How Adaptive Learning Technology can be used to Improve Teaching and Learning

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MedSim Healthcare Education Company

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Technology Helps Education

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Healthcare Education

E-learning

Simulation

Recording

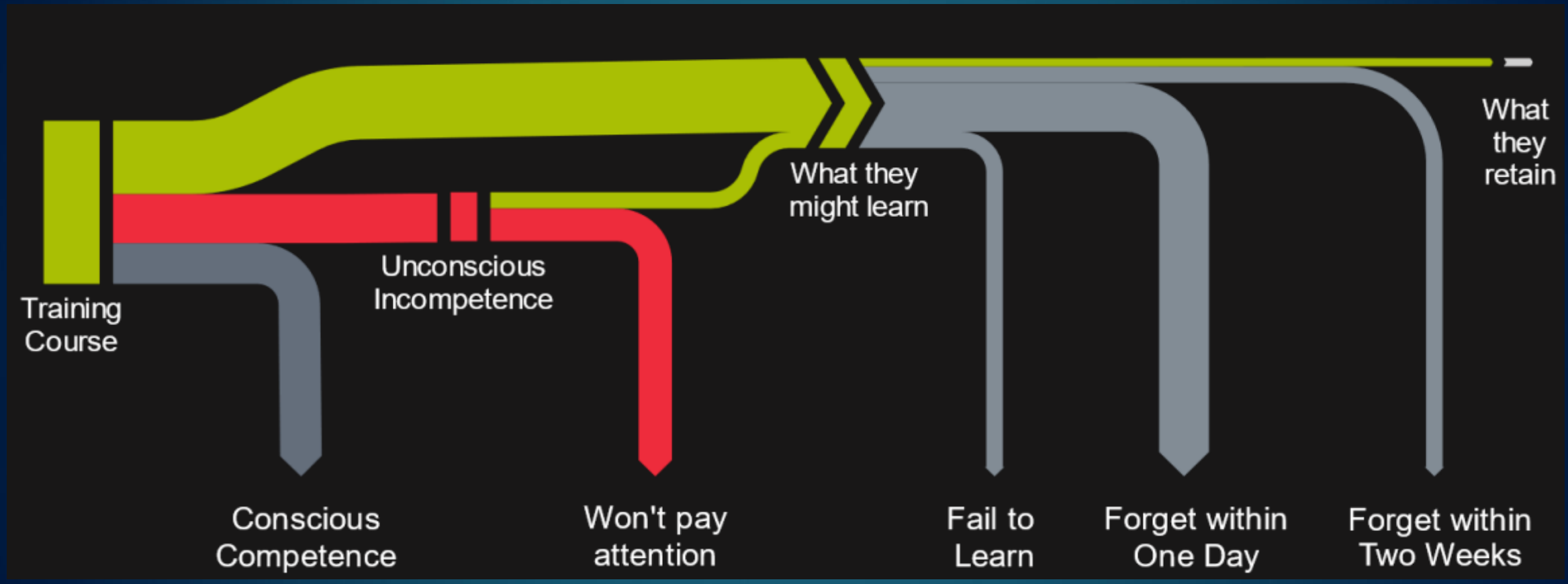
Virtual Reality

Adaptive Learning

Classroom-based training

- Venue
- Time
- Trainer
- Learner
- Administration staff

Traditional Learning Course – Retention Problem



Majority of effort and budget that spent on developing & delivering training courses is wasted.

Why e-learning?

- More cost-effective than traditional education
- It's flexible and accessible
- Retention Rates Are Higher
- Systematic training record
- Lectures Can Be Taken Any Number Of Times

What is the deficiency of existing e-learning?

