Confluence of Learning Practice and Policy

LT Nicholas Armendariz

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Confluence of Learning Practice and Policy

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A Few Words About Me

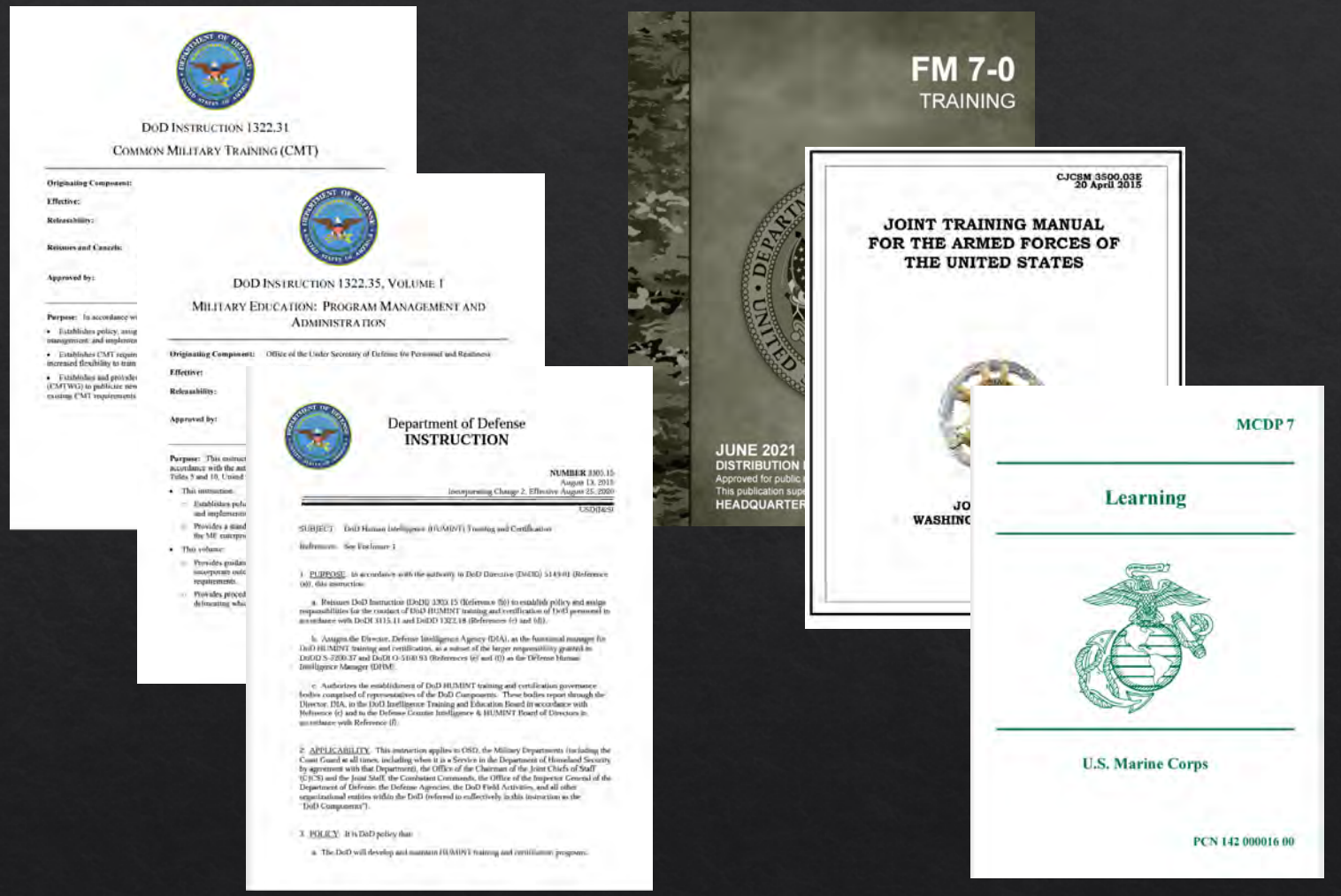
- High School Agriculture teacher and coach
- USMC Electronic Countermeasures Officer (Naval Flight Officer in EA-6B) (7588)
- USMC Training and Education Officer (8802)
- Student, University of Central Florida, School of Modeling, Simulation, and Training
- USN, Aerospace Experimental Psychologist #163

