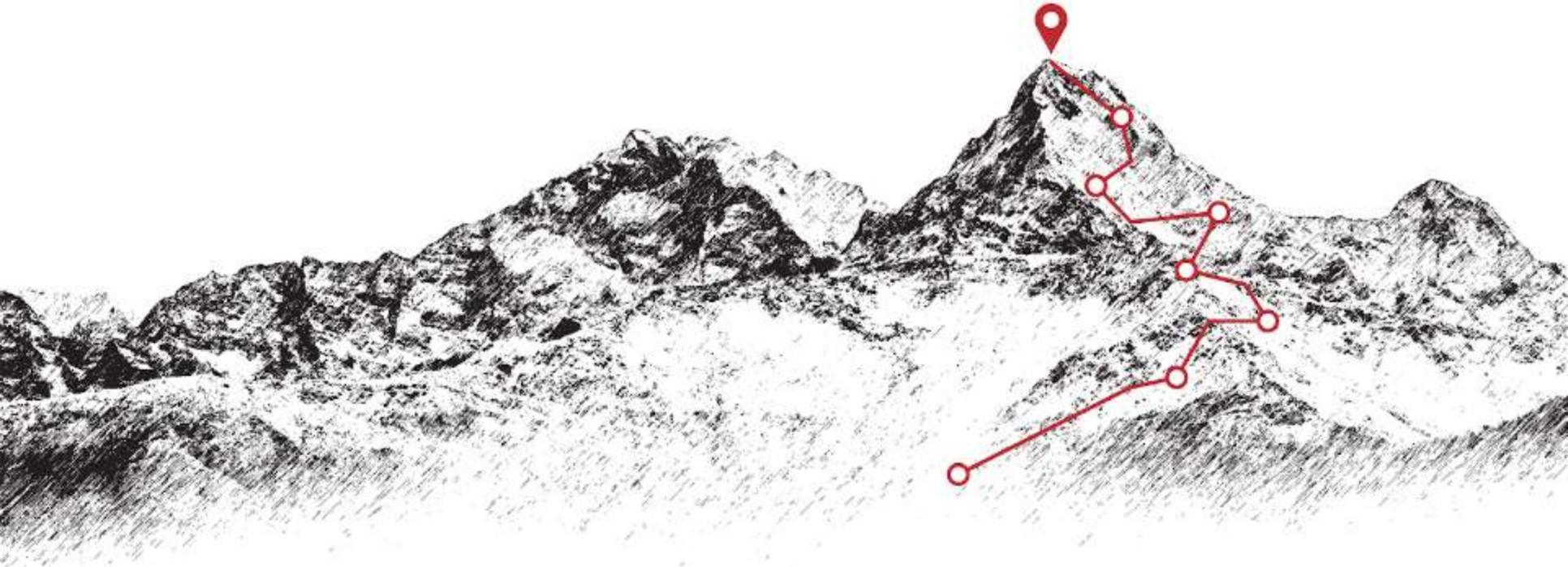


# Training Needs Analysis Needs a Modern Data Approach



# Where I am Coming From

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Tim Welch - USA

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US K12 educator  
(Technology Facilitator)

Data driven initiatives for effective design and assessment of education

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US Navy  
(Instructional Designer/  
Technologist)

Connecting the digital thread between technical requirements and effective training

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Eduworks  
(Program Manager)

Building the systems to connect digital threads

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# Training needs analysis is a difficult beast to tame.

Processes and technology have advanced the skills required for our workforce while their roles have diversified and specialized making it quite complex to maintain traceability to job requirements, skills, and regulations.