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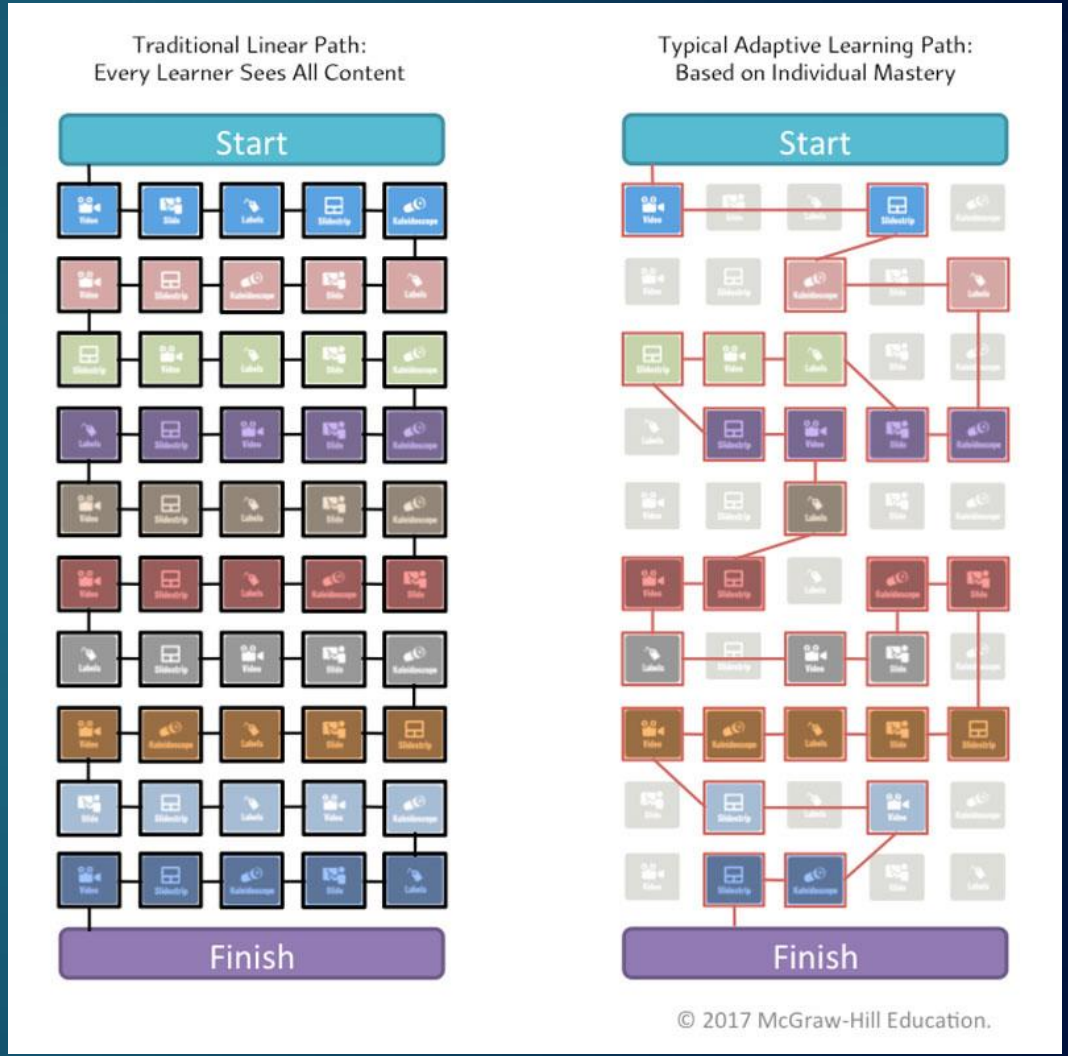
- Too long session
- Not interactive
- Lots of internal resources to maintain the platform and create online course
- All students in different level need to go through same content
- Instructors are difficult to guarantee students to learn effectively
- Training record is not detailed enough to show students competence

Adaptive learning

What is Adaptive Learning?

- **1 to 1 Learning** but not traditional e-learning with restricted learning path

- By using a personalized approach to replicate one-to-one interaction in a digital environment



Why Adaptive Learning?

HOW Adaptive Learning DIFFERS from Traditional E-Learning

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Tradional E-Learning	AI Powered Adaptive Learning
The same for everyone	Adapts to the indivdiual
Content comes first, then questions	Only shows content when it's necessary
Ignores what the student already knows	Takes into consideration what the student already knows
Starts from the beginning every time	Follows up on only what the student is having trouble with
Learner responsible for retaining new knowledge	AI helps learner to retain new knowledge
Demotivated students because content doesn't feel relevant or personal	Highly personalized content keeps students motivated

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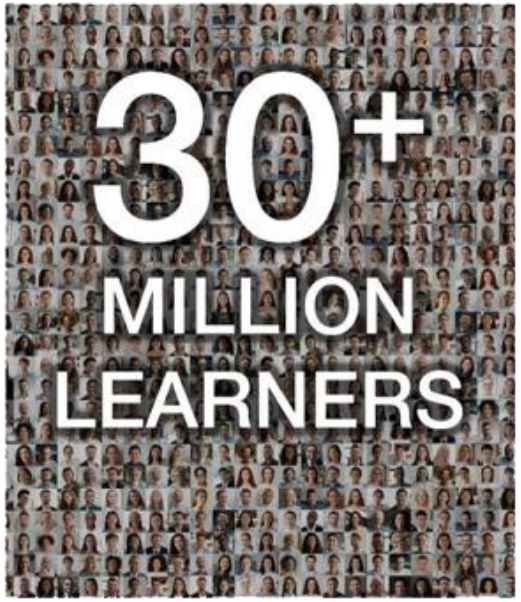
AREA9 RHAPSODE™

FOURTH GENERATION ADAPTIVE LEARNING

Area9 LYCEUM

area9 LYCEUM



DEEP PARTNERSHIPS 1997 - 2022

Coloplast abbvie Lloyd's Register kaspersky TRACKMAN HITACHI Inspire the Next Collins THE WORLD BANK gsk SHINOLA DETROIT VOLVO

Thieme JB&JS Thomas's NOVARTIS RQI NEJM GROUP AAK RelyOn Nutec 360° Safety ABB

Webinar on Nursing Education Training

MedSim Healthcare Education

Hong Kong Society for Nursing Education

Mission: To achieve excellence in nursing service through the enhancement of quality nursing education

Talking: CHUNG, okjoyce [SN]

