

IGNITE! PRESENTATIONS  
ADL—IT'S MORE THAN THE TECHNOLOGY

# Modernizing Learning

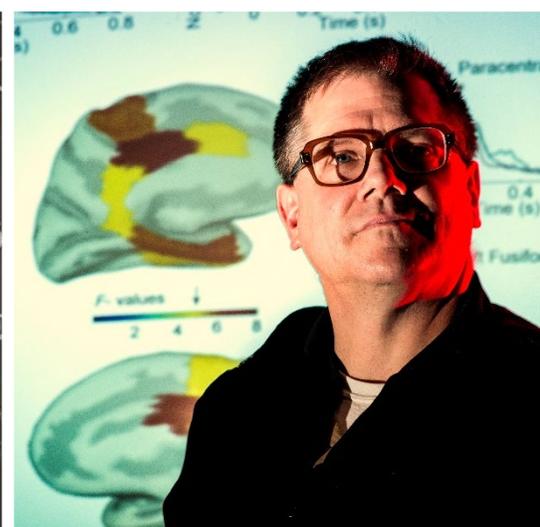
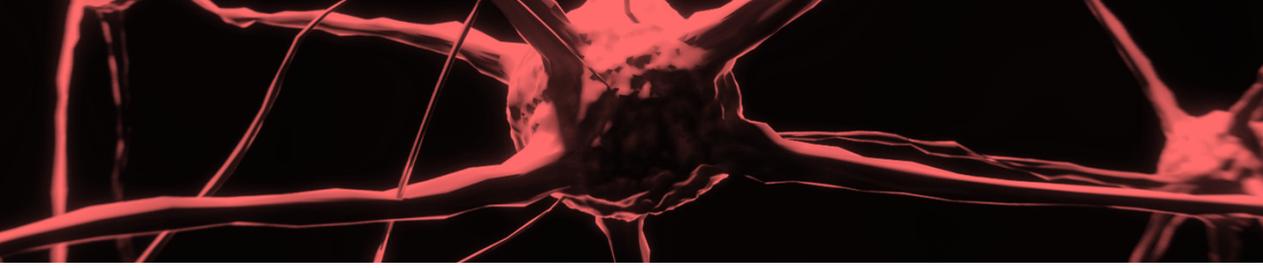
**Sae Schatz, Ph.D.**

