Beyond AI Literacy: Building Cognitive Readiness, Digital Dexterity, and Ethical Command in the AI Age

DAFITC 2026 Breakout Session
Track #4 – Upskilling for the AI Age

Major Kimberly Shore
Dr. Daniel Connelly
Jeremy VanEgmond

Introductions

- Major Kimberly Shore
  87th Communications Squadron Commander at JBMDL
- Dr. Daniel Connelly
  Associate Professor, Department of Leadership, Air Command and Staff College
- Jeremy VanEgmond
  Chief, Eagle Institute at Air University



Kim Shore, Major, USAF

- Cyberspace Professional (17D)
- Commander, 87th Communications Squadron, Joint Base McGuire-Dix-Lakehurst (JB MDL)
- Love audio books, card games, & VR(*time permitting*)





Yes! This background was 100% generated by ChatGPT

Introductions

- Major Kimberly Shore
  87th Communications Squadron Commander at JBMDL
- Dr. Daniel Connelly
  Associate Professor, Department of Leadership, Air Command and Staff College
- Jeremy VanEgmond
  Chief, Eagle Institute at Air University

Session Roadmap: 3 Main Points

Opening / Framing

Part I – Cognitive Readiness (Kim)
Individual/biological impact of technology

Part II – Organizational & Ethical Impact (Dan)
Organizational/cultural impact of technology

Part III – Digital Dexterity (Jeremy)
A constructive response/Education wins

Discussion / Q&A

Disclaimer

This is not our rejection of the tool [AI] at large, for *"being concerned is not the same as being fearful."*

Dr. Ahmed Banafa, San José State University

Cognitive Readiness

"These advanced tools (AI) pose a paradox in cognition, perceptively enhancing human cognitive performance while simultaneously undermining the underlying mechanisms that shape and develop those very cognitive skills"

Cognitive Skills

- Memory & Learning
- Self-Efficacy
- Critical Thinking/Independent Thought

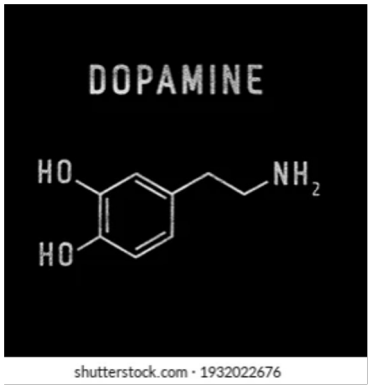
A decline in these areas on an individual level has the potential to negatively impact the emergence and sustainment of a positive organizational culture.

Cognitive Readiness

Underlying Mechanism…our biological disposition…our nature







Memory & Learning

We skip the critical processes necessary for learning, and subsequently memory formation. The more often we do this, the less our brain can strengthen its synapses, and our mind goes further into atrophy.

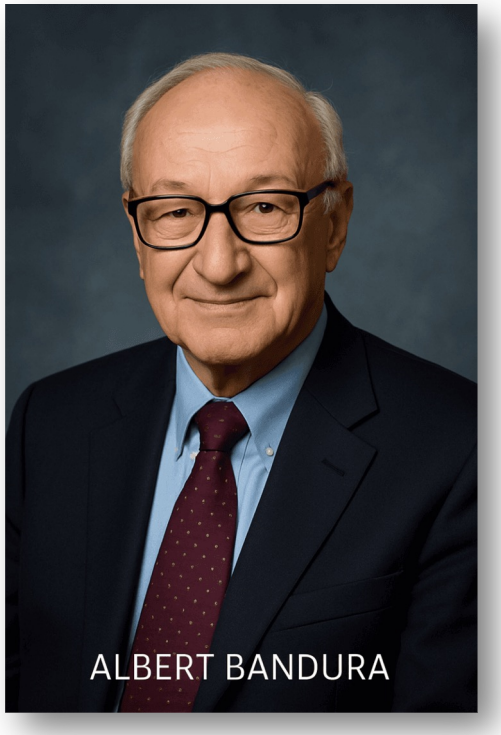
Neurotransmitters play a crucial role in these skills, the release of which is influenced by the way in which we interact with external stimuli.