Webinar on Adaptive Learning on Nursing Training

Date: 25 November 2020
Time: 19:00 – 20:00 (HKT)
Venue: Online via Zoom

Speaker: Dr Khurram Jamil, MD

President – Strategic Initiatives, Area9 Lyceum

earning on Nursing Training

Speaker: Khurram Jamil, MD, President – Strategic Initiatives, Area9 Lyceum After earning his medical degree in 2002, he chose to advance health care outside the clinical area. He co-founded Area9 in 2006, partnering with McGraw-Hill to deploy adaptive learning technology. Since then, more than 30 million students have used LearnSmart & SmartBook (property of McGraw-Hill Education – acquired in 2014).At Area9, which is a global learning technology company, Khurram focuses on regional expansions, joint-ventures and partnerships, as well as oversees projects for all levels of education and training. His entrepreneurial experience extends over 20 years. He has led dozens of teams comprising of medical professionals and educational scientists, spearheaded large development and partnership efforts, and managed multi-million-dollar educational software development projects.Dr. Jamil is a cultural bridge builder and is involved with various cultural & art organizations to support building creative and reflective societies. Amongst these, he serves on the Education Council of the Center for Global Education (CGE) at Asia Society. Full Bio: https://www.linkedin.com/in/khurram-jamil-81b752/

Why Area9 LYCEUM?

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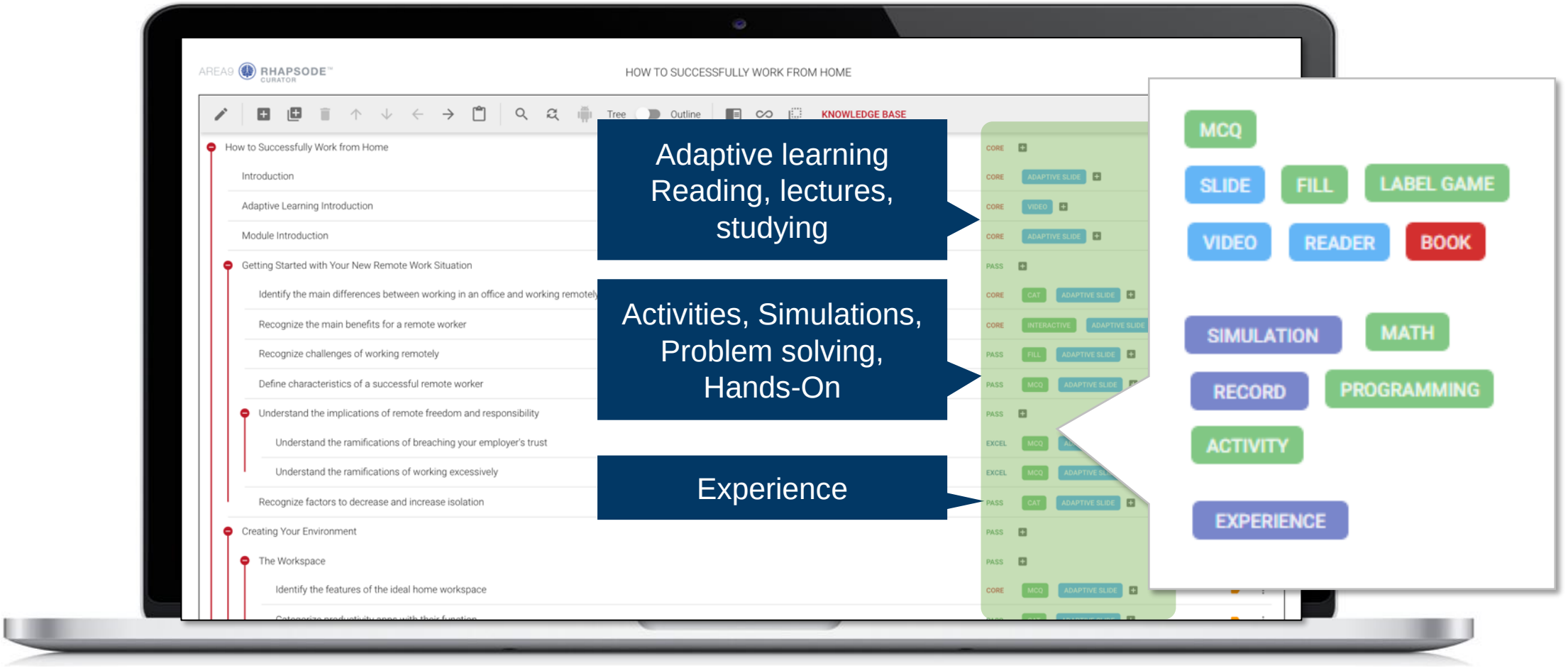
- achievements in learning technologies

User-friendly Platform, Interactive Content

Easy access and creation of content, enabling frequent updates and deployment.