<https://myfpga.org/>

## How Internal and External Digital Change Impacts Organizations

### External Factors

- Hyperconnected Society, Economy, Technology
- Increasing Level of Automation of Work
- Rapid Technology Proliferation and Change
- Information Overload, Limited Insight

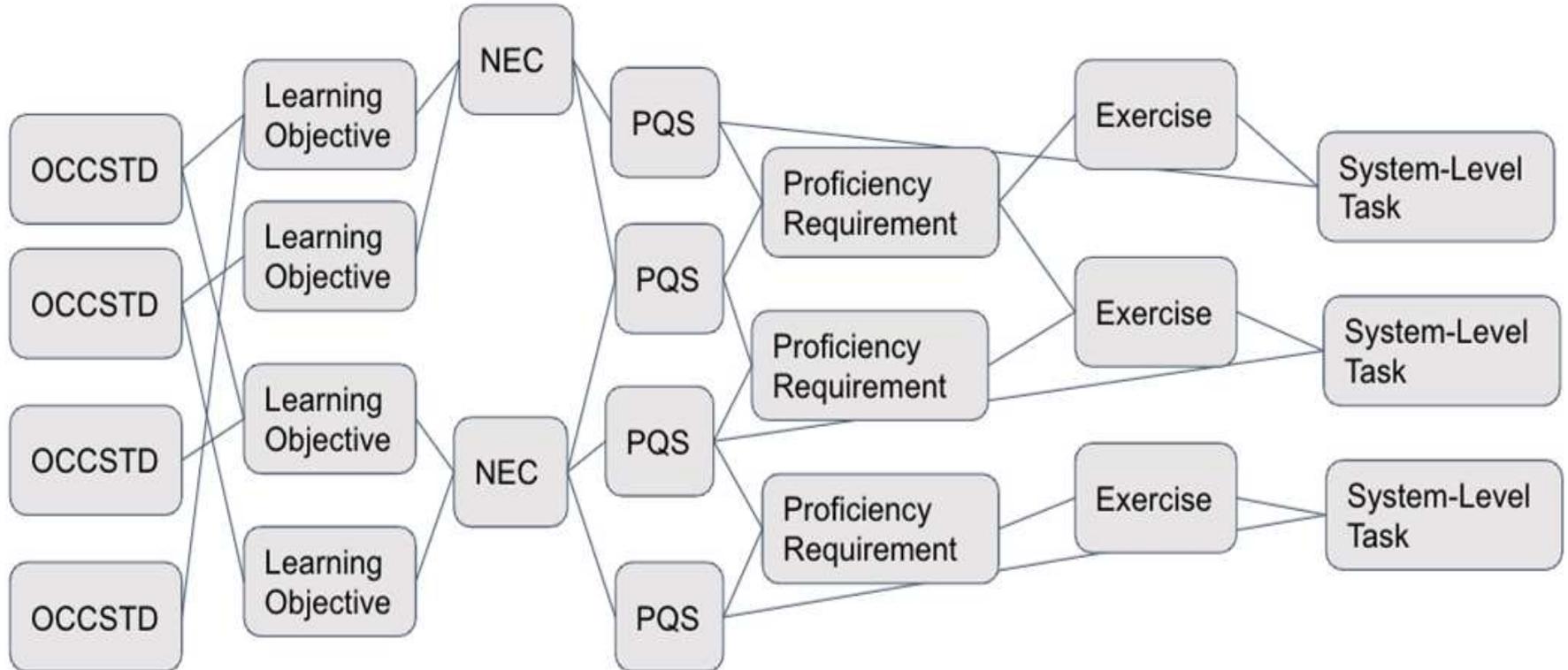
### Internal Factors

- Information in Silos, Not in Context (Lack of Internet Inside)
- Available Insight Varies, Not Authoritatively Rated

### Potential Impact on Today's Organizations



# Prerequisite qualifications will still exist



# Sneaker.net Data Transfer

## SKILL TRAINING

(Schools, courses and assignments directly related to occupation)

### REQUIRED SKILL TRAINING

Course Title	Course Location	CIN/CSE ID	Course Length	Date Completed
Operations Specialist "A" school; Accession Sailors "ONLY"	Great Lakes, IL	A-221-0011	39 days	
Computer Aided Dead Reckoning Tracer (CADRT) Advanced Operator <sup>1</sup>	Dam Neck, VA; San Diego, CA	A-104-0015	5	

1 - Reserve opportunities may exist, contact Reserve Forces Code N7 for authorization.