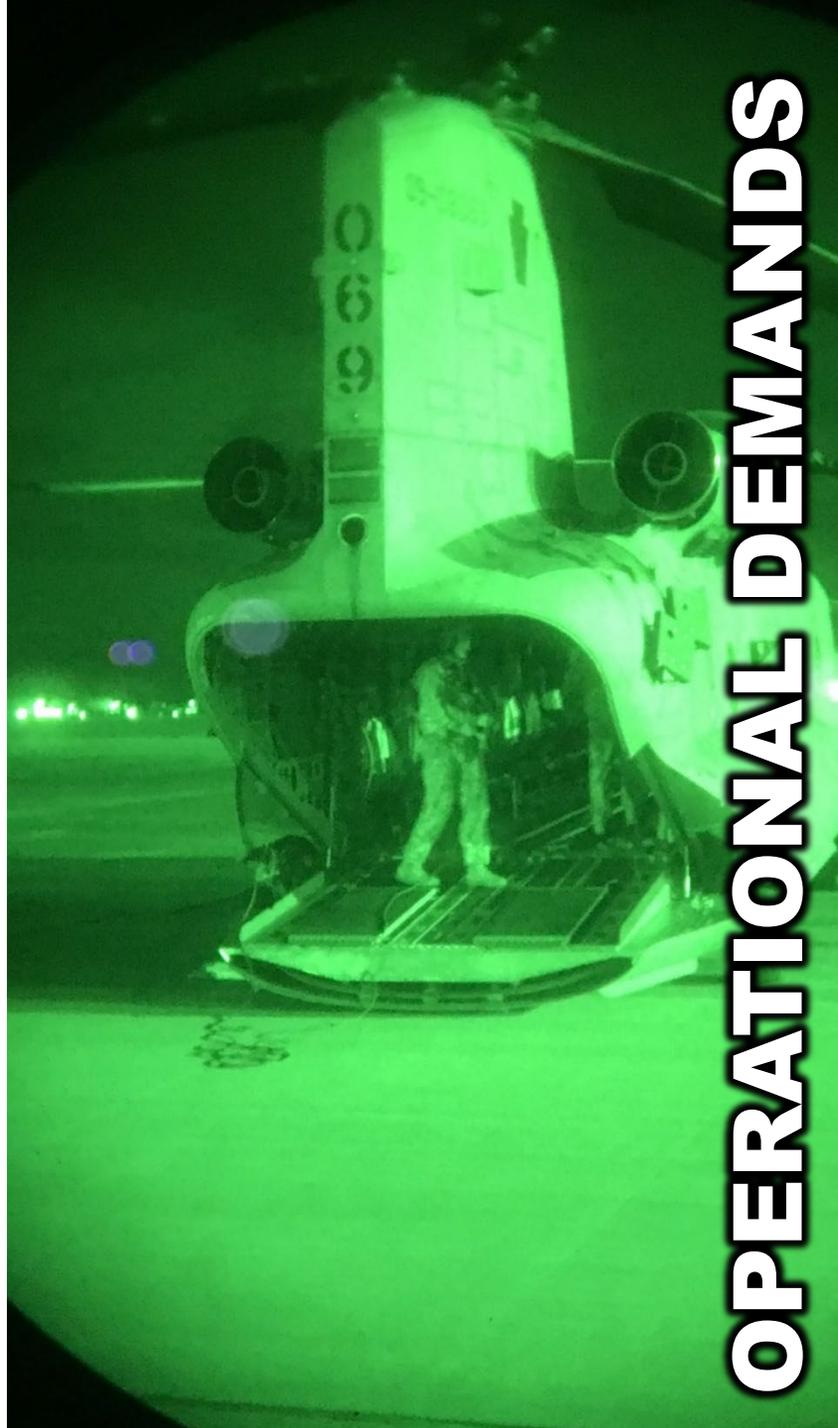
The ADL Initiative

Social: #ADLiFEST | WiFi: HILTON\_MEETING / Password: ADLiFEST **iFEST**

# Modernizing Learning

Sae Schatz





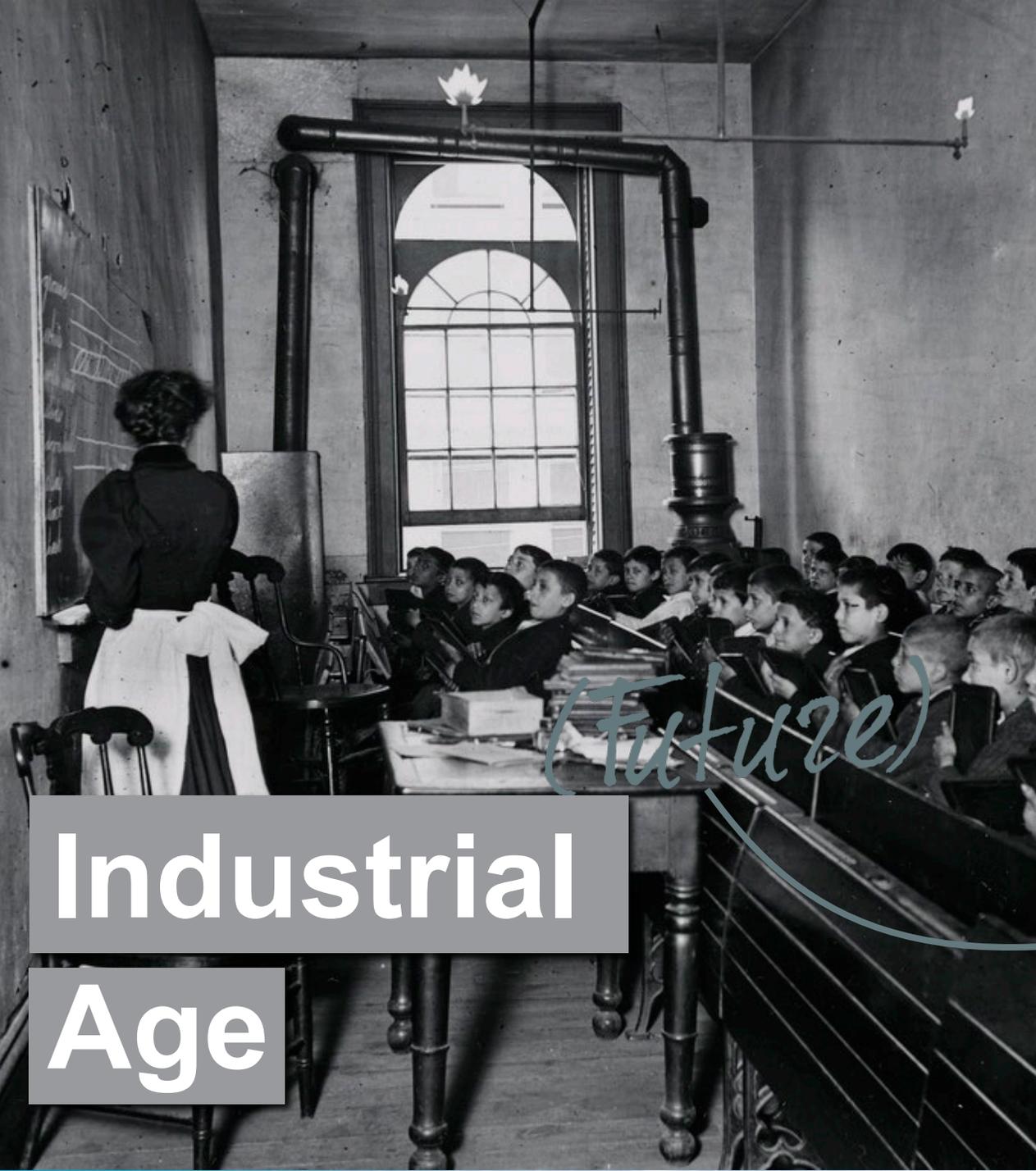
**OPERATIONAL DEMANDS**



**60-YEAR CURRICULUM**

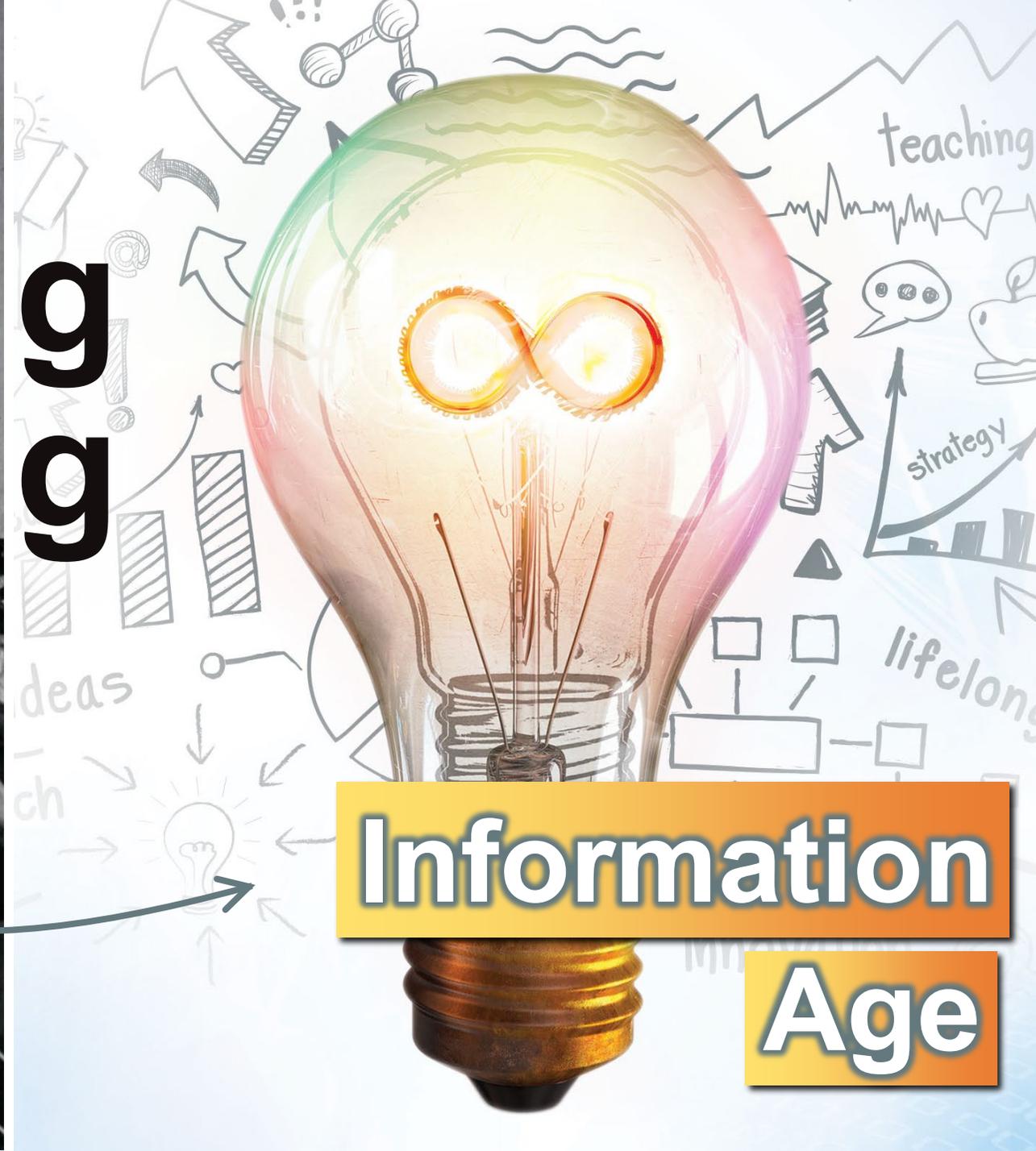


**HUMANS + AI**



**Industrial  
Age**

*(Future)*



gg

**Information  
Age**



- Time-based and episodic
- Assembly line–like
- One-size-fits-all
- Input-focused
- Passive
- Focused on transferring facts and psychomotor skills from experts to students





- Lifelong continuous
- Interconnected like
- Personalized-all
- Outcome-focused
- Active
- Focused on fostering 21<sup>st</sup> century competencies or skills from experts to students

Integrated Technology

Driven by Data

Learning Science Informed

Formal and informal

Individual and Organizational



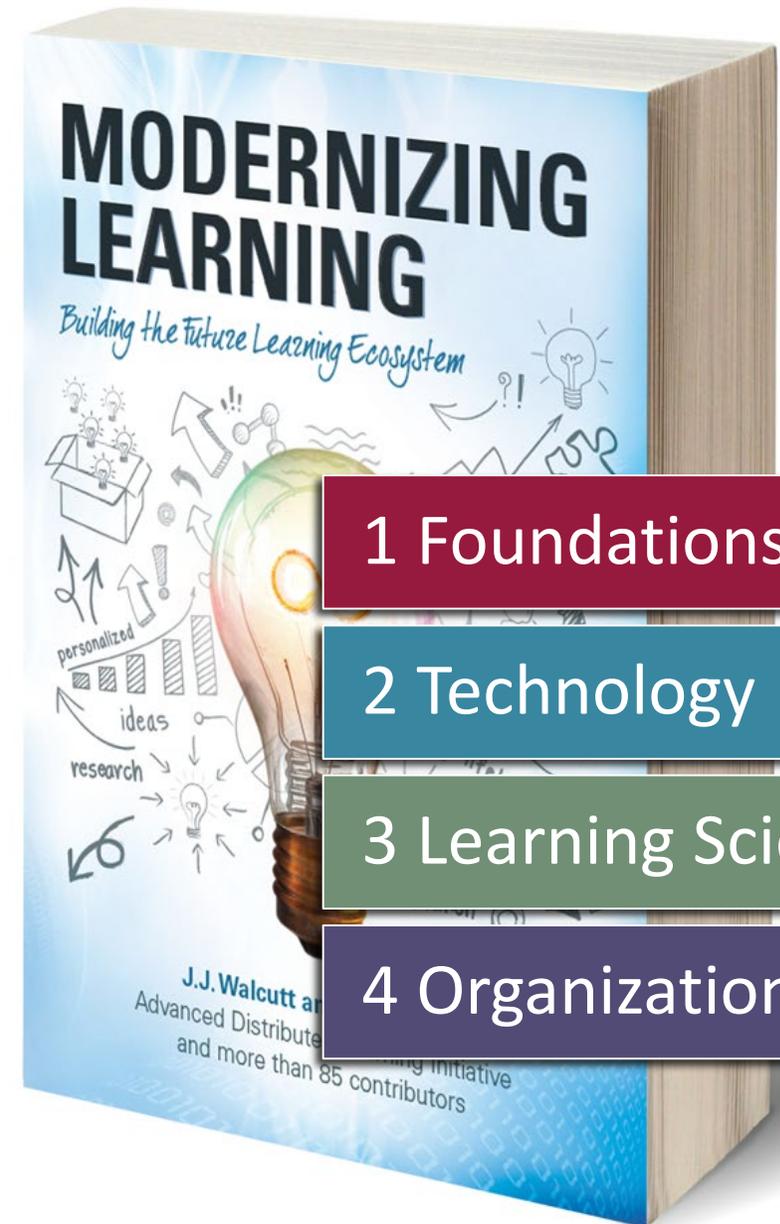
- # Future Learning Ecosystem