UNIQUE **PATHS** TO **PROFICIENCY**

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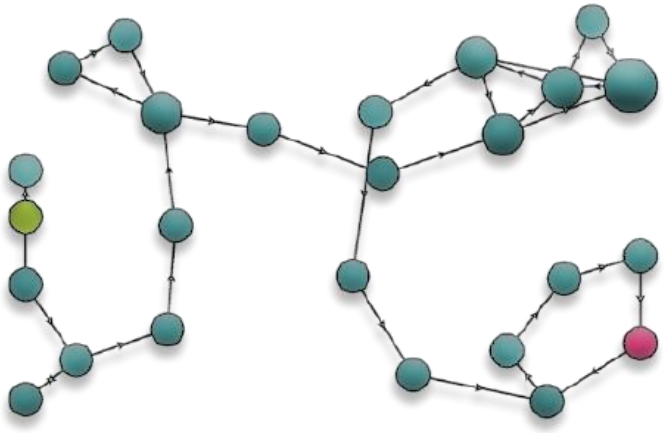
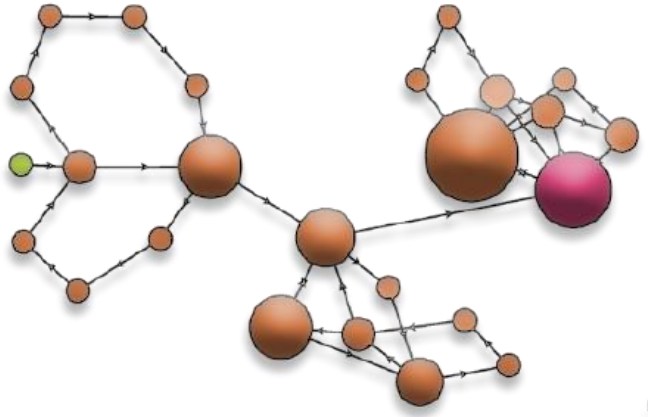
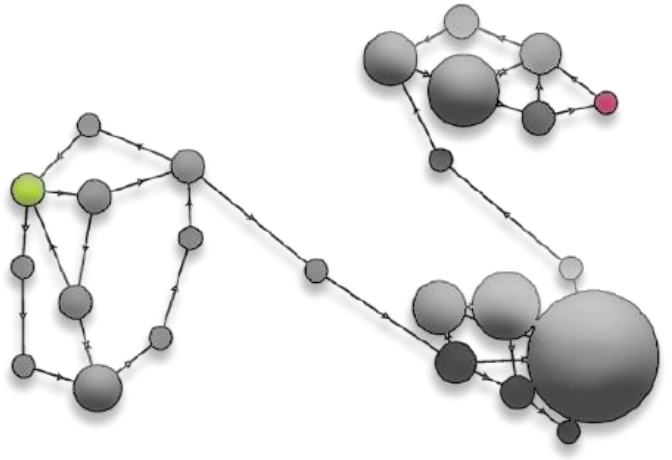




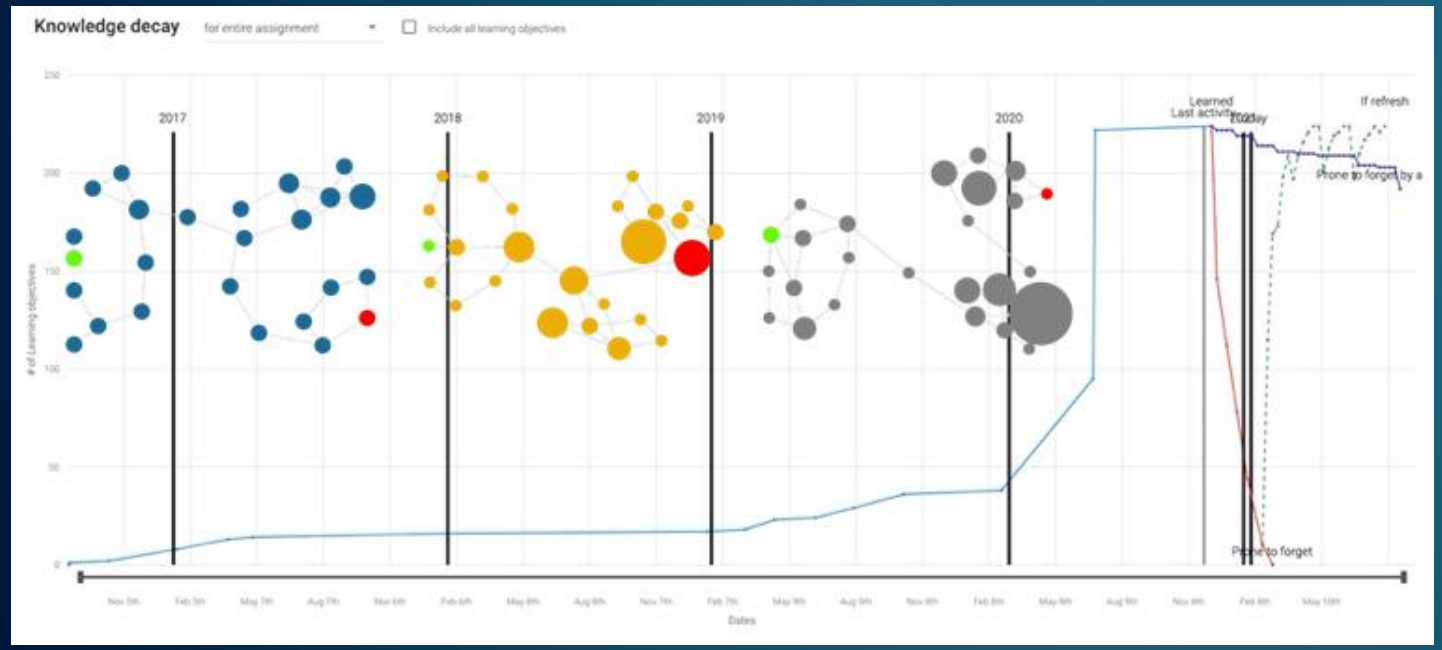


	Learner 1	Learner 2	Learner 3
Final	100% proficient 8m 25s	100% proficient 19m 39s	100% proficient 33m 40s
Initial	88% correct 9% consciously incompetent 3% unconsciously incompetent	52% correct 7% consciously incompetent 41% unconsciously incompetent	47% correct 29% consciously incompetent 24% unconsciously incompetent

