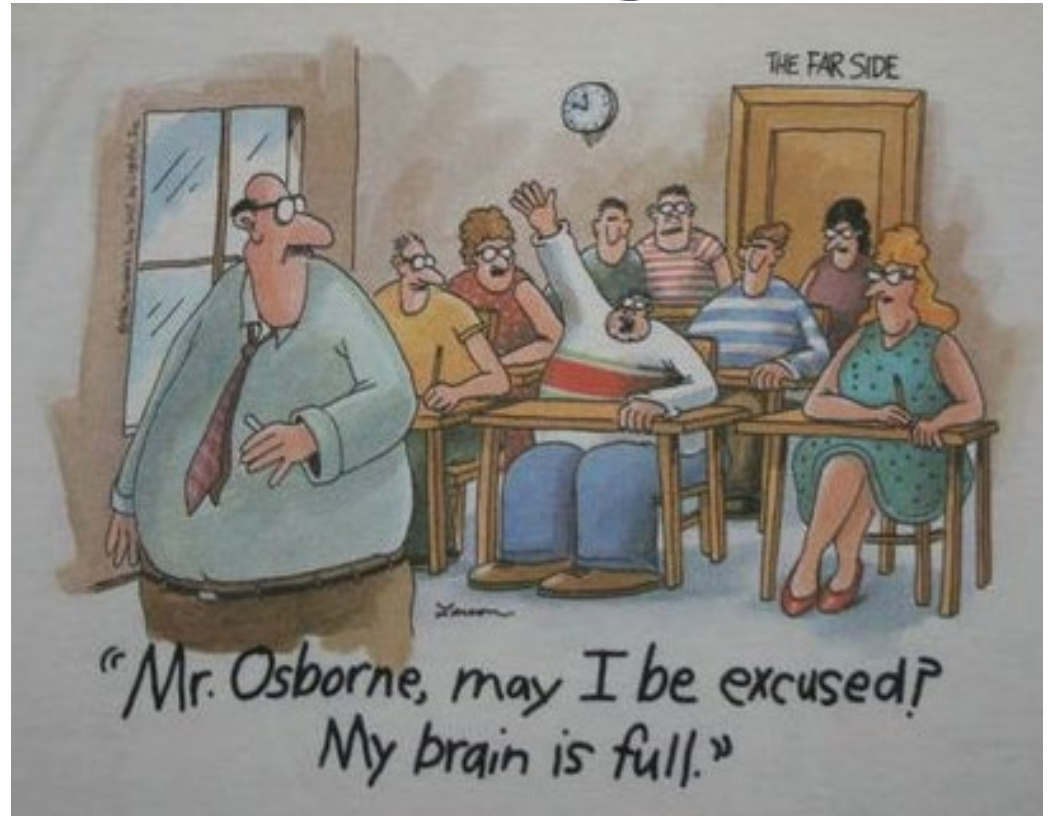


# Challenges to Training

- Low “Knowledge Check” interactivity
- Limited hand-on experience
- Dictated Pace
- Time/Scheduling commitments
- Lack of follow-up post event
- Low SME Interactivity\*
- “Check the box” perception\*