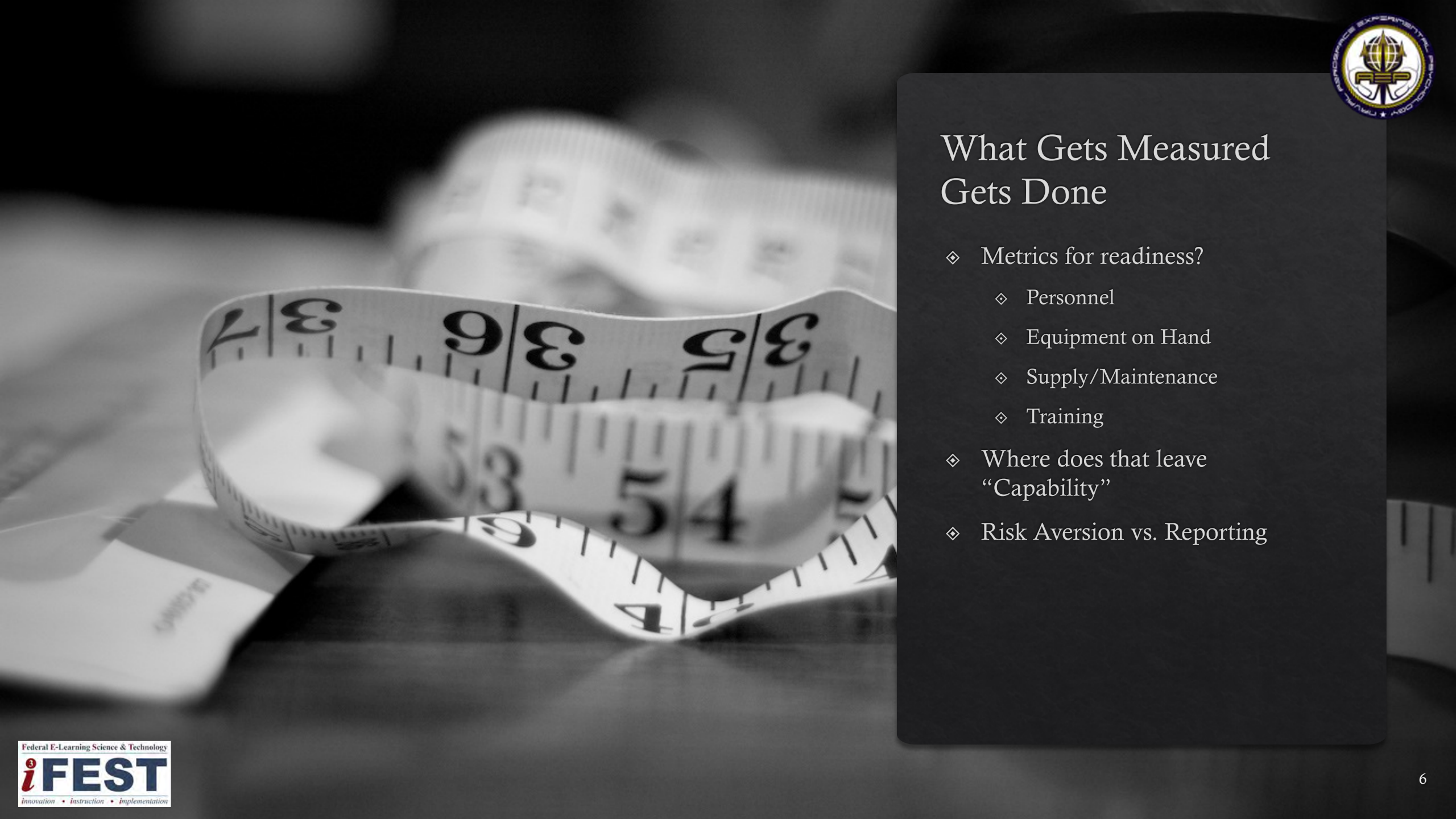
What Does It Mean?

- Experience in the Classroom
- Training with Systems
- Affinity for Policy – particularly with Learning
- Questions and Affinity Lead to Desire for Change

Policies

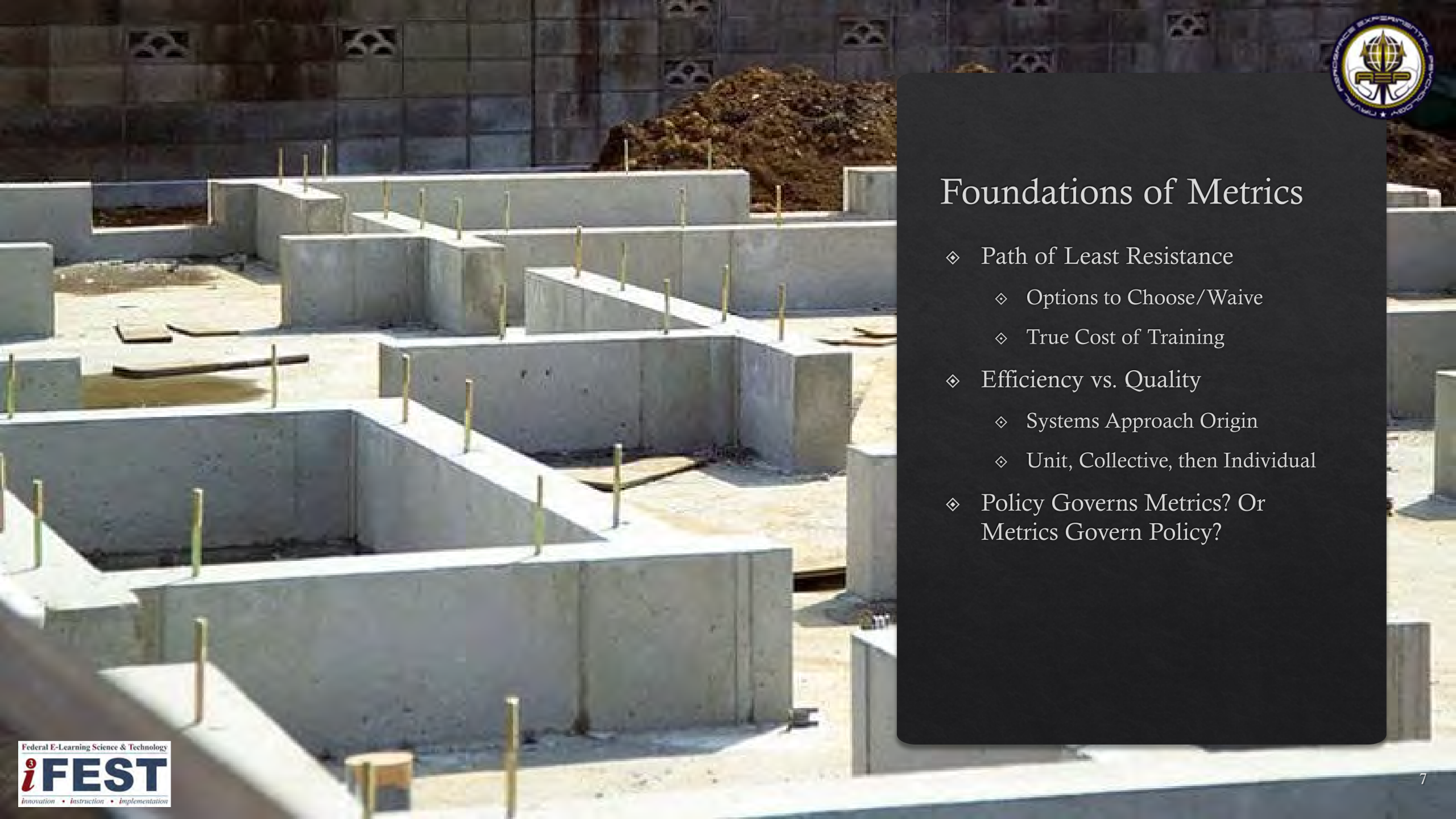
- Issuances
  - DoDI – 34 Training; 24 Education; 2 – Learning
  - DoDD – 5 Training; 3 Education; 0 Learning
  - DoDM – 2 Training; 1 Education; 0 Learning
- Joint and Service Specific Doctrine
  - MCDP 7
  - FM 7
  - CJCSM 3500.03E