Cognitive Readiness

Self-Efficacy

Overreliance or misuse can affect your perception of your ability to perform a future task based on past performance (or lack thereof)

The more often we default to “the AI can just do it better”, we are less likely to take on a challenge or tackle something that we may fail, thus risking our future performance as warfighters.



https://www.crimpsy.com/wp-content/uploads/2025/06/Albert-Bandura-%E2%80%93-A-Professional-Academic-Portrait-768x1152.png

Cognitive Readiness



Critical Thinking/Independent Thought

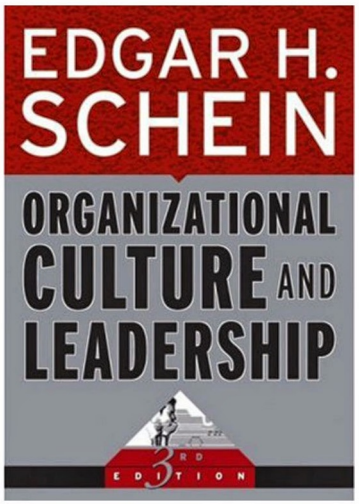
"Conception is easy. What really matters is transformation: the slow, difficult work of turning thought into reality; of failing, adapting, and eventually discovering how your ideas fit into the larger world"

- Dr. Jared Horvath

Let's not bypass the hard work

https://ncfamily.org/wp-content/uploads/2026/04/FPM-Cover-Horvath.png

Organizational culture





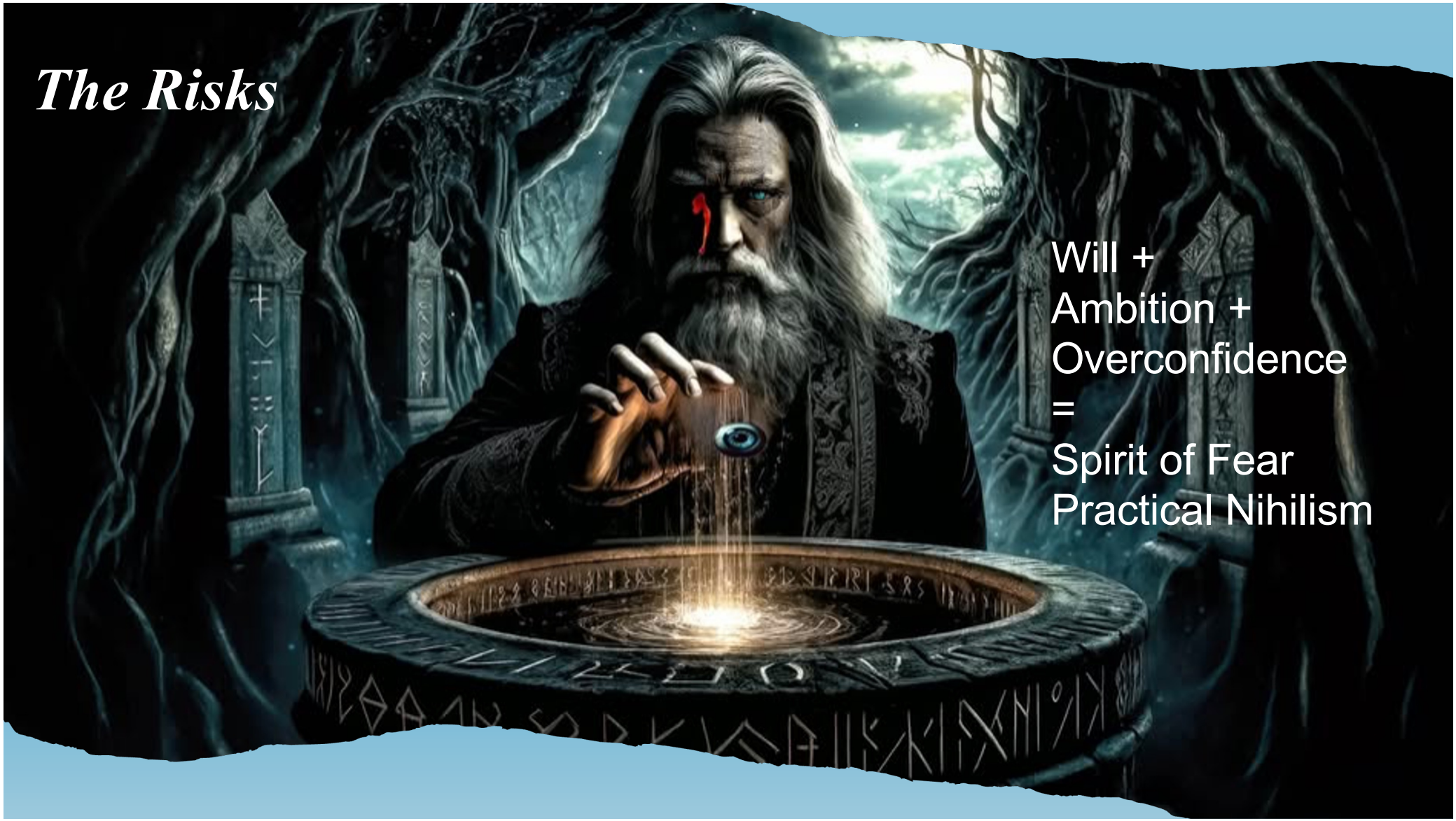
Socio-technical elements of cultural formation include *external adaptation* and *internal integration*