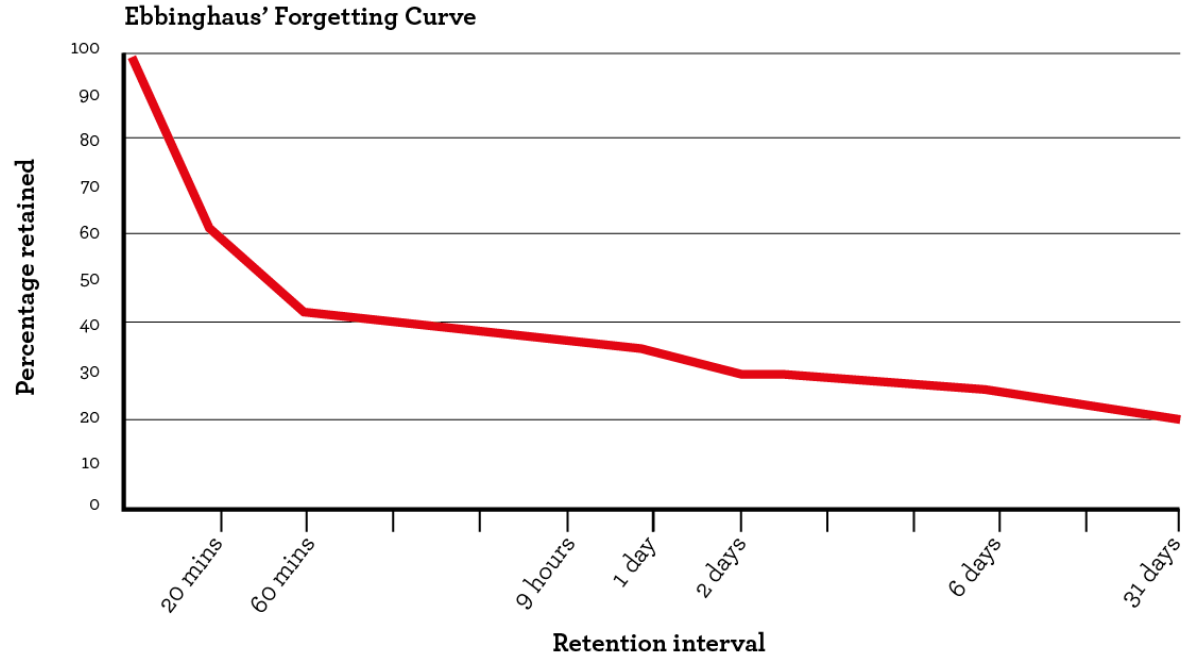
# Massed Learning

Instructor-Led  
E-Learning  
= Cramming



# Learning Decay

Recalled content from learning is rapidly lost due to non-use.



<https://fs.blog/2018/12/spacing-effect/>

# Strategies to promote transfer

- Context
- Informed Instruction
- Problem-Solution
- Experience Foundation
- Reinforcement





# Strategies to promote retention

- Spaced Learning
- Active Recall
- Interleaving



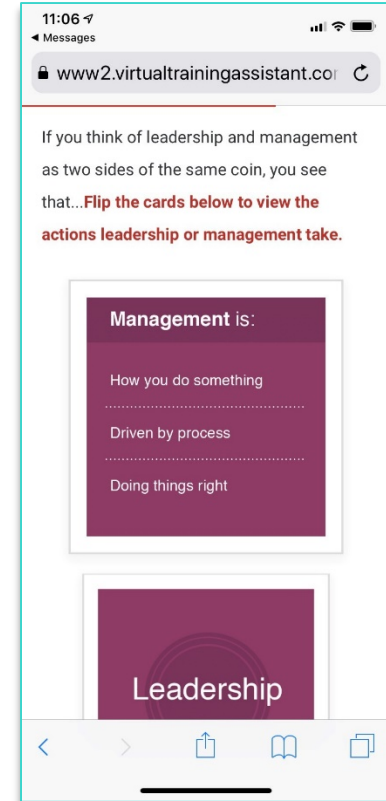
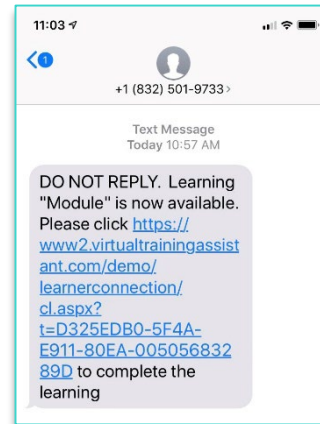
# What is Spaced Learning?

- Delivery of small, repetitive learning experiences
- Delivery separated over time
- Reinforce previous learning
- Build new information
- Proven to improve retention