What Gets Measured Gets Done

- Metrics for readiness?
  - Personnel
  - Equipment on Hand
  - Supply/Maintenance
  - Training
- Where does that leave "Capability"
- Risk Aversion vs. Reporting



Foundations of Metrics

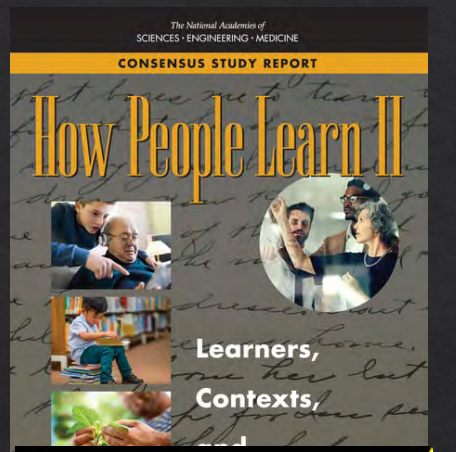
- Path of Least Resistance
  - Options to Choose/Waive
  - True Cost of Training
- Efficiency vs. Quality
  - Systems Approach Origin
  - Unit, Collective, then Individual
- Policy Governs Metrics? Or Metrics Govern Policy?

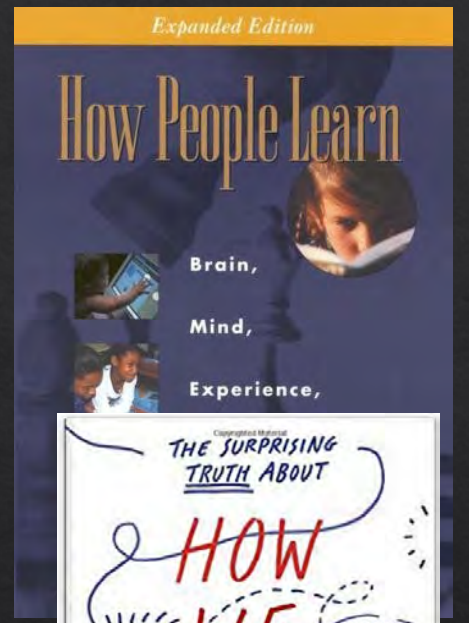
Tell Me … What is the Focus?

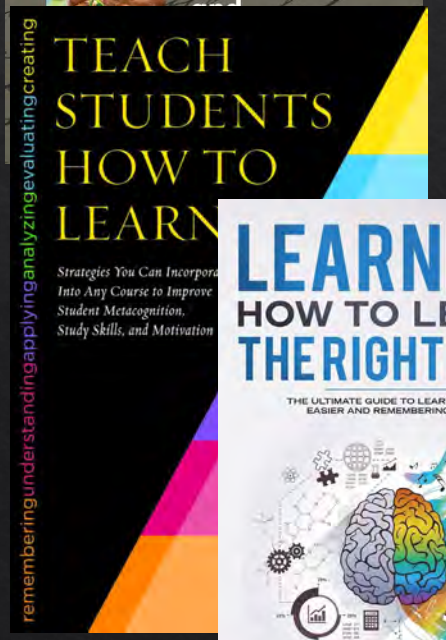
Overview. The mission of any instructional system is to determine instructional needs and priorities, develop effective and efficient solutions to achieving these needs, implement these solutions in a competent manner, and assess the degree to which the outcomes of the system meet the specified needs. To