Identified Objects of Importance

### RECOMMENDED SKILL TRAINING

Course Title	Course Location	CIN/CSE/ACE ID	Course Length	Date Completed
OS A School School Modules <sup>1</sup>	Navy e-Learning	CSCS-OSA-500		
Radar Navigation Team Trainer <sup>1</sup>	Dam Neck VA, Pearl Harbor HI, San Diego CA, Yokosuka JA, Everett WA, Mayport FL	J-221-0344	2 days	

# Information is Mutated into a Digital Framework

**1**

**SKILL TRAINING**  
(School courses and assignments directly related to occupation)

REQUIRED SKILL TRAINING	Course Title	Course Location	COURSE ID	Course Length	Date Completed
Operations Specialist "A" school; Accession Sailors "ONLY"	Great Lakes	Great Lakes	A-704-001	10 days	
	Computer Aided Dead Reckoning Tracer (CADRT) Advanced Operator	Comp Mod. WA, San Diego, CA	A-104-001	5	
1. Reserve opportunities may exist, contact Reserve Forces Code RT for authorization.					
RECOMMENDED SKILL TRAINING	Course Title	Course Location	COURSE ID	Course Length	Date Completed
OS A School School Modules	Navy e-Learning		CSCS-OSA-500		
	Radar Navigation Team Trainer	Dam Neck VA, Pearl Harbor HI, San Diego CA, Yokosuka JA, Everett WA, Mayport FL	J-221-0344	7 days	

Identified Competencies

- 2**
- 1) Skill Training
    - i) Required Skill Training
      - (a) Operations Specialist "A" School; Accession Sailors "ONLY"
        1. Location: Great Lakes, IL
        2. Code: A-221-0011
      - (b) Computer Aided Dead Reckoning Tracer (CADRT) Advanced Operator
        1. Location: Dam Neck VA, Pearl Harbor HI, San Diego CA, Yokosuka JA, Everett WA, Mayport FL
        2. Code: A-104-0015
    - ii) Recommended Skill Training
      - (a) OS A School Modules
        1. Location: Navy e-Learning
        2. Code: CSCS-OSA-500
      - (b) Radar Navigation Team Trainer
        1. Location: Dam Neck VA, Pearl Harbor HI, San Diego CA, Yokosuka JA, Everett WA, Mayport FL
        2. Code: J-221-0344

**4**

Skill Training (LaDR) - OS E1

URL: ...ata/schema.cassproject.org/0.4/Competency/LADRIMP\_bea6248b-f192-3bf6-a4b3-d62d739c6ccb

REQUIRED SKILL TRAINING - OS E1

URL: ...ema.cassproject.org/0.4/Competency/LADRIMP\_d0f1a636-0242-3ac5-9a33-9a93f5ac7a95

Operations Specialist "A" school; Accession Sailors "ONLY"

URL: ...assproject.org/0.4/Competency/LADRIMP\_b13ac91f-4aa7-304f-8d5e-d6873ac04800

Computer Aided Dead Reckoning Tracer (CADRT) Advanced Operator

URL: ...assproject.org/0.4/Competency/LADRIMP\_a53a090b-e1ba-3c3b-a35c-afb9f3d7884c

RECOMMENDED SKILL TRAINING - OS E1

URL: ...chema.cassproject.org/0.4/Competency/LADRIMP\_6e7efc33-7114-34d3-9fa2-f177341c5a9d

Computer Aided Dead Reckoning Tracer (CADRT) Advanced Operator

URL: ...assproject.org/0.4/Competency/LADRIMP\_a53a090b-e1ba-3c3b-a35c-afb9f3d7884c