- Lifelong continuum
  - Interconnected
  - Personalized
  - Outcome-focused
  - Active
  - Focused on fostering 21<sup>st</sup> century competencies

**385** Pages + References

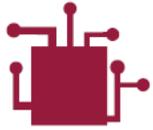
**85** Contributors from academia, education, government, military, non-profits, and industry

- **35** Authors
- **52** SME contributors
- **2** Editors + **4** Editorial Board

**4** Sections



# SAMR



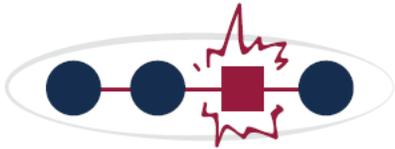
## REDEFINITION

Technology enables new tasks, previously inconceivable



## MODIFICATION

Technology enables significant task redesign



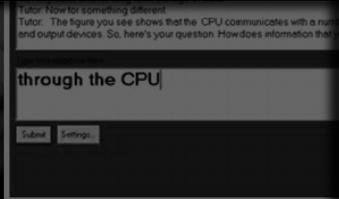
## AUGMENTATION

Technology acts as direct



## SUBSTITUTION

Technology acts as direct



# MAYER'S 12 PRINCIPLES OF MULTIMEDIA LEARNING



**SIGNALING**  
highlight essential information



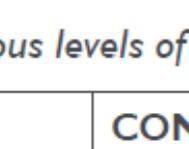
**REDUNDANCY**  
use graphics and narration (not on-screen text)