These functions rely on individual cognitive skills and capabilities that culminate at the organizational level.

How do you think your team will perform over time as more cognitive functions are offloaded to AI? Where do you see your organizational culture?

https://alchetron.com/Edgar-Schein

The Risks



Will +
Ambition +
Overconfidence
=
Spirit of Fear
Practical Nihilism



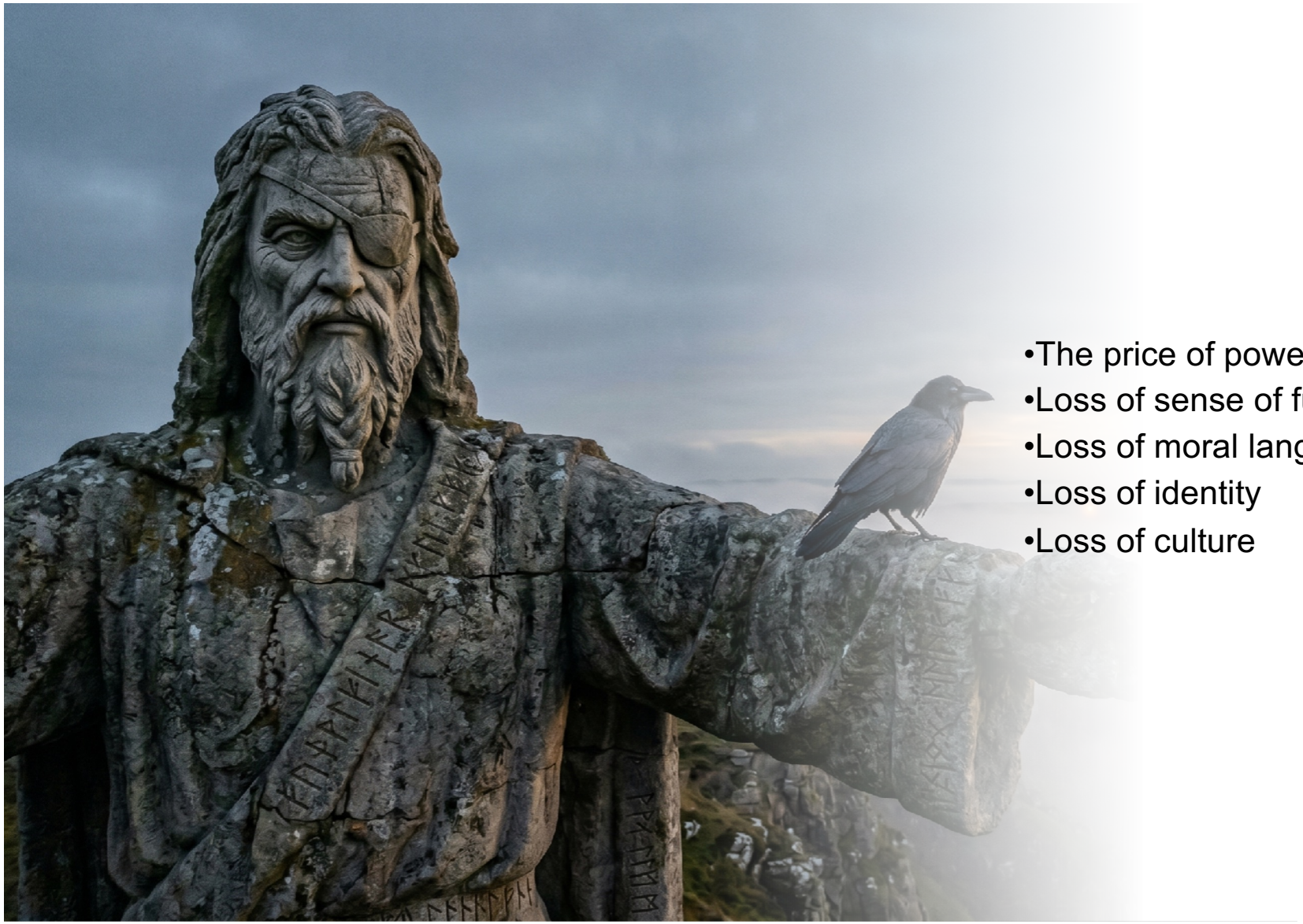
- Cognitive loss
  - Causes
    - Reduce anxiety
    - Urge to outsource
    - Weaponizing of time
  - Effects
    - Misrepresent truth
    - Accept poor answers
    - Wear away our reason
    - Replace reasoned judgment



