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The Readiness Signal

From Training → Mission Competency



PRESENTER

FedLearn



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FedLearn Founder and Chief Executive Officer

- Retired Naval Intelligence Officer. CVW-8 / Carrier Battle Group deployments
- Three decades in U.S. Department of War (DoW)/Defense and Intelligence Community (IC)
- Two decades as award-winning learning and development executive, federal sector
- Doctorate of Education. University of Pennsylvania

FedLearn — AI-powered training purpose-built for DoW and IC.

ABOUT FEDLEARN

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Purpose-Built for National Security Workforce

Mission-Contextualized Content

Artificial intelligence (AI) and data online training built specifically for defense and intelligence environments—not repurposed commercial curricula.

Exclusive Federal Focus

Designed around DoW/IC workforce structures, role taxonomies and classification-aware learning constraints

Validated Outcome Data

AI-powered adaptive learning platform can measure knowledge transfer and learner engagement in real time and competence via the FedLearn Mission Readiness Knowledge Index (MRKI). Supporting Defense Intelligence Agency, Defense Information Systems Agency, Defense Threat Reduction Agency, National Security Agency, U.S. Space Force and beyond

Outcome-based measurement of readiness—not proxy metrics—is the foundation of everything we build.

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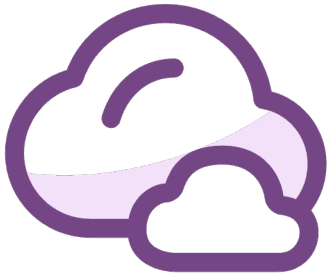
How to change the design



In one word, how does your command measure training readiness today?

ⓘ The Slido app must be installed on every computer you're presenting from

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THE PROBLEM

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Does this mean they're ready?

100%
Course Complete

✓
Certification Earned

40
Continuing Education Units (CEUs) Logged

These are proxies. Not evidence.

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> Insanity is doing the same thing over and over and expecting different results.

– attributed to Albert Einstein

We've measured readiness the same way for 50 years.

A BRIEF HISTORY OF TRAINING READINESS

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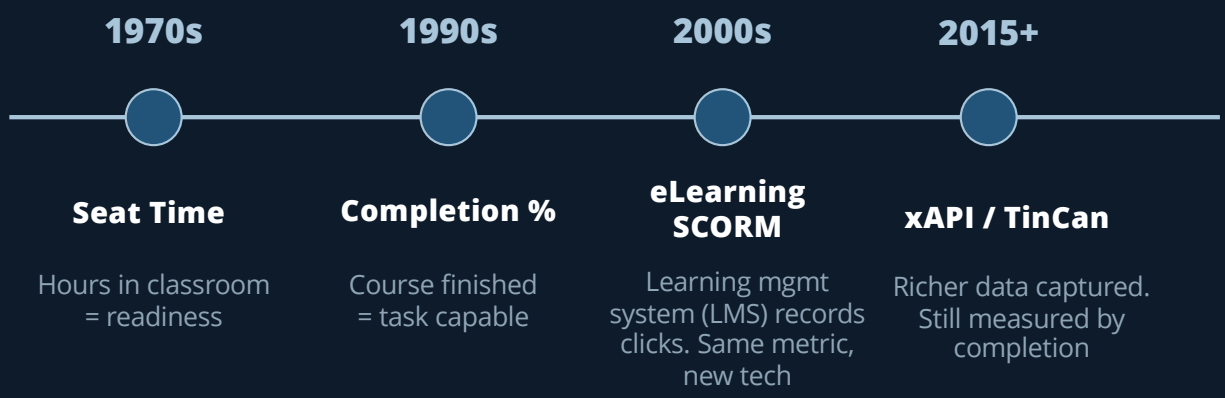
50 Years of Proxies



The data got richer. The question never changed.

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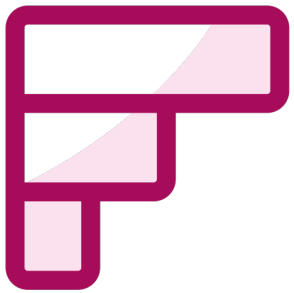

Which question would matter most to your commander?