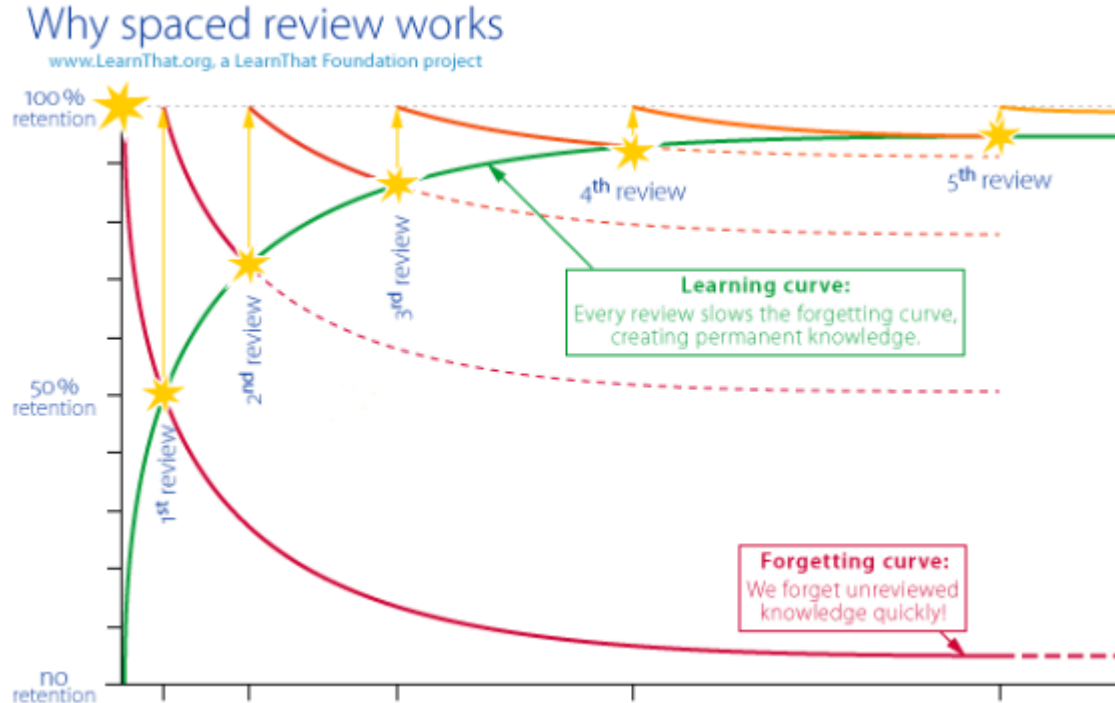
# Spaced Learning

- Spaced learning is a form of micro-learning.
- All micro-learning is not spaced learning.



# Build Over Time

Repeating over time  
builds retainable  
knowledge



# Why aren't we doing it?

- Tracking
- Management
- Development Effort
- Interoperability



# How can xAPI help?

- Tracking learning outside the LMS
- Ability to analyze learner behavior
- Adapt learning to the user