- Cultural loss
  - Causes
    - Loss of right judgment
    - Atrophy of human faculties
    - Over-reliance on technical solutions
  - Effects
    - Erosion of shared knowledge
    - Loss of right relations in polis
    - Loss of our center, common good



- Moral loss
  - Causes
    - Loss of identity & aims
    - Antagonism replaces right relations
    - Triumph of fear, will and efficiency
  - Effects
    - Our means become ends
    - Loss of right restraint
    - Betrayal of obligations and purpose



- The price of power…
- Loss of sense of full reality
- Loss of moral language
- Loss of identity
- Loss of culture

The Risks

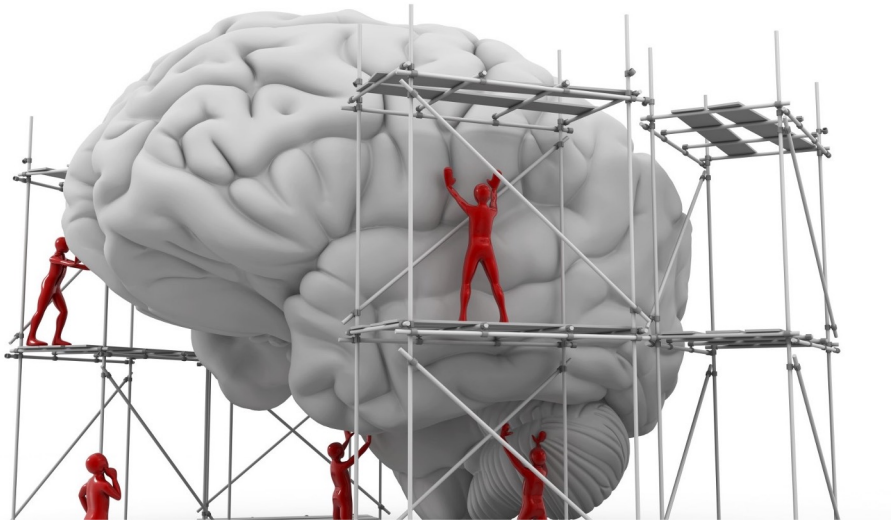


- The price of power…
  - Loss of sense of full reality
  - Loss of moral language
  - Loss of identity
  - Loss of culture