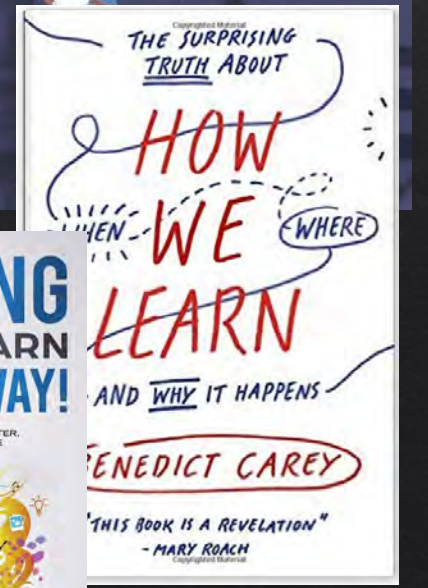
2. The Joint Training System (JTS) Methodology. The JTS is an integrated, requirements-based, four-phased methodology for aligning joint training programs with assigned missions, consistent with command priorities and available resources to produce trained and ready individuals, staffs, and units.

1. General. This manual delineates standards, processes, and procedures for curriculum and test development, revision, and review across the NSTC domain. Successfully accomplishing our training mission requires efficient development and maintenance of curriculum. Everyone within





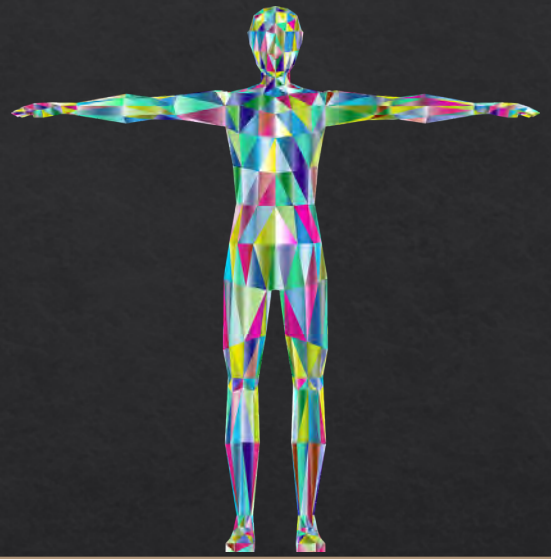




Findings vs. Implementation

- Educational Goals
  - Understand the learner
  - Learner-centric
  - The Adult Learner
  - Active Learning
- 4E Cognition
  - Embedded
  - Enactive
  - Embodied
  - Extended

4E Cognition



Source: AP Photo/Roger Steinman 8-30-20)

Credit: LCpl Phongsisattanak,

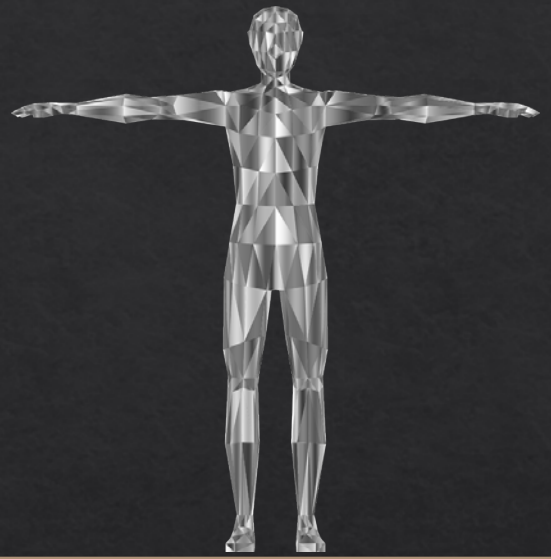
4E Cognition

Embodied – Cognition depends on physical body as the body experiences

Source: AP Photo/Roger Steinman 8-30-20)

Credit: LCpl Phongsisattanak,

4E Cognition



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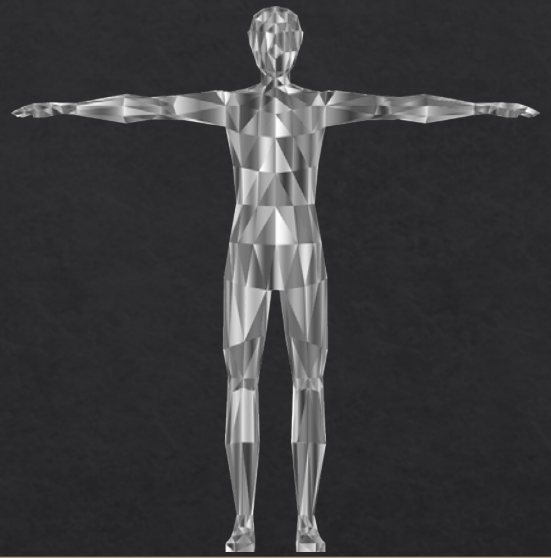
4E Cognition

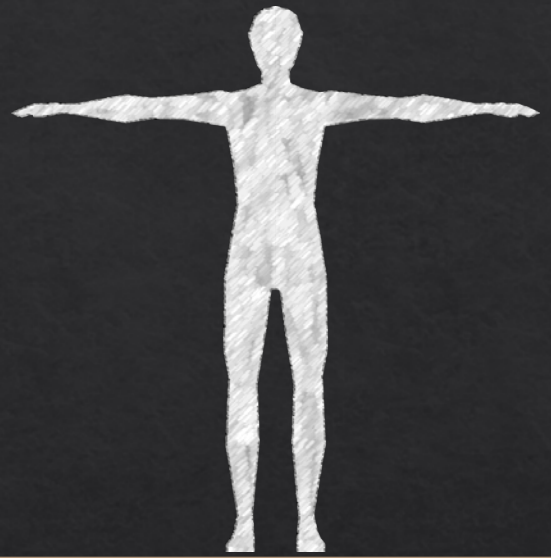


Enactive – Cognition with the body is put into action.