The Adaptive Principle

Recreates **at scale** the optimal teaching **approach of a one-on-one personal tutor.**

Reinforcement (Refresh)

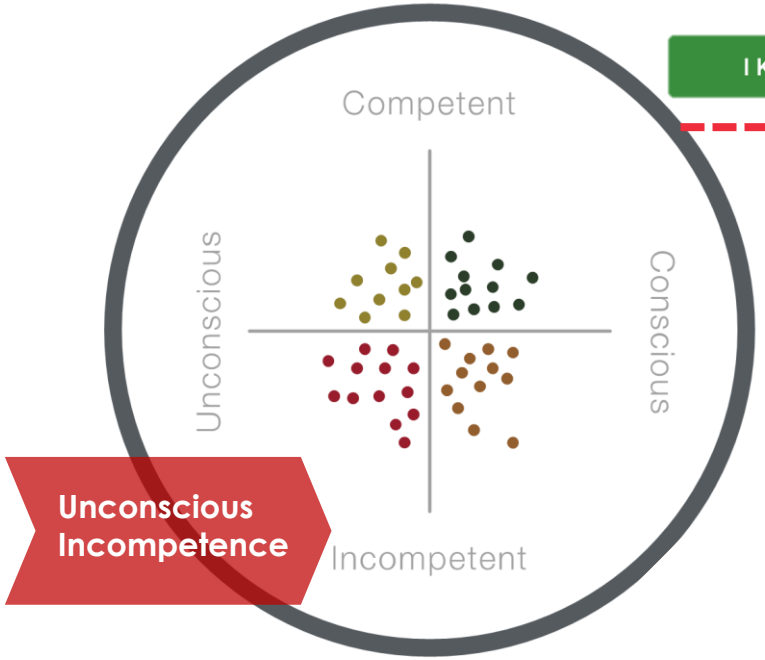


Reinforcement (Refresh):

Reduced memory decay is secured by personalized (future) revisits and retraining of most critical learning objectives.