**PERSONALIZATION**  
use a conversational style, not a formal one



**VOICE**  
narrate in a friendly human (not machine) voice



**IMAGE**  
the narrator's image isn't needed on-screen

## Example of "watching a video" at various levels of engagement:

<b>PASSIVE</b> Receiving	<b>ACTIVE</b> Manipulating	<b>CONSTRUCTIVE</b> Generating	<b>INTERACTIVE</b> Dialoguing
Watching the video, without doing anything else	Actively engaging with the playback, such as rewinding and pausing; taking verbatim notes	Explaining concepts from the video; taking paraphrased notes; contrasting the video to other materials	Debating with a peer about the message in the video; actively analyzing the position of the video in a small group discussion

Example application of Chi and colleagues' ICAP framework

# Foundations

Human-Systems Integration

Marketing/Consumer Behavior

Behavioral Economics/Nudge

User Experience Design

Instructional Design

Learning Engineering

Foundations



SECURITY



PRIVACY

Technology

# PERSONALIZATION ANALYTICS



Bastrop Residences Destroyed By Ground Fire

# Technology

## ASSESSMENT AND FEEDBACK

Satellite 1 makes a circular orbit around Earth.  
Satellite 2 makes a circular orbit around Earth.  
We let  $v$  represent the speed of a satellite.  
One of the following choices gives the ratio of the speeds of the two satellites.

- (A)  $v_2 = \frac{1}{\sqrt{2}}v_1$  ;  $a_2 = \frac{1}{4}a_1$
- (B)  $v_2 = \frac{1}{2}v_1$  ;  $a_2 = \frac{1}{4}a_1$
- (C)  $v_2 = \frac{1}{\sqrt{2}}v_1$  ;  $a_2 = \frac{1}{2}a_1$

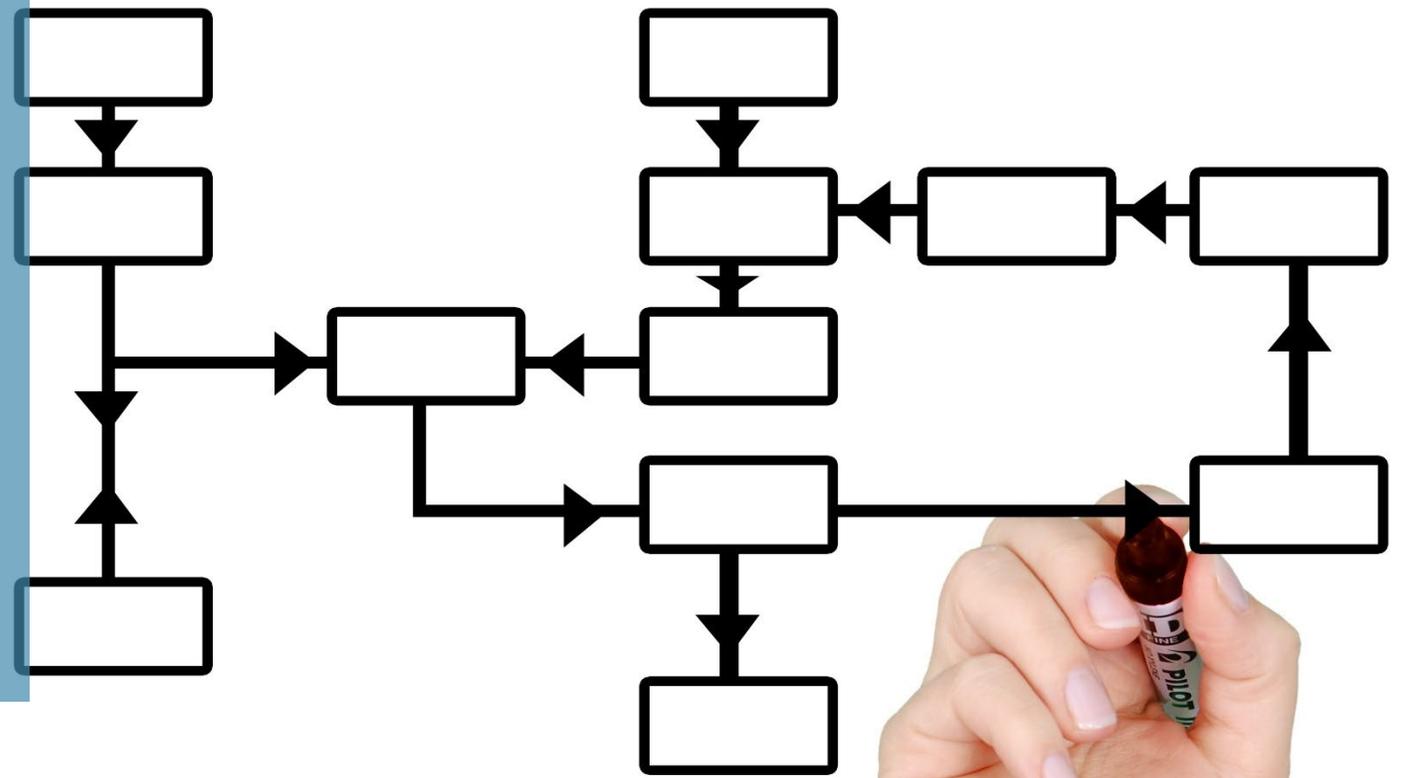
23. A car moves with a constant speed  $v$  in a circular path of radius  $r$ . The direction of the acceleration is

- (A)  $\swarrow$

24. P

## INSTRUCTIONAL STRATEGIES

## COMPETENCY-BASED LEARNING



# Learning Science

ASSESSMENT AND FEEDBACK

Satellite 1 makes a circular orbit around Earth.  
Satellite 2 makes a circular orbit around Earth.  
We let  $v$  represent the speed of a satellite.  
One of the following choices gives the correct relationship between the speeds of the two satellites.