Credit: Pixabay

Credit: LCpl Phongsisattanak,

4E Cognition



Source: AP Photo/Roger Steinman 8-30-20)

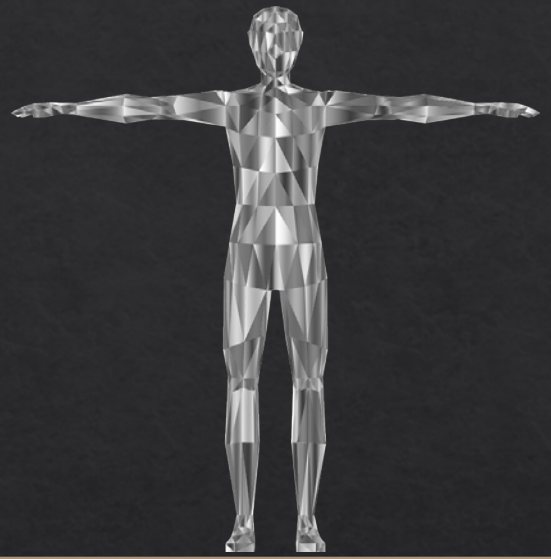
Credit: LCpl Phongsisattanak,

4E Cognition

Source: AP Photo/Roger Steinman 8-30-20)

Extended – Utilizes affordances to aid in cognition

4E Cognition



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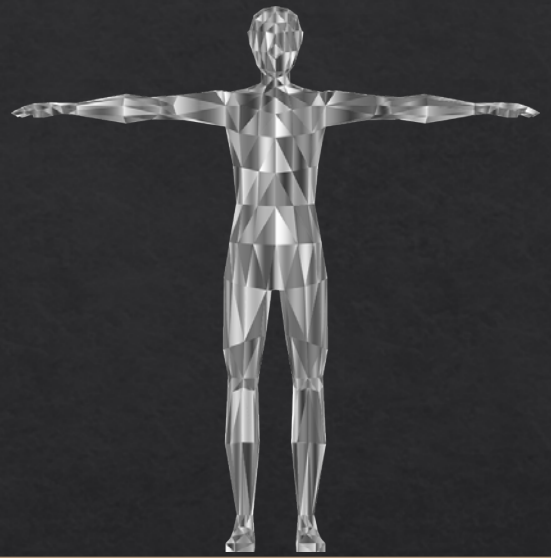
4E Cognition



Embedded – Cognition that makes use of environment, and sociocultural influence.

Source: AP Photo/Roger Steinman 8-30-20)

Credit: LCpl Phongsisattanak,

Aviation as an Example

Implementing 4E Cognition

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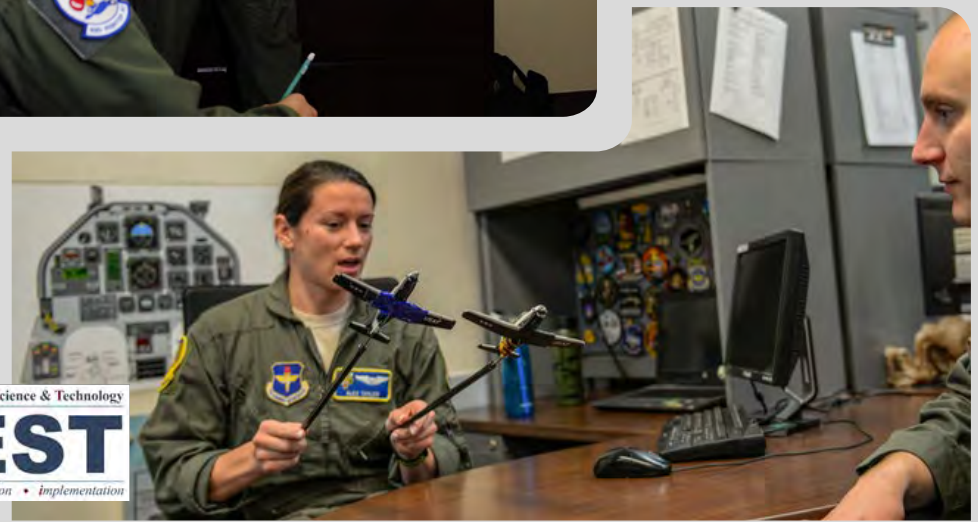
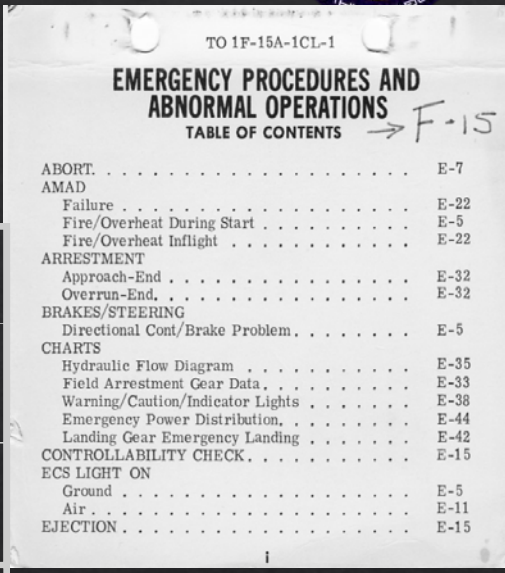


