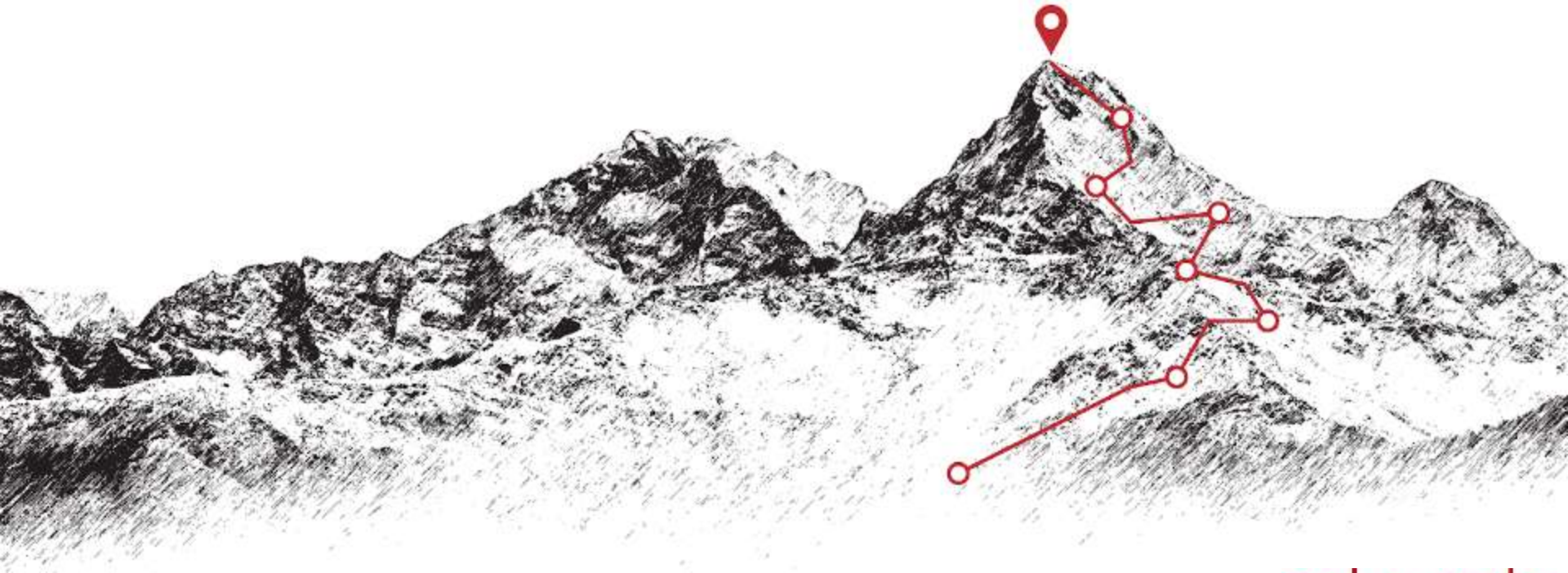


Training Needs Analysis Needs a Modern Data Approach



Where I am Coming From

Tim Welch - USA

US K12 educator
(Technology Facilitator)

Data driven initiatives for effective design and assessment of education

US Navy
(Instructional Designer/
Technologist)

Connecting the digital thread between technical requirements and effective training

Eduworks
(Program Manager)

Building the systems to connect digital threads

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://myfpca.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