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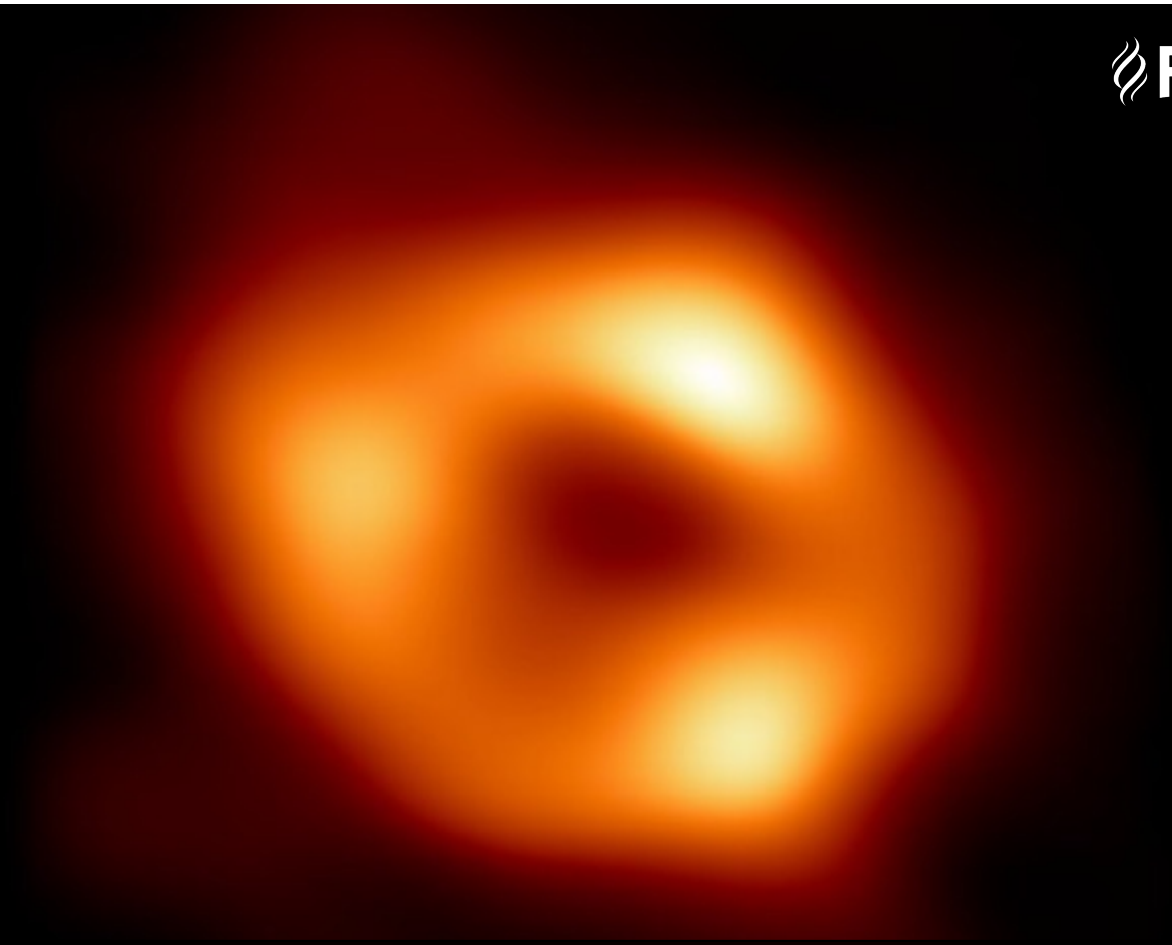

The “black hole” of online training

Data goes in. Completion rate comes out. What happened inside? Nobody knows.

Photo: EHT Collaboration

THE CAPABILITY GAP

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What We Currently Report

- Course completion rates
- Certification counts by unit
- CEU totals per learner
- Time-on-platform metrics
- Pass/fail on final exam

VS

What DoW/IC Leaders Actually Need

- Who can perform the task today?
- Which of my personnel are struggling now?
- What are knowledge gaps by unit?
- Is training translating to capability?
- Who's ready for the next challenge?