OS A School School Modules

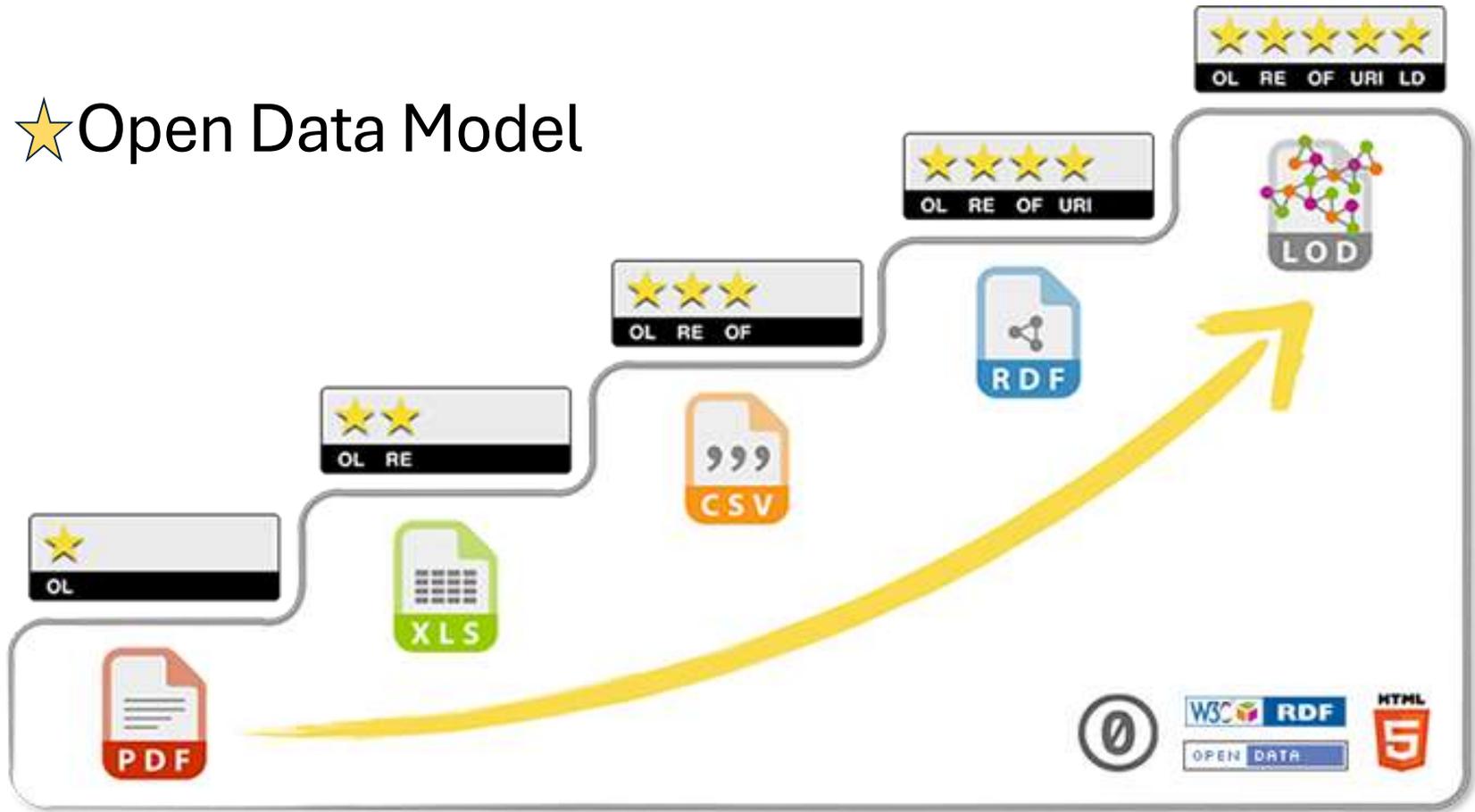
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**3**