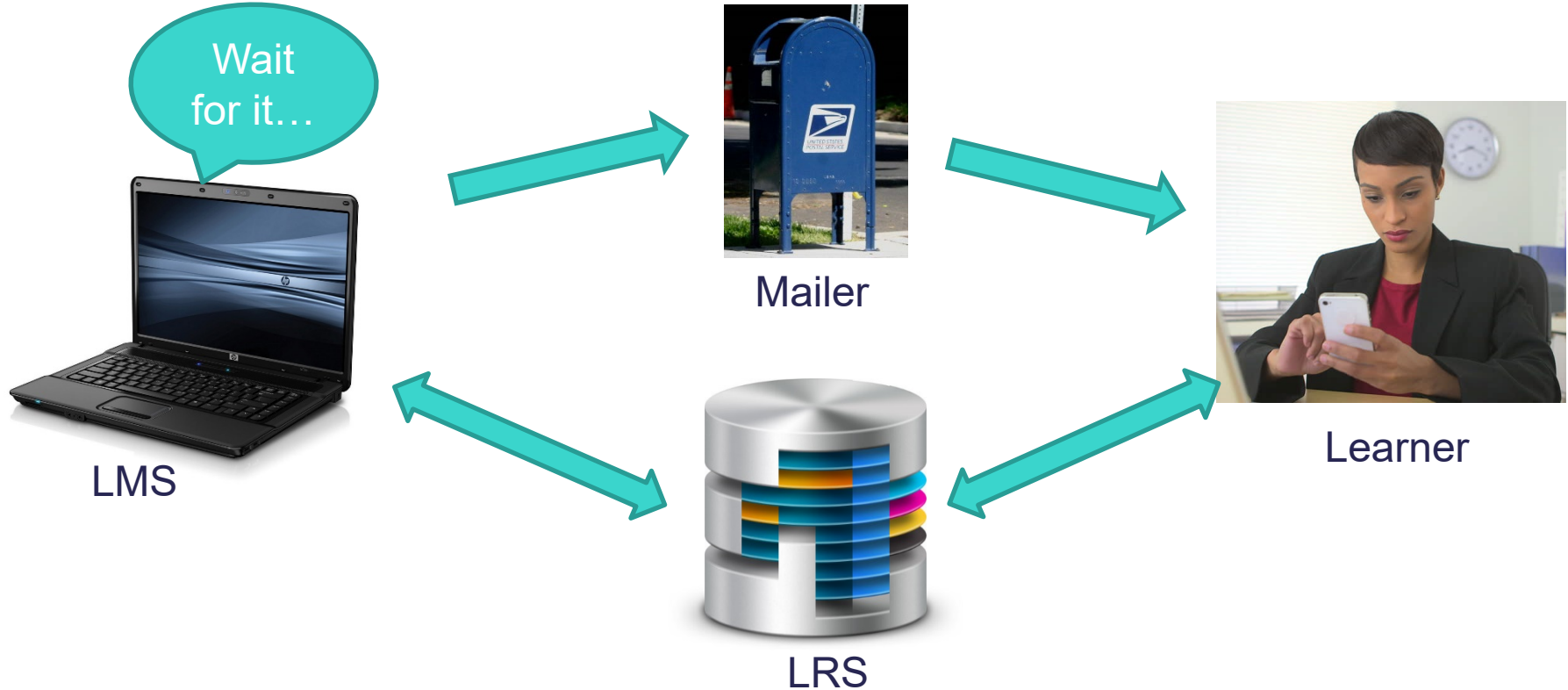


# The Process

## Credentialing, Delivery & Management

- What is our content? **cmi5 or xAPI “package”**
- How do we get our actor? **embedded token**
- How do we schedule frequency? **LMS/LXP**
- How is learning notification delivered? **SMS or email**
- How do we follow up? **SMS/email/reporting**