THE SIGNAL HAS BEEN THERE ALL ALONG

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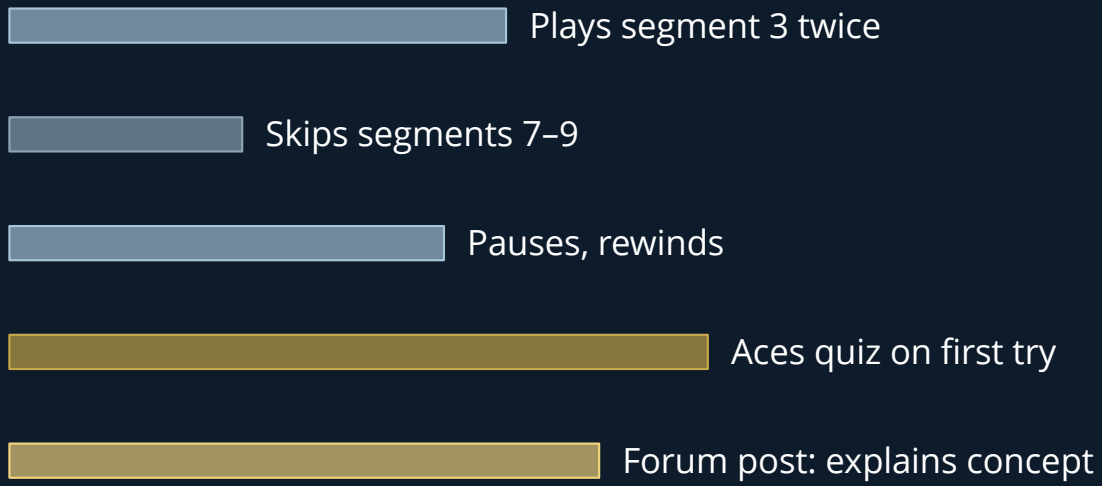
Every Learner Leaves a Trail