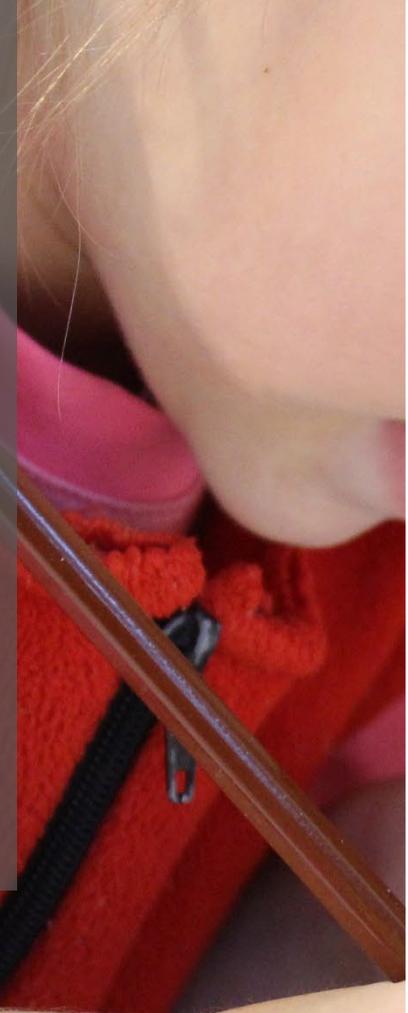
(A)  $v_2 = \frac{1}{\sqrt{2}}v_1$  ;  $a_2 = \frac{1}{4}a_1$   
(B)  $v_2 = \frac{1}{2}v_1$  ;  $a_2 = \frac{1}{4}a_1$   
(C)  $v_2 = \frac{1}{\sqrt{2}}v_1$  ;  $a_2 = \frac{1}{2}a_1$

23. A car moves with a constant speed  $v$  in a circular path of radius  $r$ . The direction of the car's acceleration is given by the arrows in the diagram.

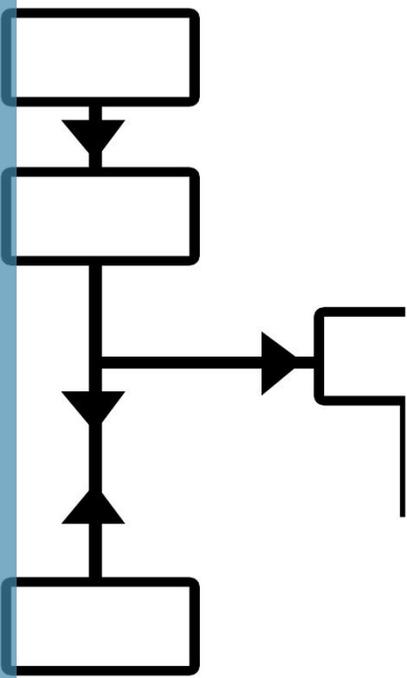
(A) 