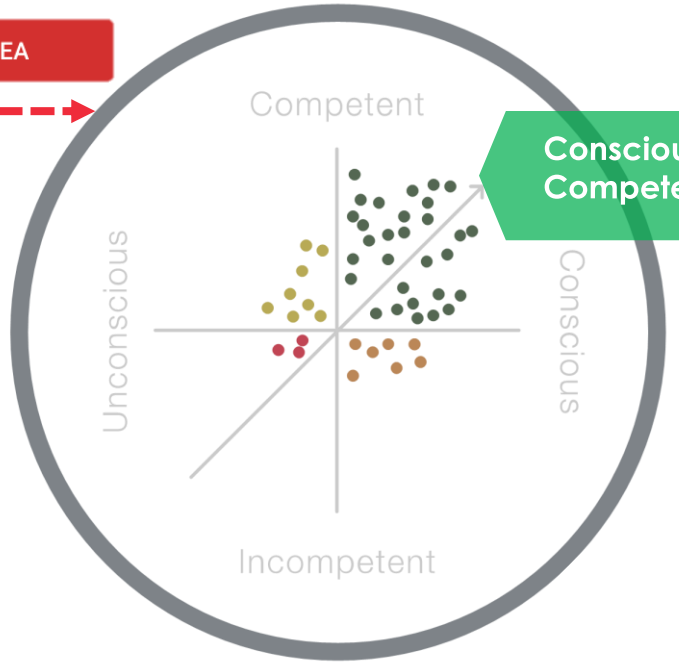
METACOGNITION

Training



Unconscious Incompetence

I KNOW IT | THINK I KNOW IT | NOT SURE | NO IDEA



Conscious Competence

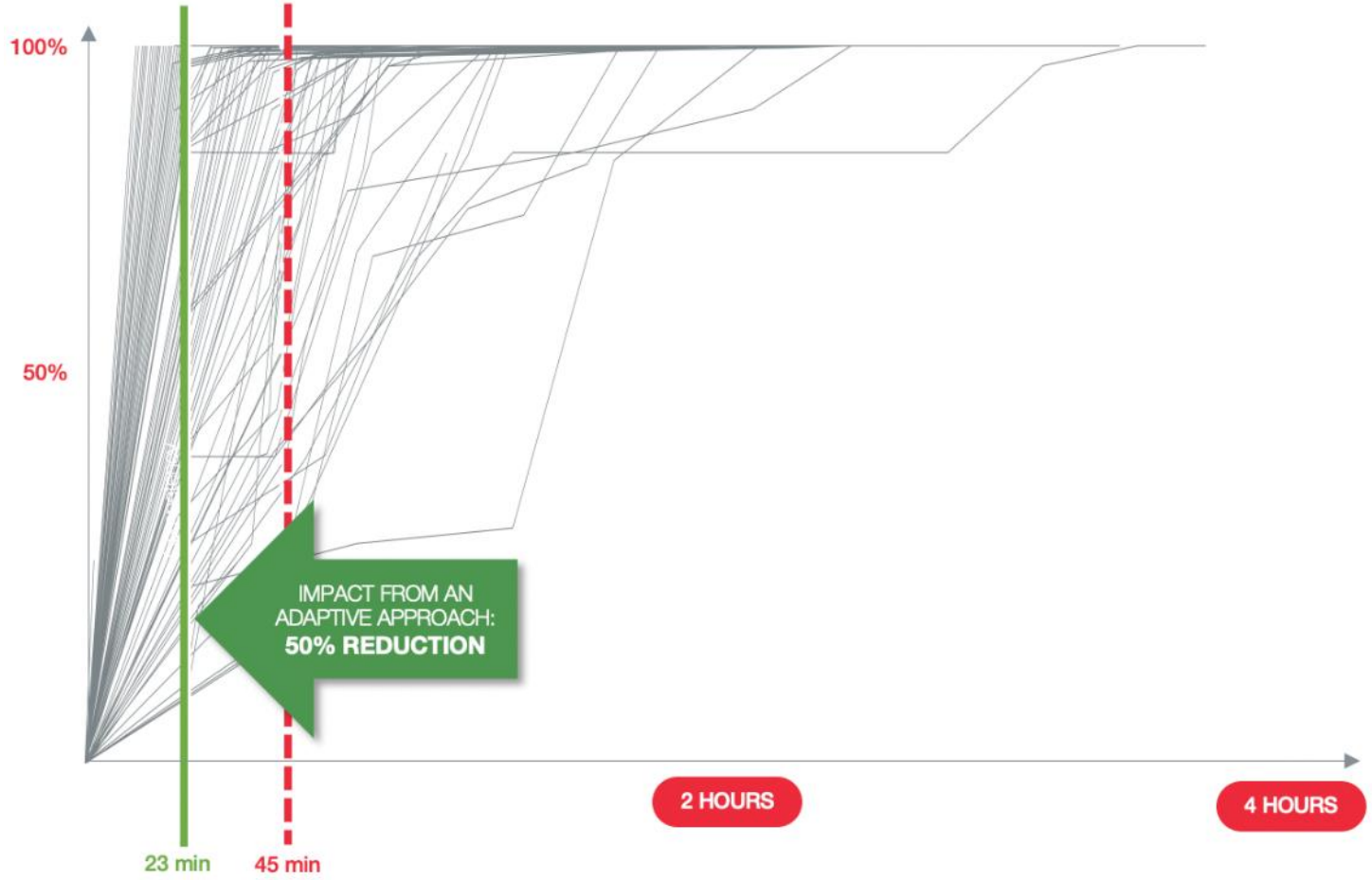
Unconscious Incompetence:

When learners are certain (confident) that they know something, when in fact they are wrong.

Fast Identification and Elimination of Misconceptions:
Misconceptions are immediately captured, remediated for, and later reinforced via the Refresh function.

Accelerated Learning

Uses **AI** and **intelligent technologies** to adjust and deliver optimal learning experiences in real time.

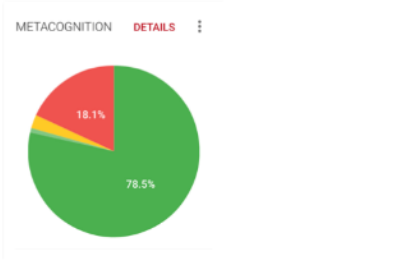


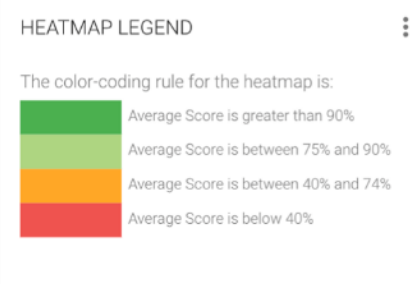
HIGH IMPACT – HIGH RELIABILITY

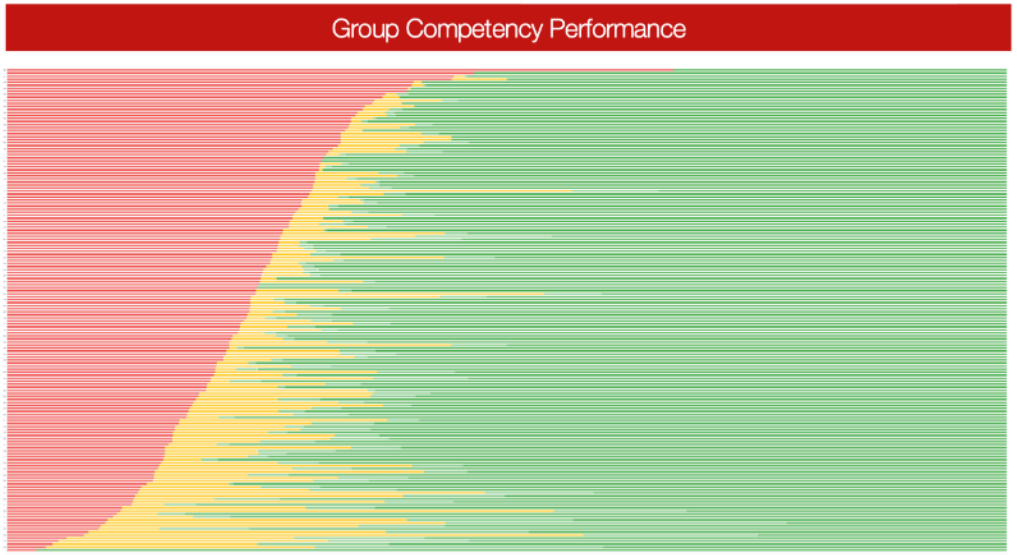
- 50% faster learning initially
- Up to 10 times faster refresher learning
- Empowers teachers to focus better
- Everybody succeed