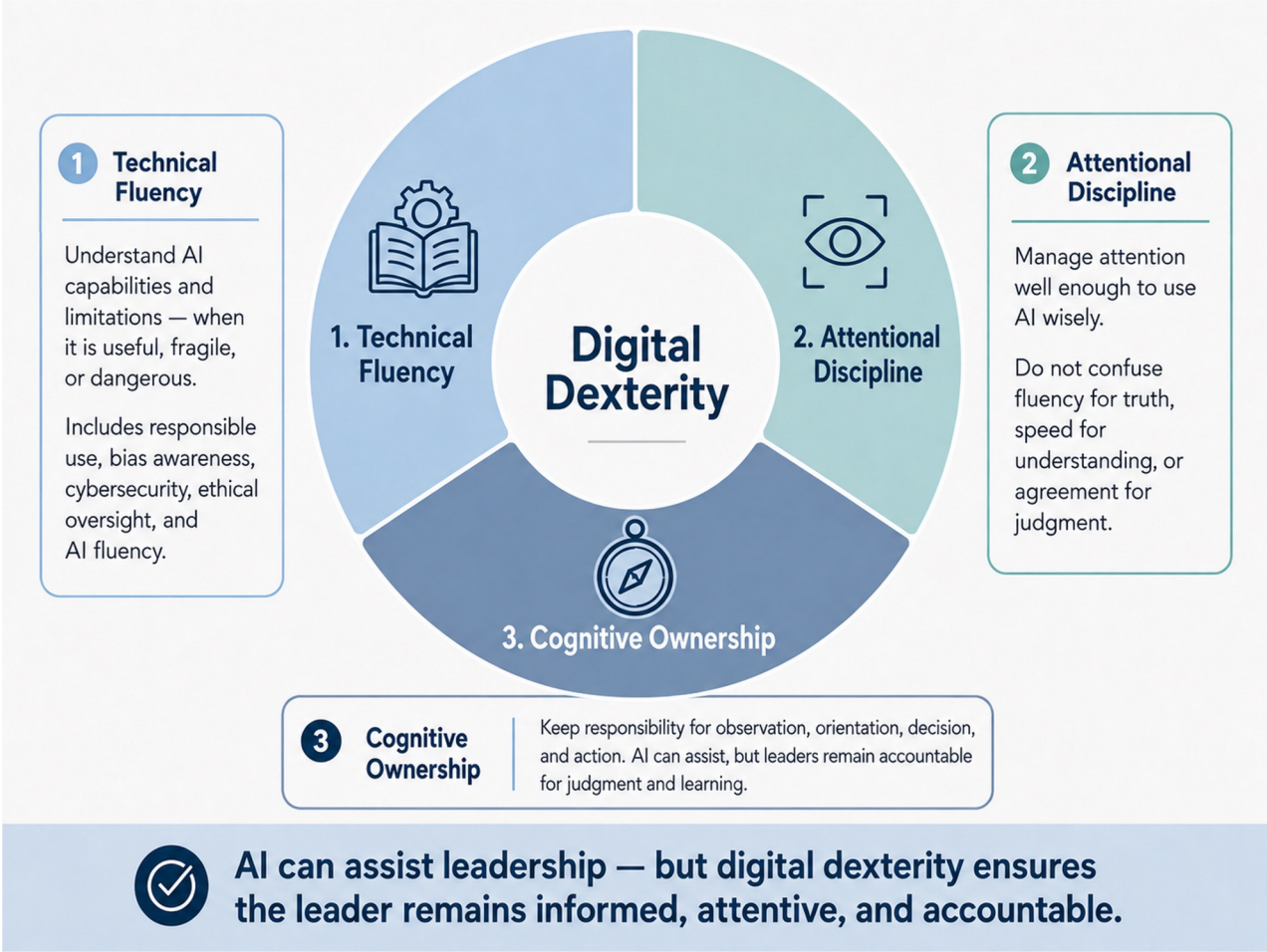


How do we learn and lead in this vulnerable state?