24. P

INSTRUCTIONAL STRATEGIES



COMPETENCY-BASED LEARNING



SOCIAL LEARNING



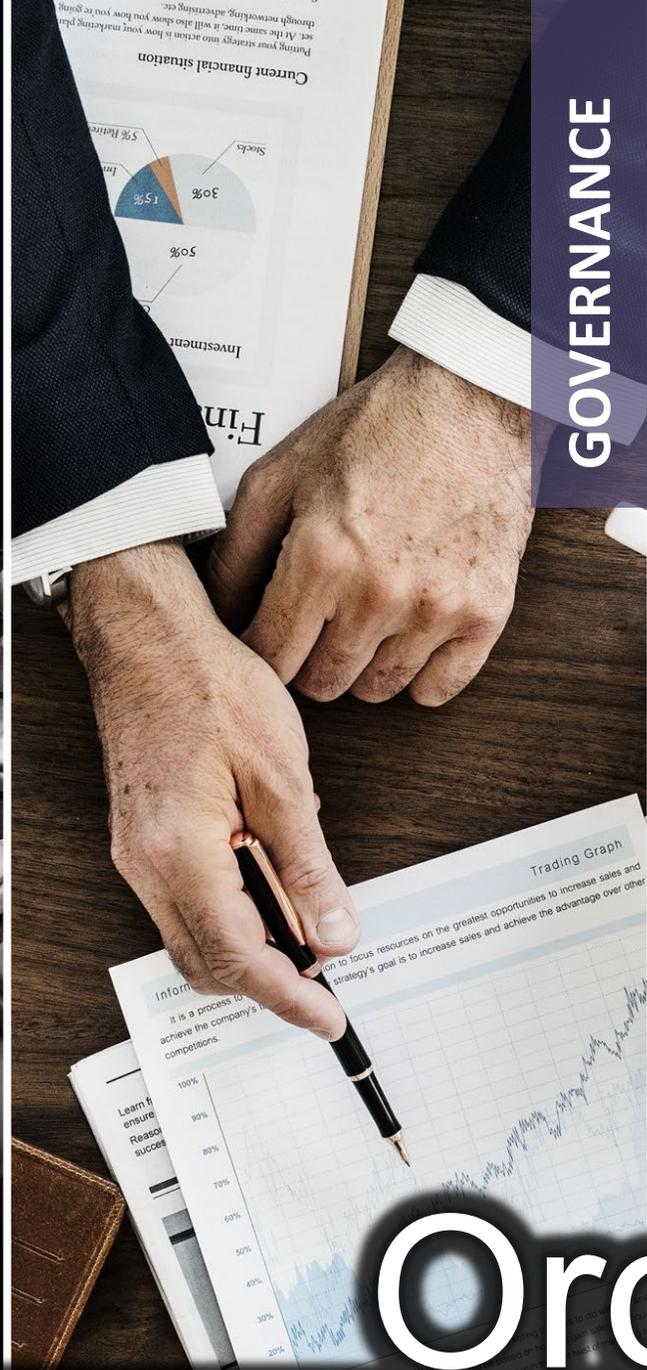
SELF-REGULATED LEARNING



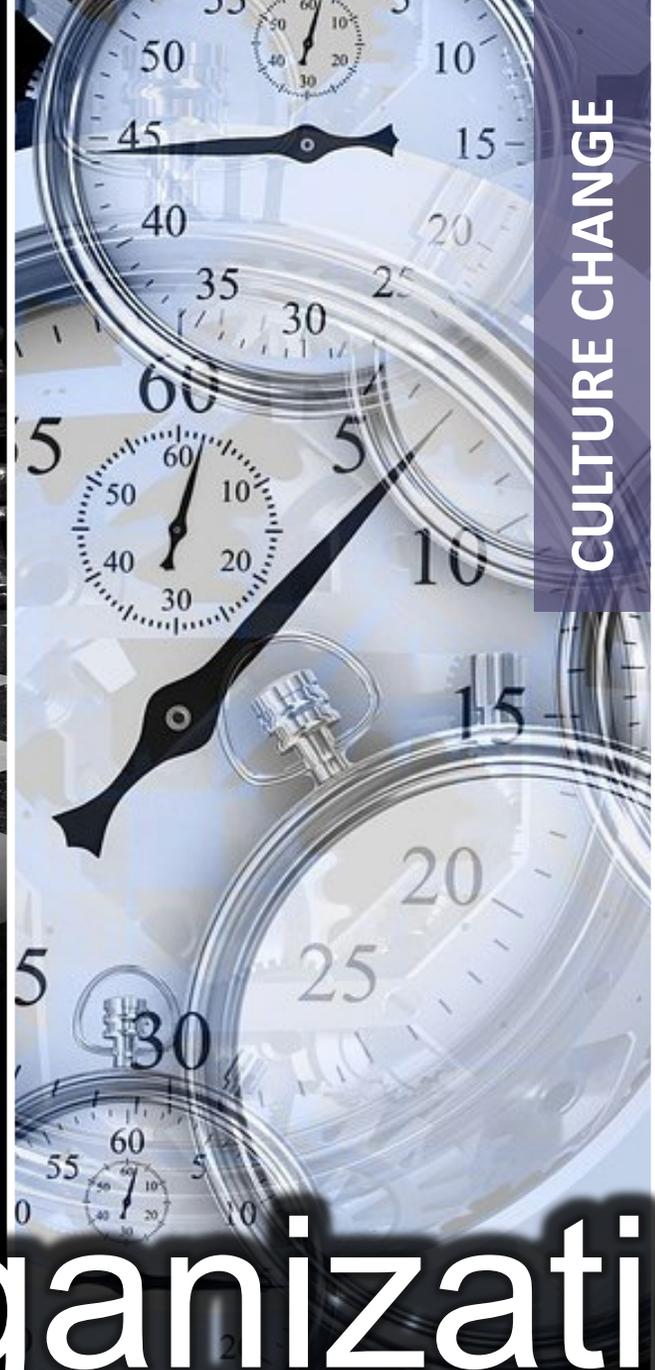
# Learning Science



ISDS AND LEARNING ENGINEERS



GOVERNANCE



CULTURE CHANGE

# Organization



RECOMMENDATION ENGINEERS



GOVERNANCE



CULTURE CHANGE

# Recommendations { Strategic Planning }

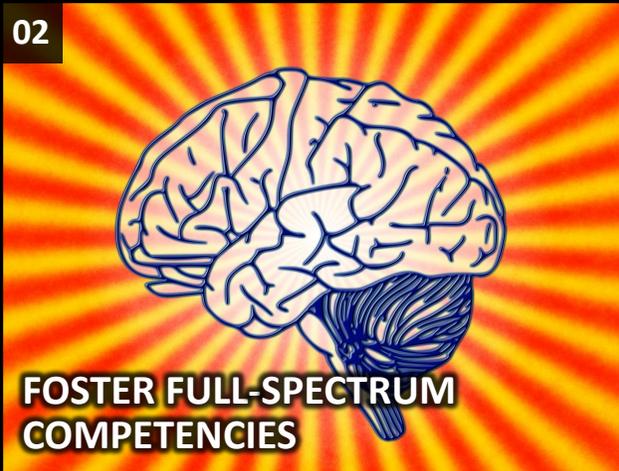


ISDS AND



# Organization

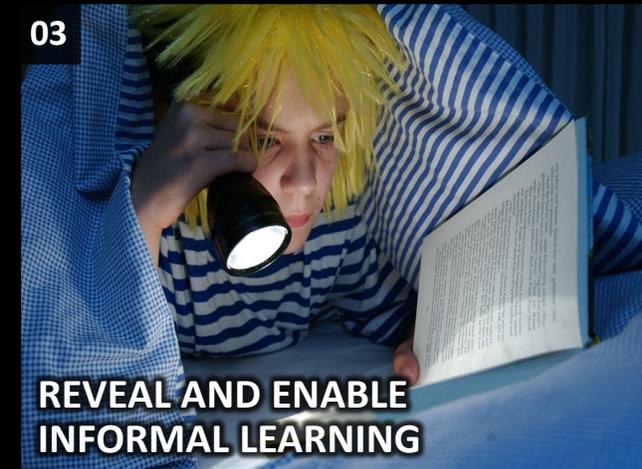
# Recommendations



**FOSTER FULL-SPECTRUM  
COMPETENCIES**

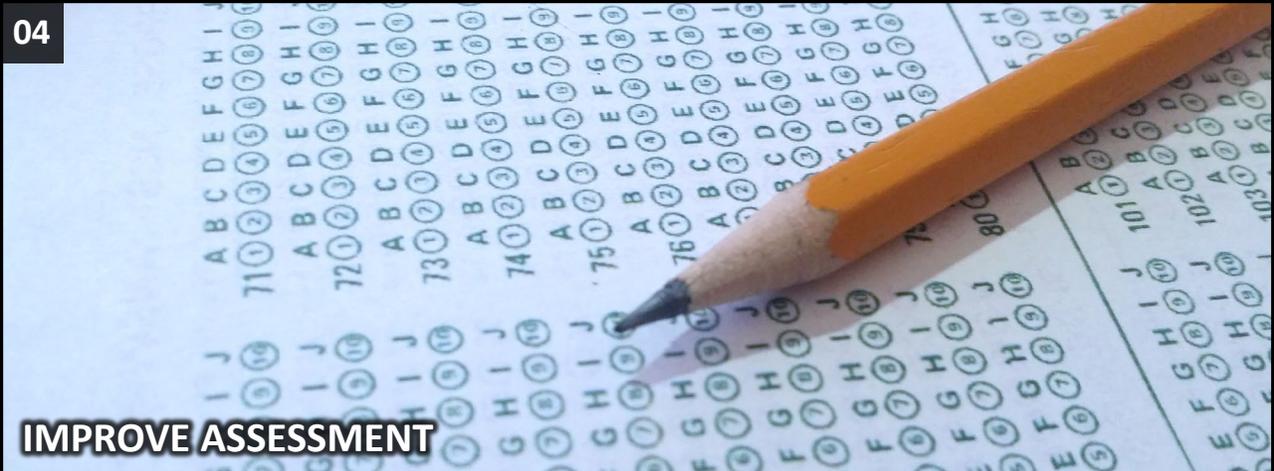


**BRIDGE EXISTING SILOS**



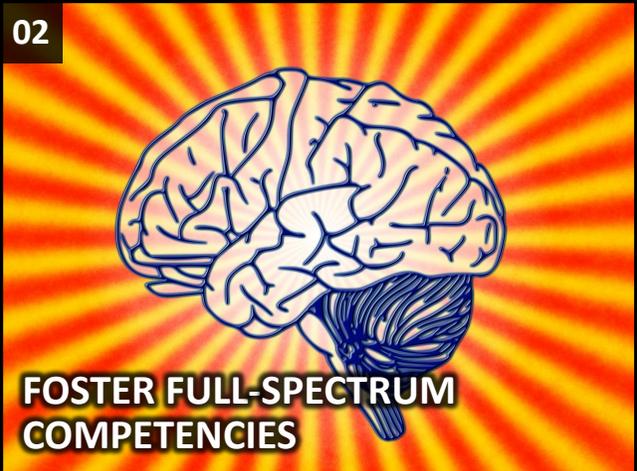
**REVEAL AND ENABLE  
INFORMAL LEARNING**