Parent Competency Name	Competency Name
Skill Training (LaDR) - OS E1	REQUIRED SKILL TRAINING - OS E1
Skill Training (LaDR) - OS E1	RECOMMENDED SKILL TRAINING - OS E1
REQUIRED SKILL TRAINING - OS E1	Operations Specialist "A" school; Accession Sailors "ONLY"
REQUIRED SKILL TRAINING - OS E1	Computer Aided Dead Reckoning Tracer (CADRT) Advanced Operator
RECOMMENDED SKILL TRAINING - OS E1	OS A School School Modules
RECOMMENDED SKILL TRAINING - OS E1	Radar Navigation Team Trainer

# 5 ★ Open Data Model



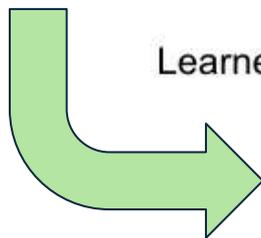
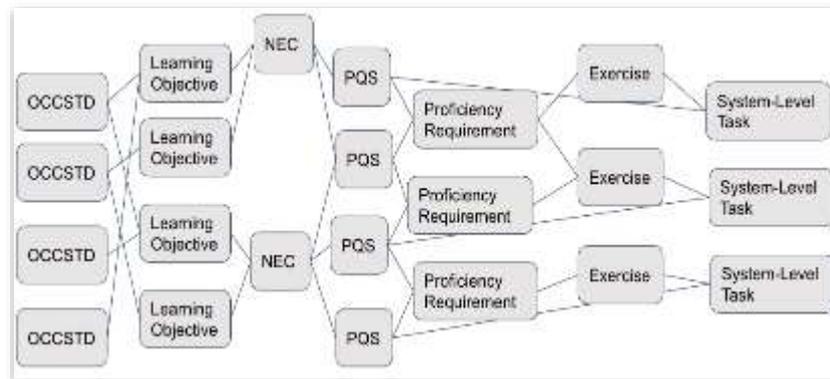
# Linked Open Data not Relational Data

**Linked data:** “a term used to describe a recommended best practice for exposing, sharing, and connecting pieces of data, information, and knowledge on the Semantic Web using URIs and ~~PDF~~.” - *Wikipedia*  
*Linked Data Formats*

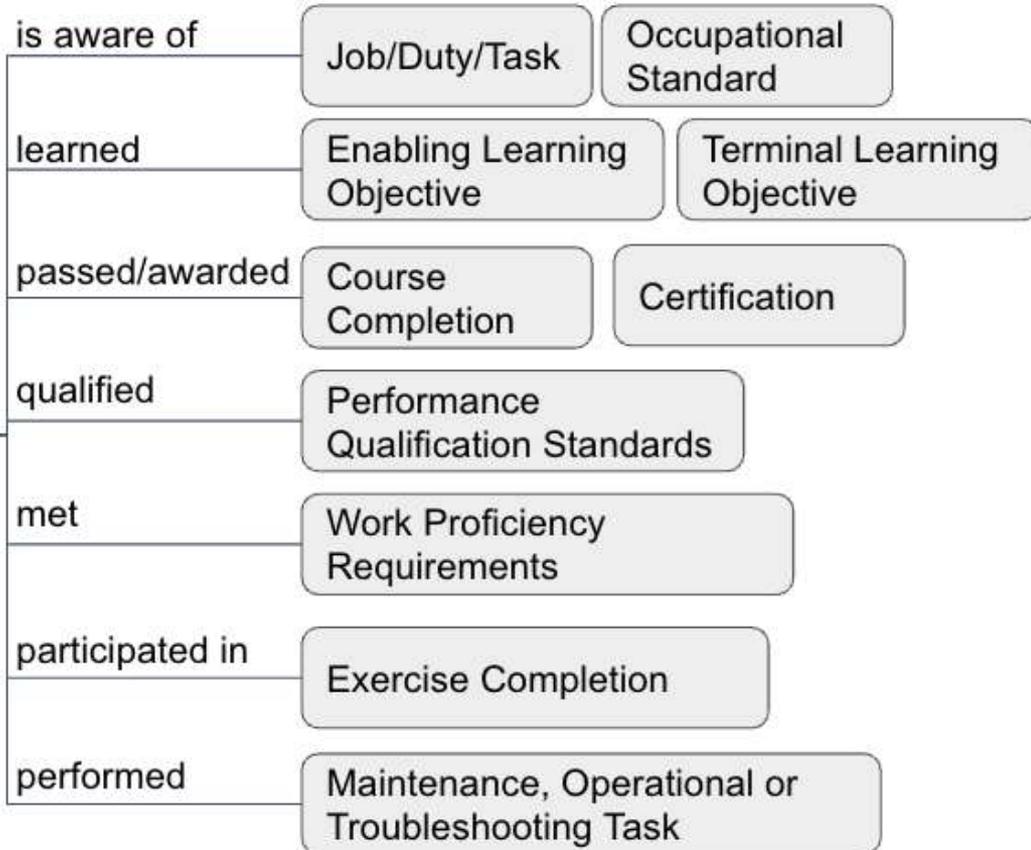
- URLs uniquely identify data, metadata, and provide a locator for that data.
- Linked Data Principles disambiguate models, definitions, and provide understanding.