Military Aviation

- Creates Learning through Affordances
- Creates Relationships (Concepts/Training Aids)
- An Embedded Framework for Learning

Examples in Aviation

Embodied	Enactive
Definition: Interactions of the body with the environment and how to integrate one's surroundings into cognitive processing	**Definition**: Actively combines cognitive processes in real-time with the environment
Example: The design of the buttons, knobs, switches, and then implementation of the emergency procedure response	**Example**: Building instinctual response patterns into aircrew and encouraging them to utilize all their patterns and affordances to make sound decisions
Embedded	**Extended**
Definition: Focuses on properties of the environment and how they can influence behavior as well as the decisions and affordances for learning	**Definition**: The human's use of the environment around them as a dependence on the cognitive processes in the brain and body
Example: The G-suit affords the pilot immediate feedback on the levels of Gs being placed on themselves and the airframe, which then in turn plays a part in the cognitive process of the maneuver being performed	**Example**: The use of miniature models as briefing tools or training aids



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EMERGENCY PROCEDURES AND ABNORMAL OPERATIONS

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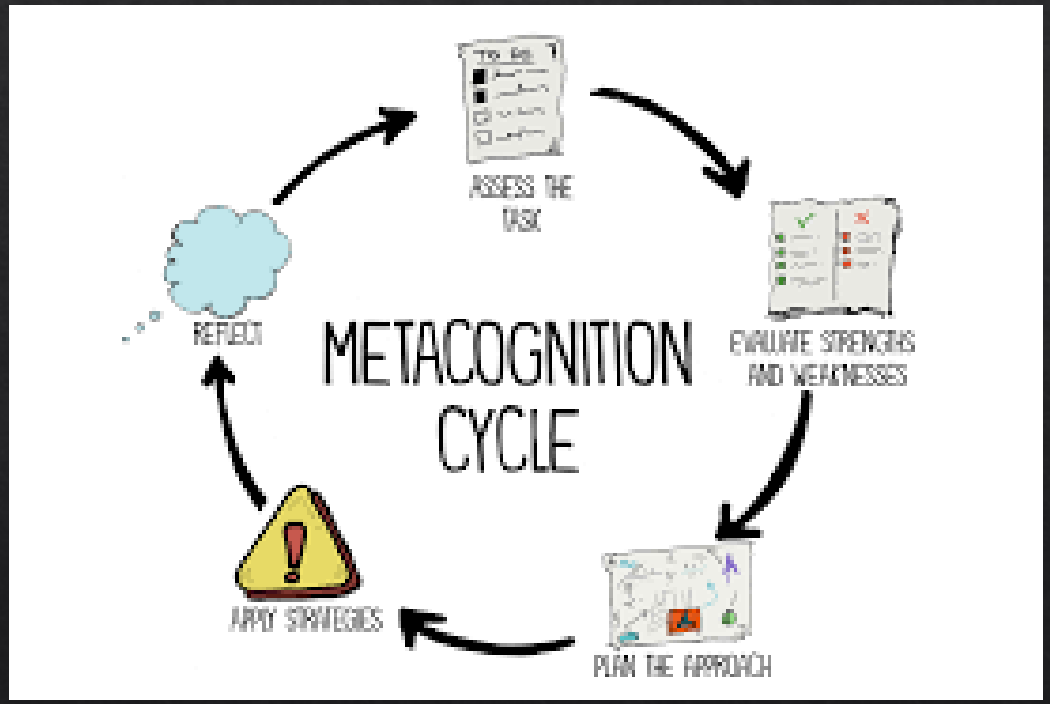
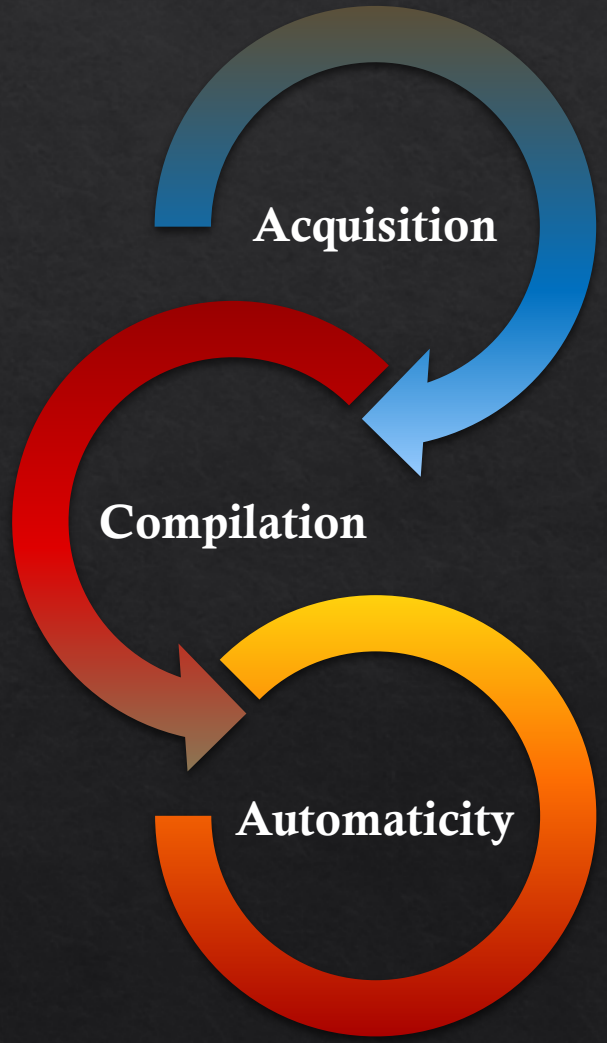
Outcome: Cognitive Learning