04



**IMPROVE ASSESSMENT**

02



**FOSTER FULL-SPECTRUM COMPETENCIES**

01



**BRIDGE EXISTING SILOS**

05



**UP-SKILL AND EMPOWER LEARNING PROFESSIONALS**

07



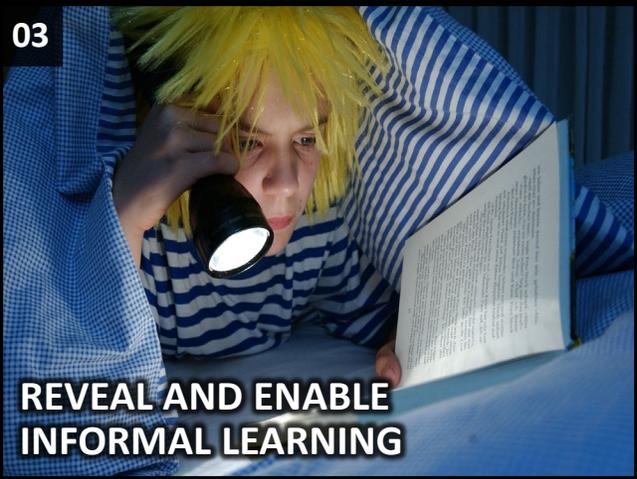
**FACILITATE A MINDSET SHIFT**

06



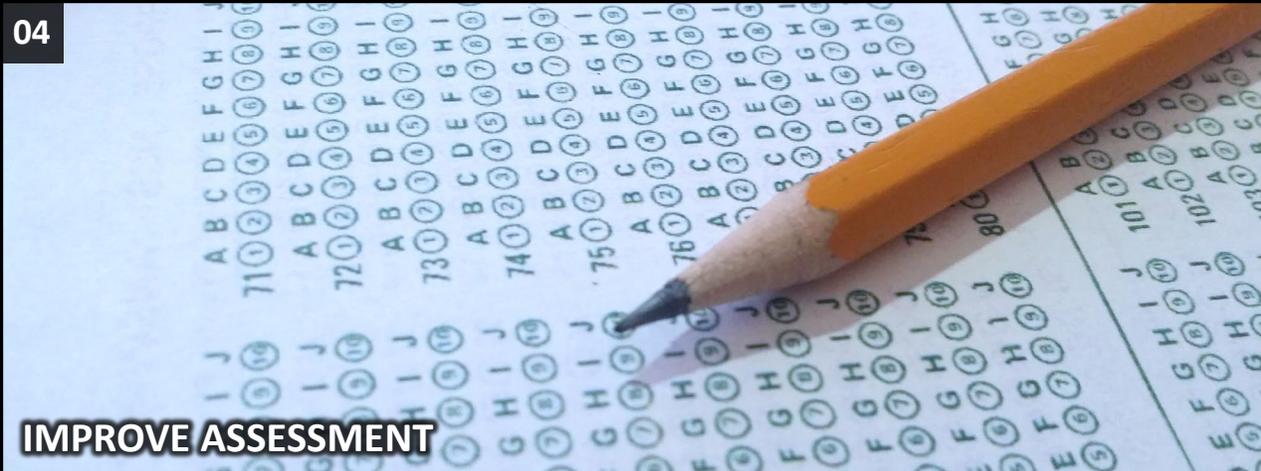
**PLAN FOR INTEGRATION OF "LEARNING" AND "PERSONNEL"**

03



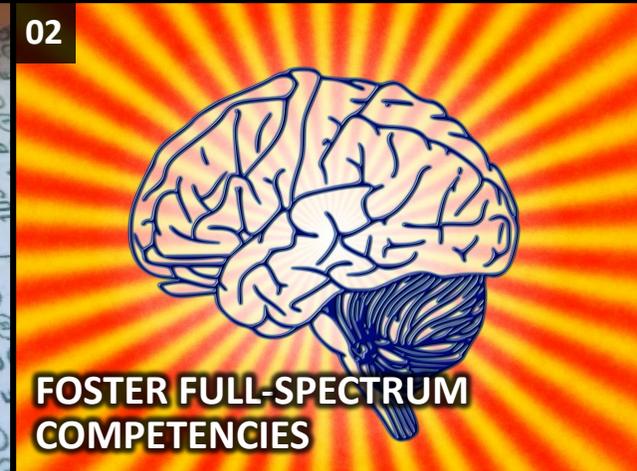
**REVEAL AND ENABLE INFORMAL LEARNING**

04



**IMPROVE ASSESSMENT**

02



**FOSTER FULL-SPECTRUM COMPETENCIES**

09



**DESIGN FOR CONVENIENCE AND EQUITY OF ACCESS**

10



**ENSURE LAWS, POLICIES, AND GOVERNANCE KEEP PACE**

01



**BRIDGE EXISTING SILOS**

05



**UP-SKILL AND EMPOWER LEARNING PROFESSIONALS**

07



**FACILITATE A MINDSET SHIFT**

06



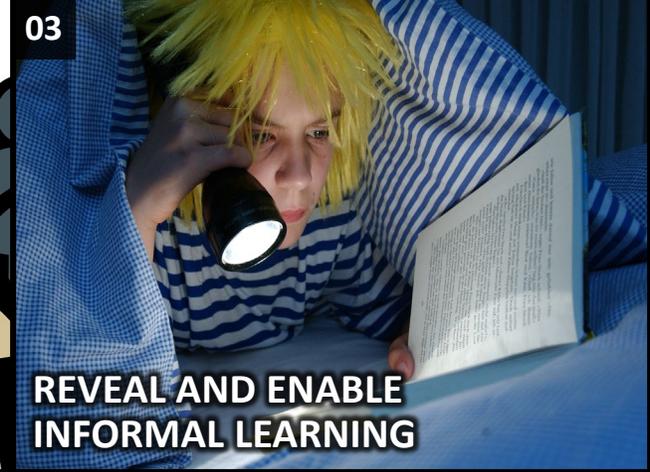
**PLAN FOR INTEGRATION OF "LEARNING" AND "PERSONNEL"**