If it's Linked Open Data, it's discoverable, accessible, and understandable from anywhere.

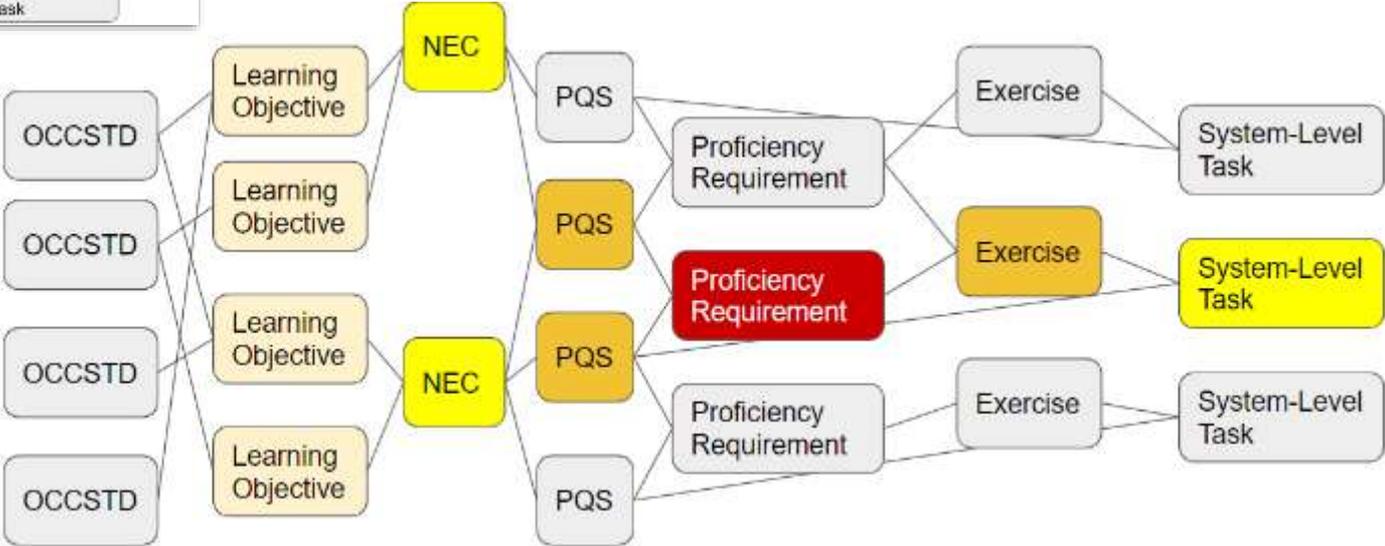
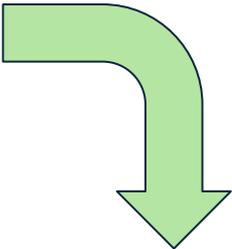
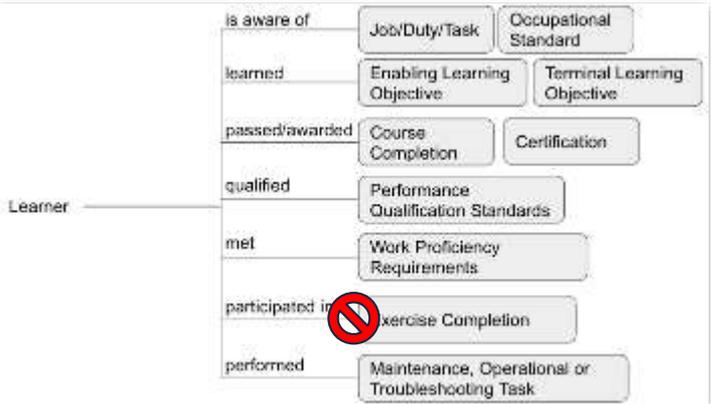
# Allow for Meaningful Digital Activity Tracking