- Novice vs. Expert
  - Difference in knowledge is often minimal
  - Organization and formulating strategies drastically different (focus and prioritization)
- Metacognition
  - Thinking about thinking!
  - Plan, monitor, and assess one's understanding and performance
  - Different strategies for learning, thinking, and problem-solving

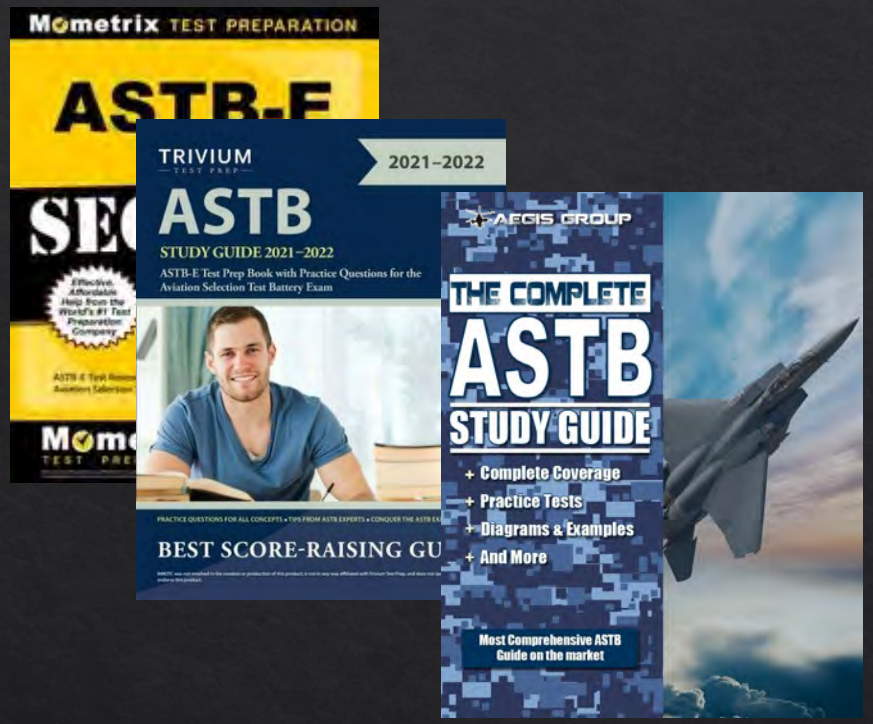


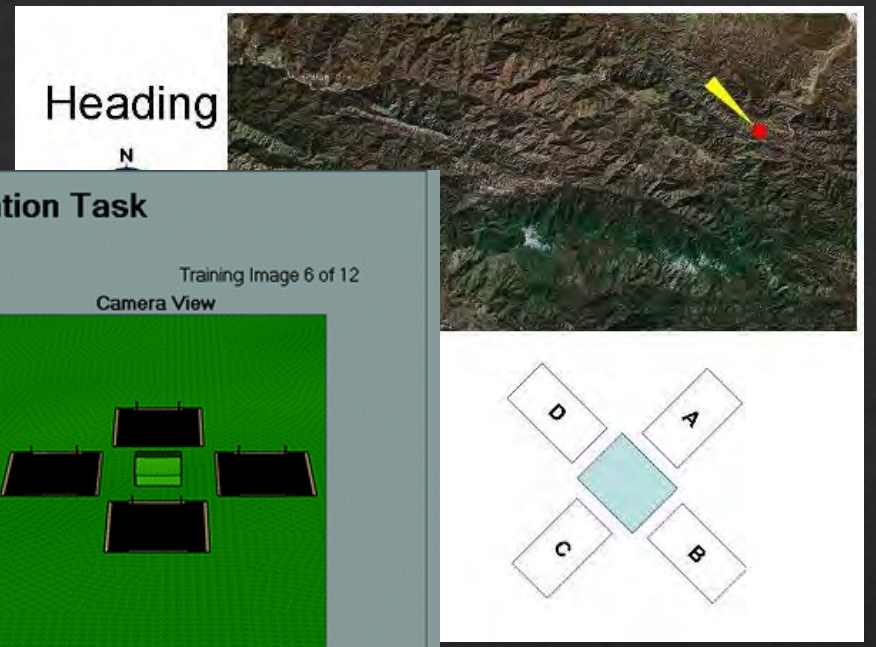
Outcome: Skill-based Learning

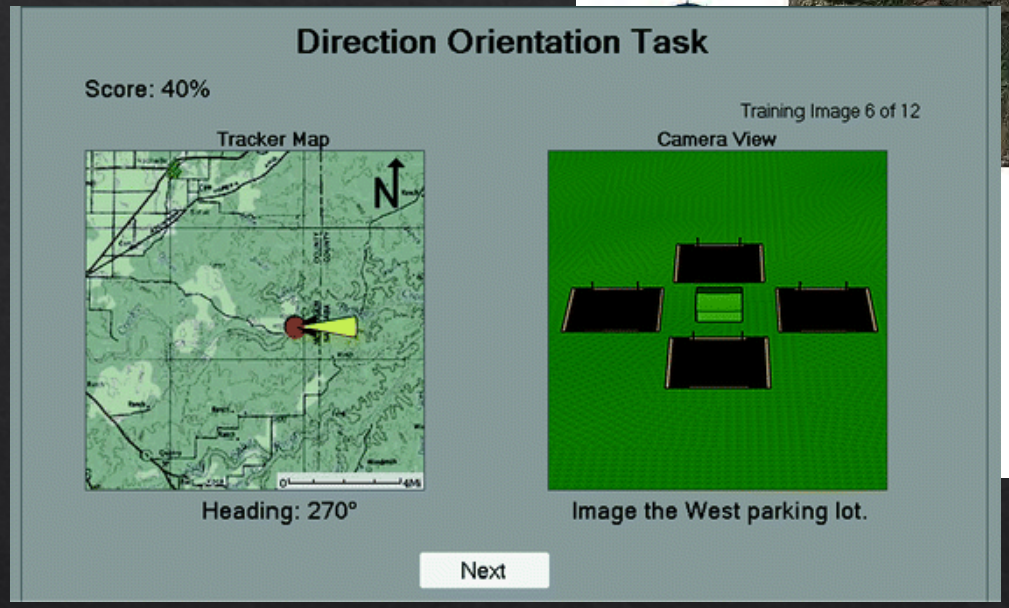


- Acquisition
  - Turning "knowing something" into "doing something"
  - Reproducing new or trained behavior
- Compilation
  - Proceduralization: building small or discrete behaviors into domain-specific production or routine
  - Composition: grouping steps by linking successive procedures into more complex production
- Automaticity
  - Maintain parallel instead of successive activities or procedures
  - Task accomplishment without conscious monitoring; allows for cognitive resources to be devoted elsewhere

Direct Ties







- Selection Battles
- Cognition and Policy
- What Matters Most?

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Opportunities to Utilize Findings