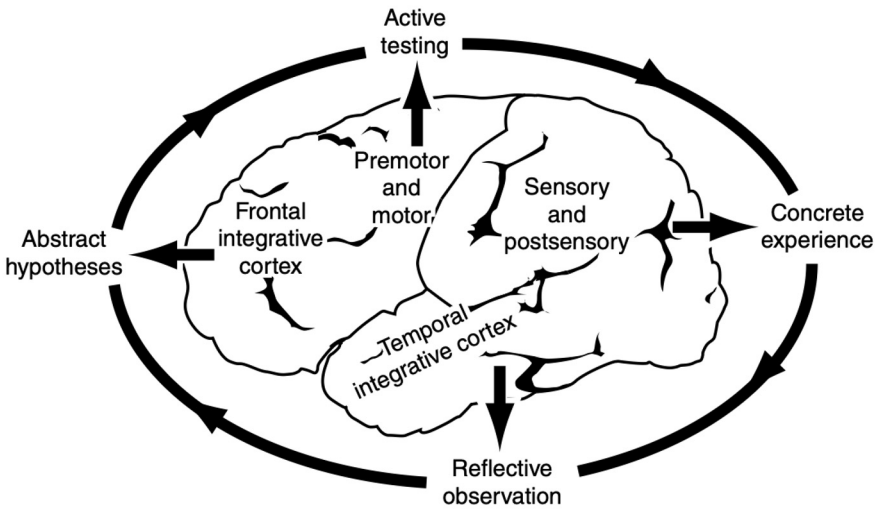
- Digital Dexterity:
  “the disciplined ability to use digital technologies (i.e AI) to strengthen cognitive performance”