Learner



# LOD Leads to Fault Detection Capabilities



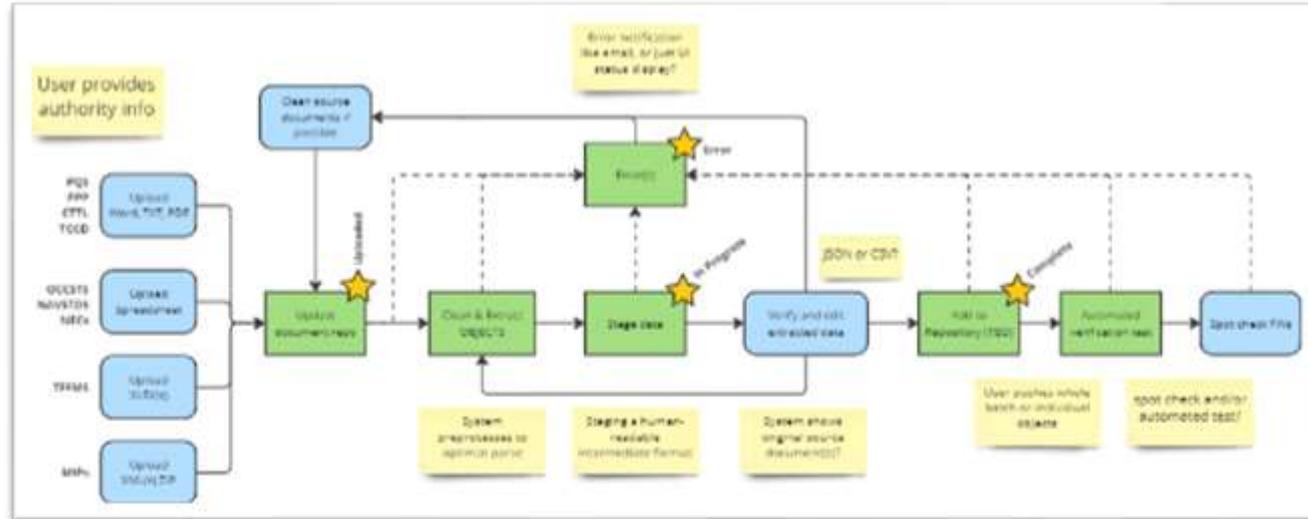
# But What Data Standards



# How to Get There

## Digitization\*

- Manual processes
- Semi-automated
- Automated



## Interoperability

- JSON/XML outputs
- S-Series or other data specifications for outputs
- Training/ Learner data (xAPI)

# Training Needs Analysis Needs a Modern Data Approach

Thank You

Questions?