- Framework for Learning
- Policies and Strategies for Instructional Design
- Facilitation Considerations

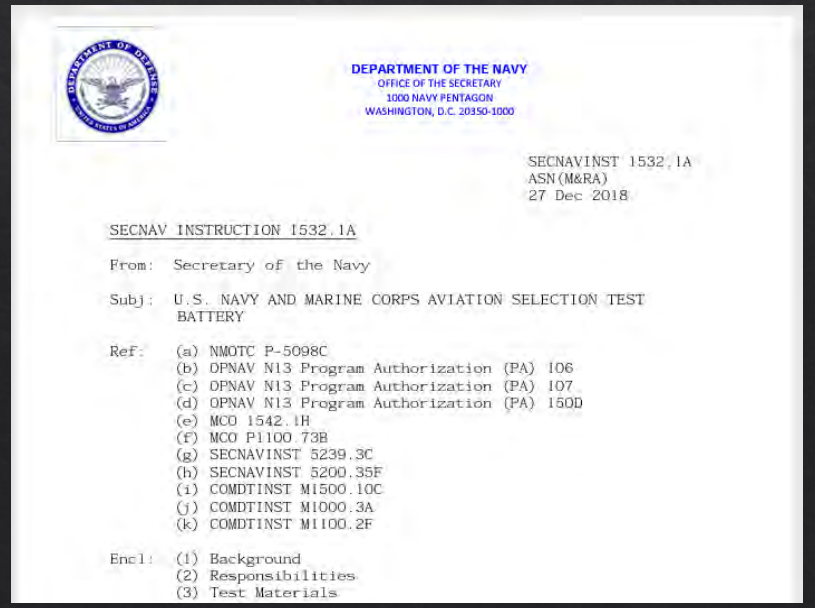
7	4	8
3	9	7
8	4	12
5	6	10
???	8	16

How About Now?

7	8	6
6	9	4
8	9	22
5	11	5
???	12	10

Future Research

- Electronic Engagement vs. Effectiveness
- Digital Environment vs. Selection Methods
- Translation of Cognitive Processes into Design and Implementation
- Talent Management



DEPARTMENT OF THE NAVY
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WASHINGTON, D.C. 20350-1000

SECNAVINST 1532.1A
ASN(M&RA)
27 Dec 2018

SECNAV INSTRUCTION 1532.1A

From: Secretary of the Navy

Subj: U.S. NAVY AND MARINE CORPS AVIATION SELECTION TEST BATTERY

Ref: (a) NMOTC P-5098C
(b) OPNAV N13 Program Authorization (PA) 106
(c) OPNAV N13 Program Authorization (PA) 107
(d) OPNAV N13 Program Authorization (PA) 150D
(e) MCO 1542.1H
(f) MCO P1100.73B
(g) SECNAVINST 5239.3C
(h) SECNAVINST 5200.35F
(i) COMDTINST M1500.10C
(j) COMDTINST M1000.3A
(k) COMDTINST M1100.2F

Encl: (1) Background
(2) Responsibilities
(3) Test Materials

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