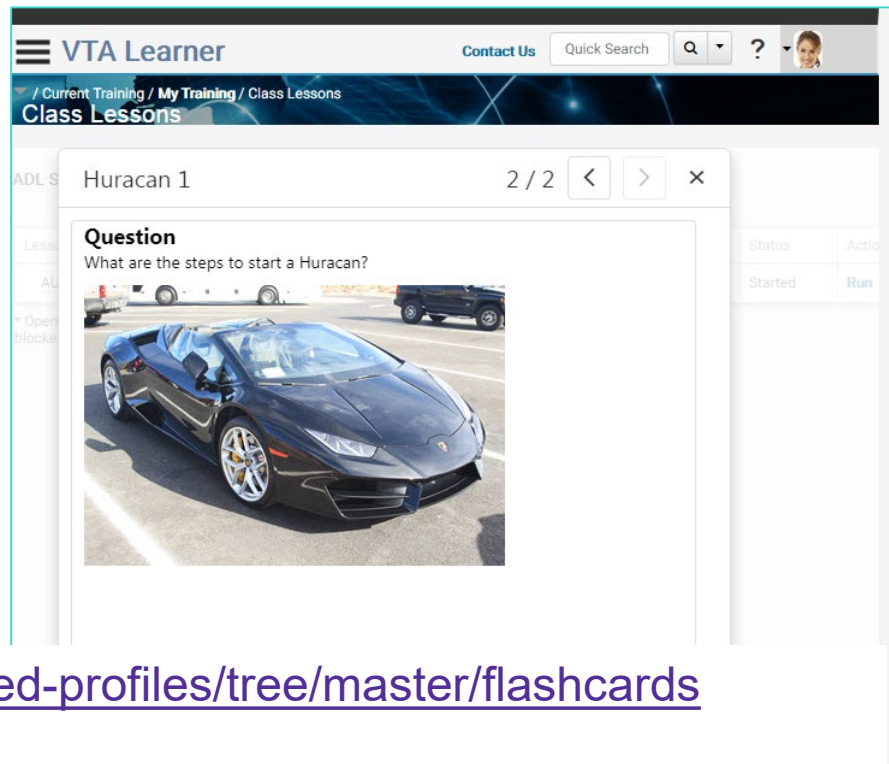
# Delivery





# What is Active Recall?

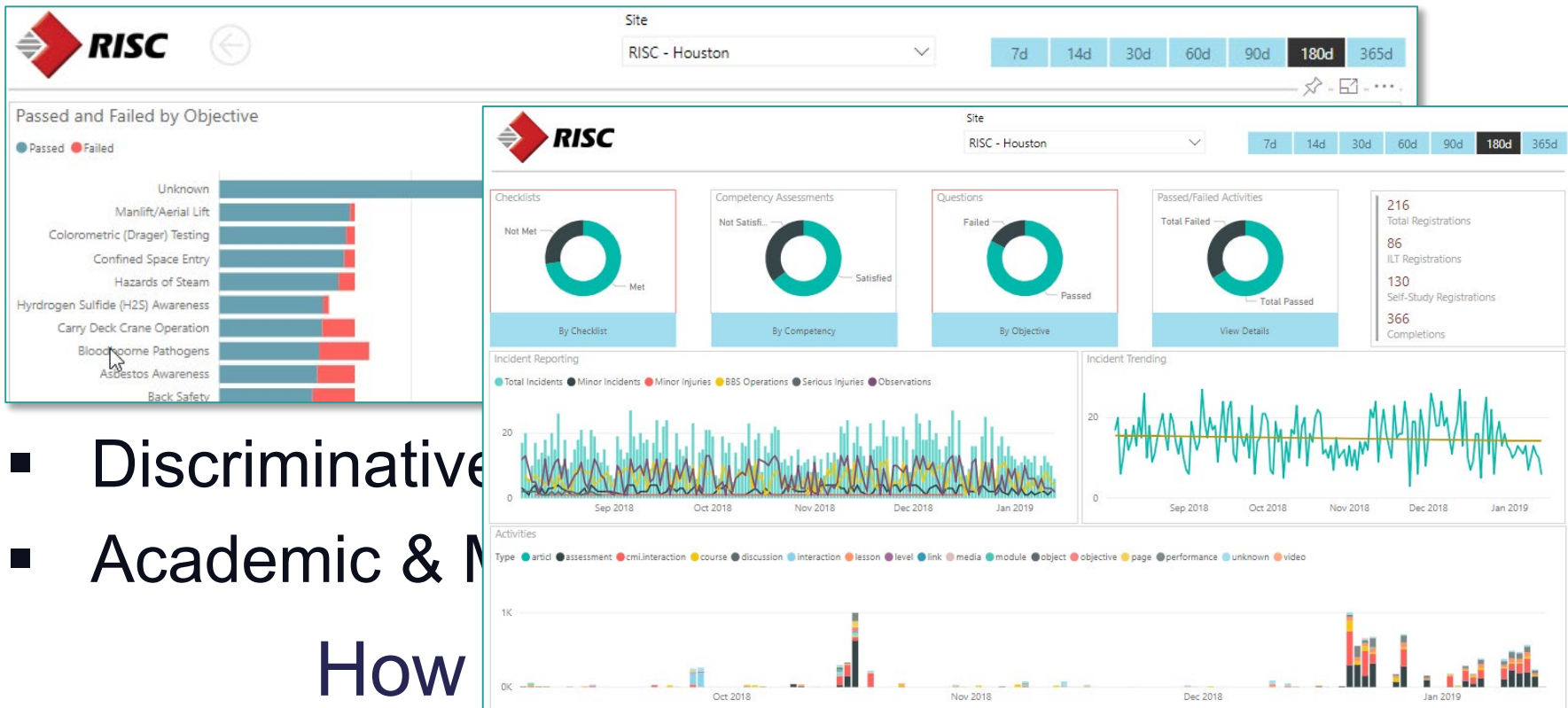
- Stimulate memory
- Testing effect
- Flash Cards
- xAPI Profile



The screenshot shows the VTA Learner web application. At the top, there is a navigation bar with the logo 'VTA Learner', a 'Contact Us' link, a 'Quick Search' box, and a user profile icon. Below the navigation bar, there is a breadcrumb trail: '/ Current Training / My Training / Class Lessons'. The main content area displays a flashcard titled 'Huracan 1' with a progress indicator '2 / 2'. The question asks 'What are the steps to start a Huracan?' and includes an image of a dark blue Lamborghini Huracan convertible. To the right of the flashcard, there is a table with columns for 'Status' and 'Action', containing rows for 'Started' and 'Run'.

<https://github.com/adlnet/xapi-authored-profiles/tree/master/flashcards>

# What is Interleaving?



- Discriminative
- Academic & M
- How

# References

- <https://www.td.org/insights/spaced-learning-an-approach-to-minimize-the-forgetting-curve>
- <https://harvardmagazine.com/2009/11/spaced-education-boosts-learning>
- <https://risc-inc.com/spaced-learning-cmi5-xapi/>
- <https://learningsolutionsmag.com/articles/using-xapi-to-evaluate-successful-completion-of-elearning>

# Thank You!



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