Analytics

Granular tracking, people performance

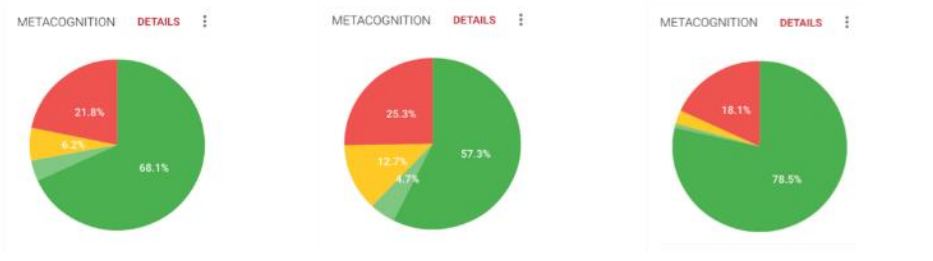


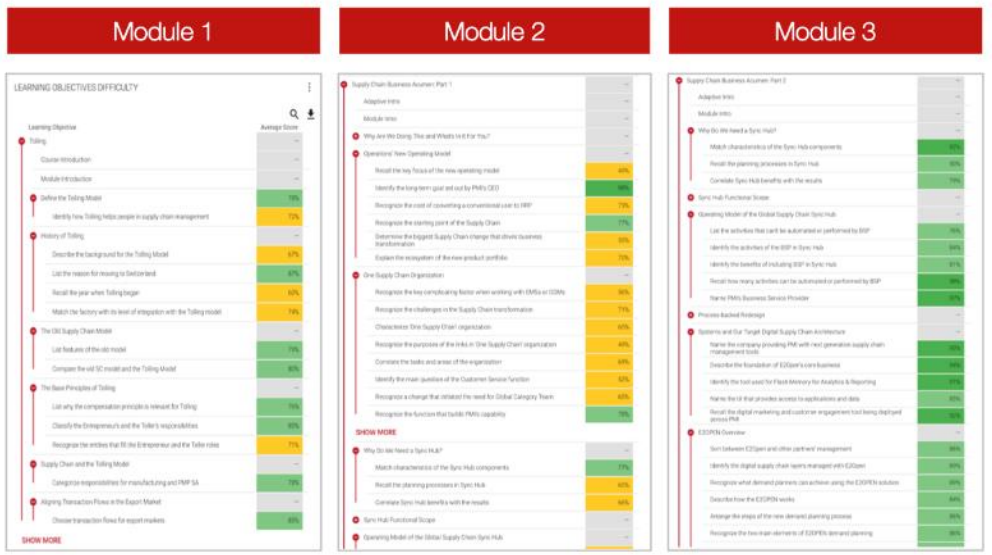




PEOPLE PERFORMANCE ANALYSIS: ARE OUR PEOPLE AT RISK?

Granular tracking, content performance





CONTENT PERFORMANCE ANALYSIS: ARE OUR PEOPLE LEARNING OR DO WE NEED TO IMPROVE THE MATERIAL?

Case Studies

The New England Journal of Medicine

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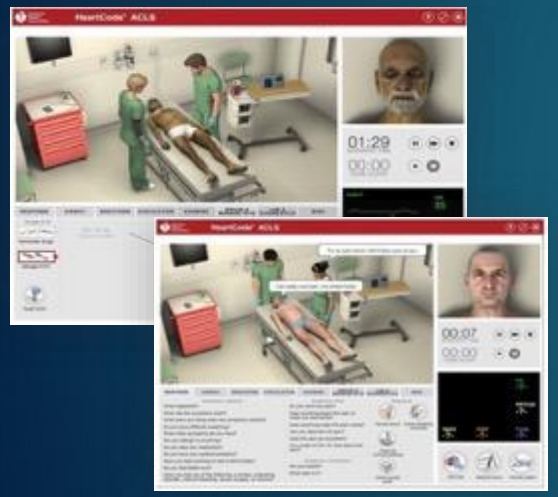
CLASSROOM > DIGITAL > HYBRID

AMERICAN HEART ASSOCIATION 2002 -



Reduced a 2-day face to face course to 3-5 hours using digital learning and simulation. Millions of health providers have to date used these products to get there ACLS and PALS mandatory certifications in the US (ACLS = Advanced Cardiac Life Support, PALS = Pediatric Advanced Life Support)

NATIONAL SAFETY COUNCIL 2015

Reduced a 3 days classroom training to 16 modules of Adaptive courses. The average time to proficiency for the Supervisor Safety Development program is 10 hours but the best students managed to get through in only 4 hours

NEW ENGLAND JOURNAL OF MEDICINE 2013 -

NEJM Group and Area9 partnered in February 2013 to create the first-of-its-kind platform with smart technology that **adapts to clinicians' learning goals, pace and knowledge gaps** to deliver the information they need to know.