Digital Dexterity: 3 layers



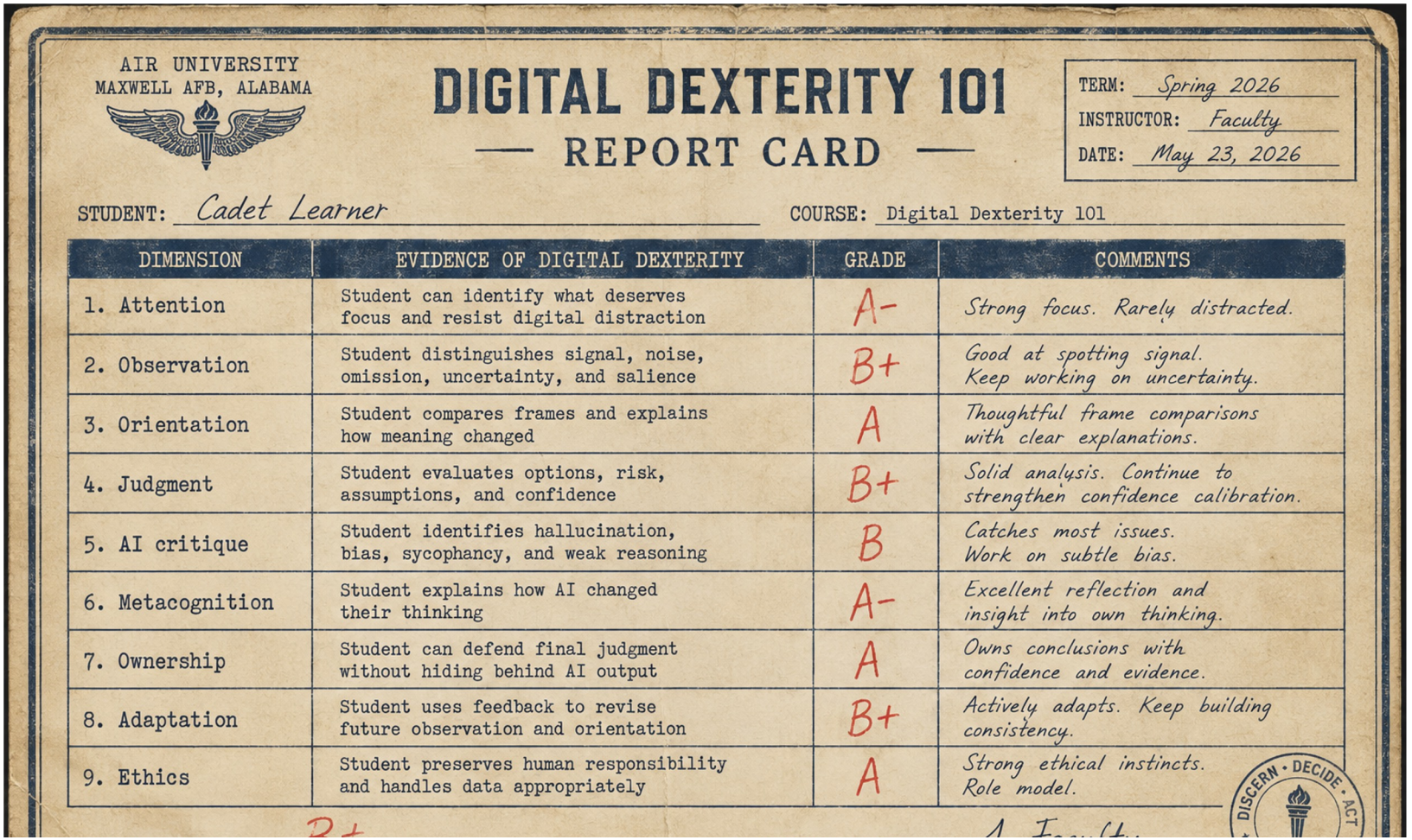
Education wins: Experiential learning



Kolb, D. A. (1984). Experiential learning. Englewood Cliffs, NJ: Prentice-Hall
Zull, James (2002). *The art of changing the brain: Enriching the practice of teaching by exploring the biology of learning*. Stylus Publishing.

Zull/Kolb learning function	Broad cognitive function	AI scaffold opportunity	AI failure mode
Concrete experience	Sensory intake, attention, salience	Summarize, scan, compare, surface anomalies	Overload, distraction, false completeness
Reflective observation	Memory, association, meaning-making	Generate frames, analogies, adversary perspectives, deliberate, coaching	Hallucinated context, bias reinforcement, homogeneous thinking, shallow synthesis
Abstract hypothesis	Working memory, judgment, planning	Generate COAs, test assumptions, compare risks, interrogate	Automation bias, overconfidence, cognitive offloading, premature closure
Active testing	Speech, writing, action, feedback	Rehearse, brief, simulate, conduct AARs	Polished output without ownership

Critical competencies



AIR UNIVERSITY
MAXWELL AFB, ALABAMA

DIGITAL DEXTERITY 101
— REPORT CARD —

TERM: Spring 2026
INSTRUCTOR: Faculty
DATE: May 23, 2026

STUDENT: Cadet Learner
COURSE: Digital Dexterity 101

DIMENSION	EVIDENCE OF DIGITAL DEXTERITY	GRADE	COMMENTS
1. Attention	Student can identify what deserves focus and resist digital distraction	A-	Strong focus. Rarely distracted.
2. Observation	Student distinguishes signal, noise, omission, uncertainty, and salience	B+	Good at spotting signal. Keep working on uncertainty.
3. Orientation	Student compares frames and explains how meaning changed	A	Thoughtful frame comparisons with clear explanations.
4. Judgment	Student evaluates options, risk, assumptions, and confidence	B+	Solid analysis. Continue to strengthen confidence calibration.
5. AI critique	Student identifies hallucination, bias, sycophancy, and weak reasoning	B	Catches most issues. Work on subtle bias.
6. Metacognition	Student explains how AI changed their thinking	A-	Excellent reflection and insight into own thinking.
7. Ownership	Student can defend final judgment without hiding behind AI output	A	Owns conclusions with confidence and evidence.
8. Adaptation	Student uses feedback to revise future observation and orientation	B+	Actively adapts. Keep building consistency.
9. Ethics	Student preserves human responsibility and handles data appropriately	A	Strong ethical instincts. Role model.

DISCERN • DECIDE • ACT

Human-Machine Teaming (HMT)







what kind of human must be formed to team well with AI?

…remaining fully human while teaming with the machine.

How?


FRIGIDAIRE
Implications
“AI adoption is a human formation and leadership-development challenge”
“PME is a cognitive-readiness enhancing environment”

Session Roadmap: 3 Main Points

Opening / Framing

Part I – Cognitive Readiness (Kim)
Individual/biological impact of technology

Part II – Organizational & Ethical Impact (Dan)
Organizational/cultural impact of technology

Part III – Digital Dexterity (Jeremy)
A constructive response/Education wins

Discussion / Q&A

Contact information

- Major Kimberly Shore kimberley.shore@us.af.mil
  87th Communications Squadron Commander at JBMDL
- Dr. Daniel Connelly daniel.connelly.2@au.af.edu
  Associate Professor, Department of Leadership, Air Command and Staff College
- Jeremy VanEgmond jeremy@auix.org
  Chief, Eagle Institute at Air University