Training Telemetry

› Clickstreams

› Assessment responses

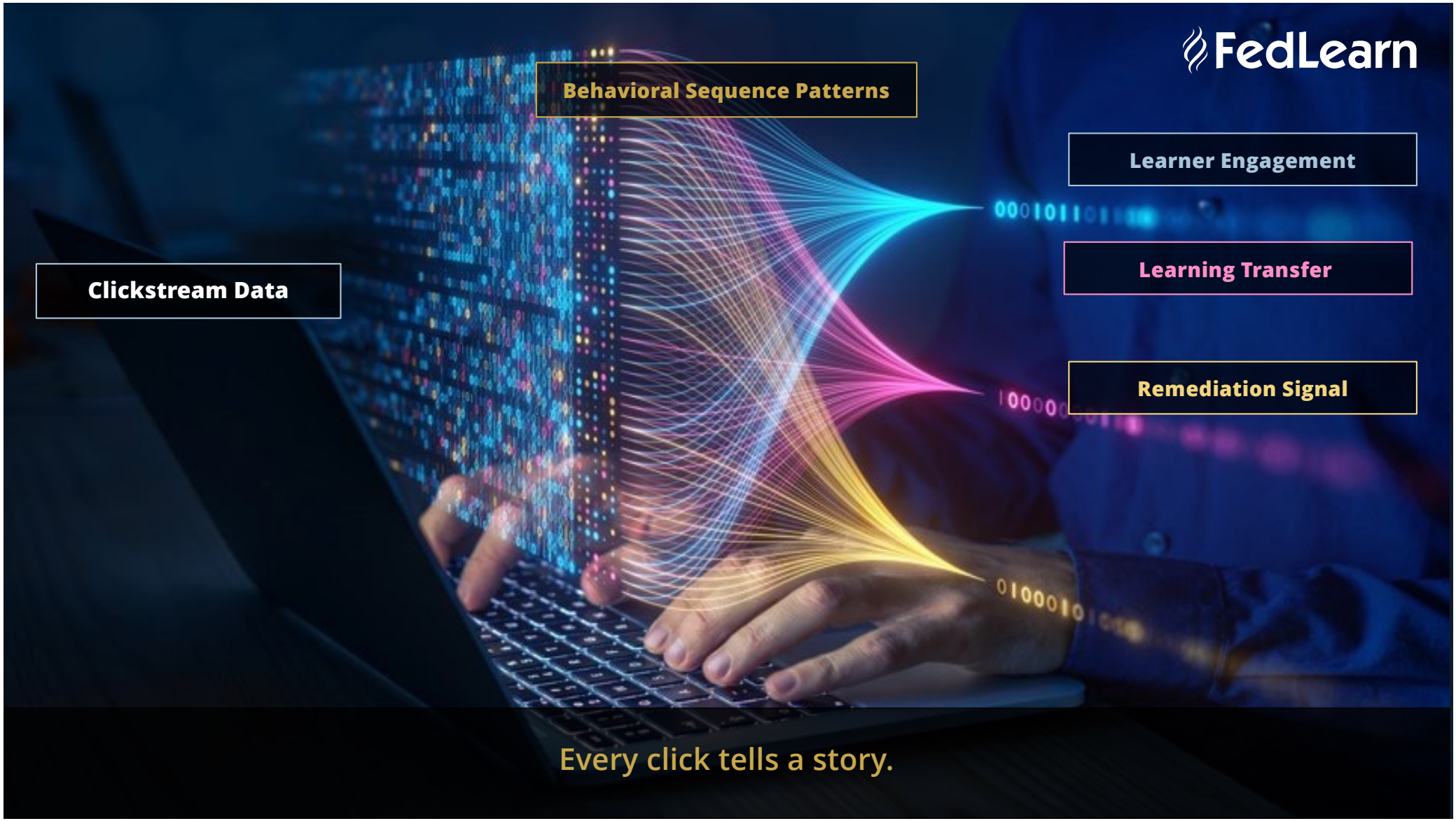
› Time-on-segment

› Replay behavior

› Forum participation

› Content embeddings

Learners have been generating the signals.
We just haven't been listening.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Behavioral Sequence Patterns
Learner Engagement
Clickstream Data
Learning Transfer
Remediation Signal
Every click tells a story.

THE OUTCOME-BASED APPROACH — BEHAVIORAL ENGINE

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From Clicks to Competence States

1

Raw Clickstream

Every interaction captured.

2

State Translation

High/low engagement
Revisit · Skip · Pause

3

Sequence Modeling

Recurrent neural network learns latent knowledge transitions.

4

Competence Vector

Continuous knowledge/skill estimate per learner

Behavioral Prediction Engine/Model 90%+ confidence-level)
Operates on learner telemetry—no new instrumentation required.

WHAT THE ENGINE PRODUCES

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Three Outputs That Change What's Possible

	WITHOUT	WITH OUTCOME-BASED TELEMETRY	CONCRETE EXAMPLE
01 Prerequisite Mapping	✗ Instructional designers guess at course sequencing based on subject matter expertise.	✓ The system empirically infers which concepts must be mastered before others from behavior—not assumption.	Learners who skip module 2 fail module 5 at 3× the rate → system maps the dependency automatically.
02 Early Struggle Detection	✗ Struggling learners are identified at the final exam—after the learning window has closed.	✓ At-risk learners are flagged at segment 3 of 12 while there is still time to intervene.	Passive scroll pattern + two missed quiz attempts = high-confidence struggle signal; no assessment needed.
03 DoW/IC Skill Taxonomy Alignment	✗ Competence scores are generic—a number with no operational meaning to a commander or planner.	✓ Every competence vector maps to role-specific knowledge, skills, attributes and tasks (KSATs) so outputs speak the language of the workforce.	Data analyst role · task T0223 · current competence: 0.71— actionable not abstract

THE OUTPUT — TRAINING READINESS INDEX

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Turning Learning Telemetry into Readiness

SCORE	LEVEL	READINESS	INTERPRETATION
91 – 100	Expert Mentor level	Fully Ready	Exceptional mastery. Minimal guessing, high engagement, strong cross-context application. Ready to lead or mentor others.
81 – 90	Proficient High readiness	Mission Ready	Strong retention and contextual application. Operates with confidence across role-based tasks.
61 – 80	Competent Ready	Role Ready	Clear evidence of knowledge transfer with sustained engagement and reduced guessing. Competent for role-based tasks.
41 – 60	Developing Partial readiness	Needs Reinforcement	Some learning demonstrated, but inconsistent retention and application. Requires reinforcement before mission-critical tasks.
0 – 40	At Risk Low readiness	Not Ready	Limited knowledge transfer. High guessing, low engagement. Not competent or mission ready — intervention required.

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What is the biggest barrier to adopting AI-powered behavior-based readiness in your org?

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Learning Telemetry Provides Results



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The Question DoW/IC Leaders Can Finally Answer

"Who across my unit can execute this mission-critical task right now?"

Traditional Approach	Outcome-Based Approach	Aligned to
Completion rate: 87% No insight into who actually knows what	14 Sailors: competent-level 9 Sailors: struggling on Module 4 3 Sailors: expert-level	DoW or U.S. Navy skill taxonomies DoW Chief Digital and AI Office data work roles Unit mission requirements

The mission doesn't care about completion rates.

It cares about who can perform.

- Training telemetry is being generated in online training. We just haven't been listening to the signals.
- A behavioral engine translates raw clickstreams into engagement states and competence/readiness vectors.
- Sequence patterns identify mastery, struggle and expertise—independent of assessment scores.
- The result: evidence of who can perform required tasks today

Questions & Discussion

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Thank you for your kind attention!