Ground School Training for Aviators

- Lockheed Martin Jet Pilot Training Study: **63% in the blended learning (adaptive learning) vs 29% in pure classroom group passing test 10 week later**

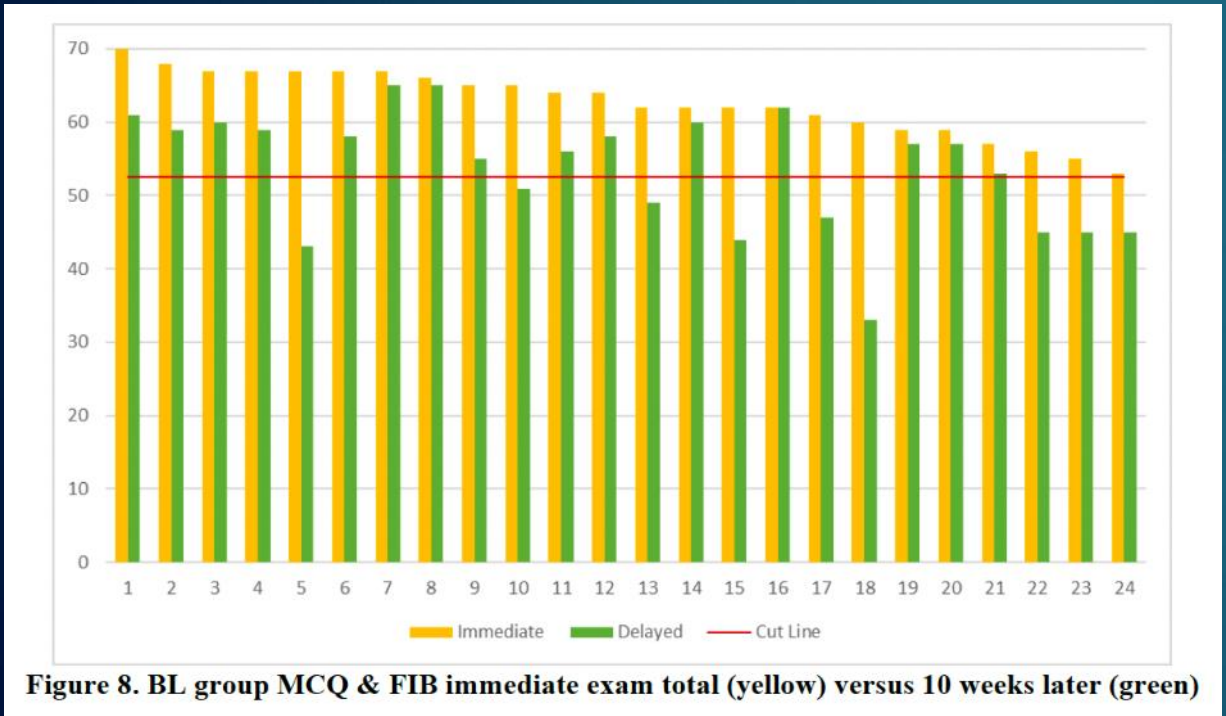
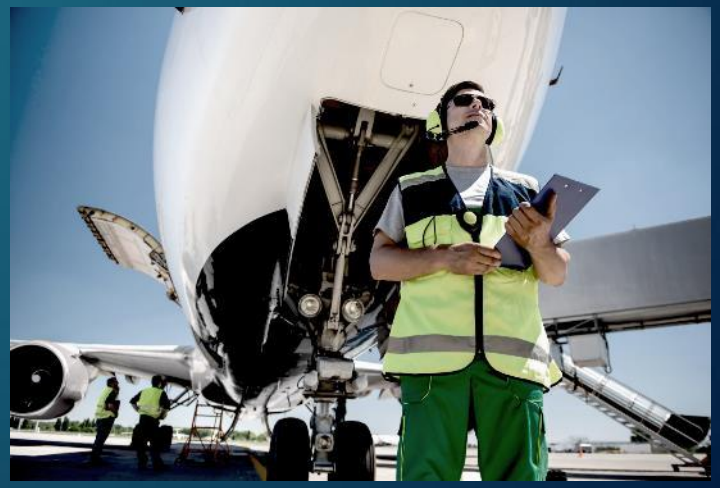


Figure 8. BL group MCQ & FIB immediate exam total (yellow) versus 10 weeks later (green)

- blended learning offers a path for improved knowledge retention
- benefit trainees in subsequent training



Source: Blended and Adaptive Learning in Ground School Instruction for Aviators Paper presented December 2021 at Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC)

How Adaptive Learning helps YOU in Teaching and Learning?

Instructors

- Spend less time on providing lecture
  - Focus more on discussion, experience sharing, interaction in tutorials
- More efficient to identify the topics that students spend more time to study
  - Detailed training record to know students' competence and learning progress

Students

- Reduces 50% of time spent on learning
  - More engaged in learning
- More prepared for the instructor-led session
- Focuses prioritized refresh content right before it might be forgotten

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Thank you!

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