08

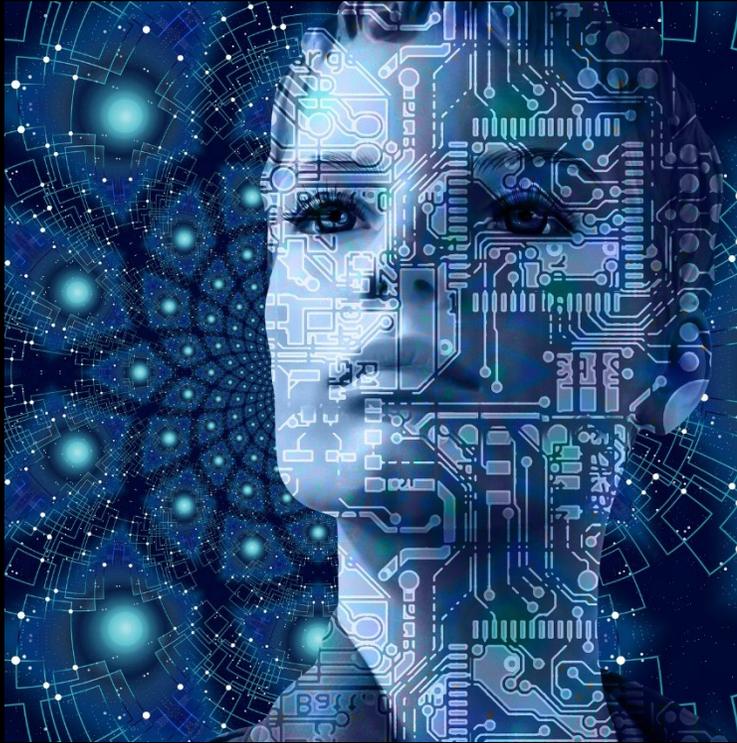


**ENABLE LEARNING AT SCALE (TECH AND METHODS)**

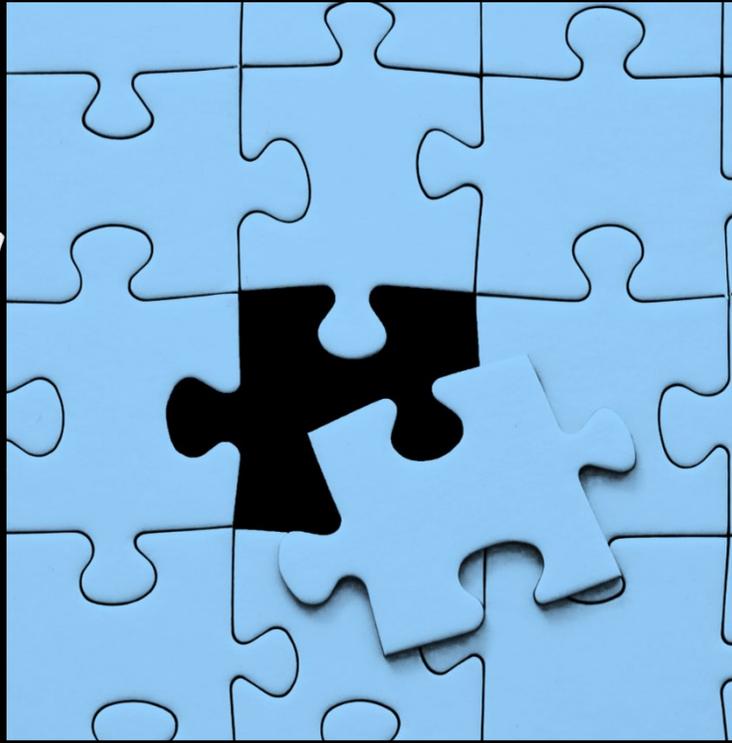
03



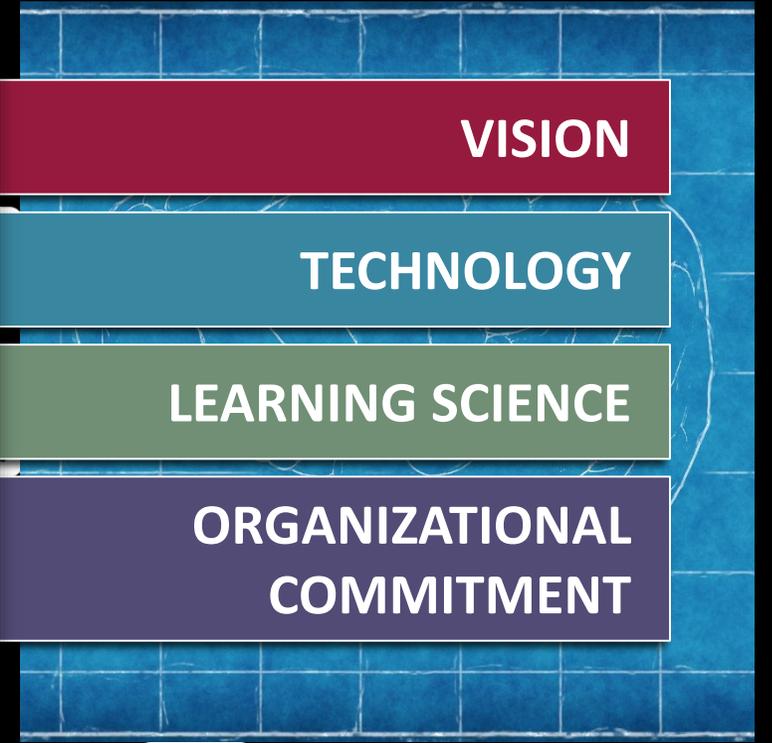
**REVEAL AND ENABLE INFORMAL LEARNING**



**DEMAND + CAPACITY**

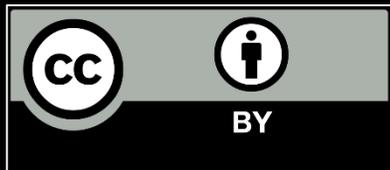
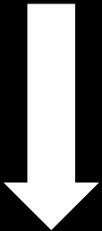


**COMPREHENSIVE  
APPROACH**



**BLUEPRINT**

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