Increased Complexity

Less Deterministic Operating Environment

Only Most Difficult Types of Work Remain

Technology Adoption Lag

Disjointed Internal Technology Landscape

Filter Failure, Cognitive Overload

Limited Capacity for Sense Making

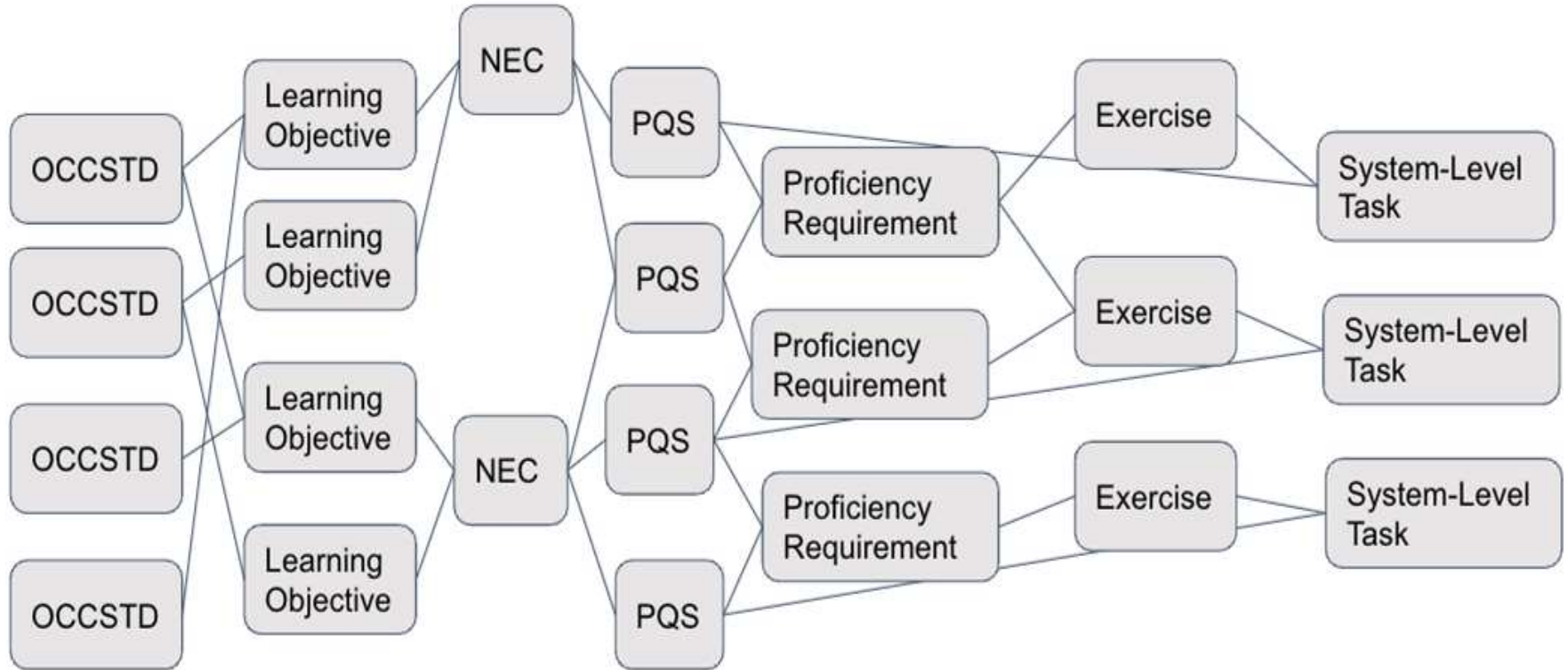
Difficult to Make the Best/Right Decisions

Limited Access to Corpus of Institutional Knowledge

Ineffective Search

Knowledge & Context Doesn't Get To Where It Needs to Be

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 ¹	Dam Neck, VA; San Diego, CA	A-104-0015	5 d	

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 ¹	Navy e-Learning	CSCS-OSA-500		
Radar Navigation Team Trainer ¹	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

(Schools), courses and assignments directly related to occupation)

Course Title	Course Location	COURSE ID	Course Length	Date Completed
Operations Specialist "A" school; Accession Sailors "ONLY"	Great Lakes, IL	A-221-0011	10 days	
Computer Aided Dead Reckoning Tracer (CADRT) Advanced Operator	San Diego, CA	A-104-0015	5	

1. Reserve opportunities may exist, contact Reserve Forces Code 67 for authorization.

Identified Competencies

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	2 days	

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

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☐ REQUIRED SKILL TRAINING - OS E1

URL [...ema.cassproject.org/0.4/Competency/LADRIMP_d0f1a36-0242-3ac5-9a33-9a93f5ac7a95](https://schema.cassproject.org/0.4/Competency/LADRIMP_d0f1a36-0242-3ac5-9a33-9a93f5ac7a95)

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

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☐ Computer Aided Dead Reckoning Tracer (CADRT) Advanced Operator

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☐ RECOMMENDED SKILL TRAINING - OS E1

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☐ Computer Aided Dead Reckoning Tracer (CADRT) Advanced Operator

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☐ OS A School School Modules

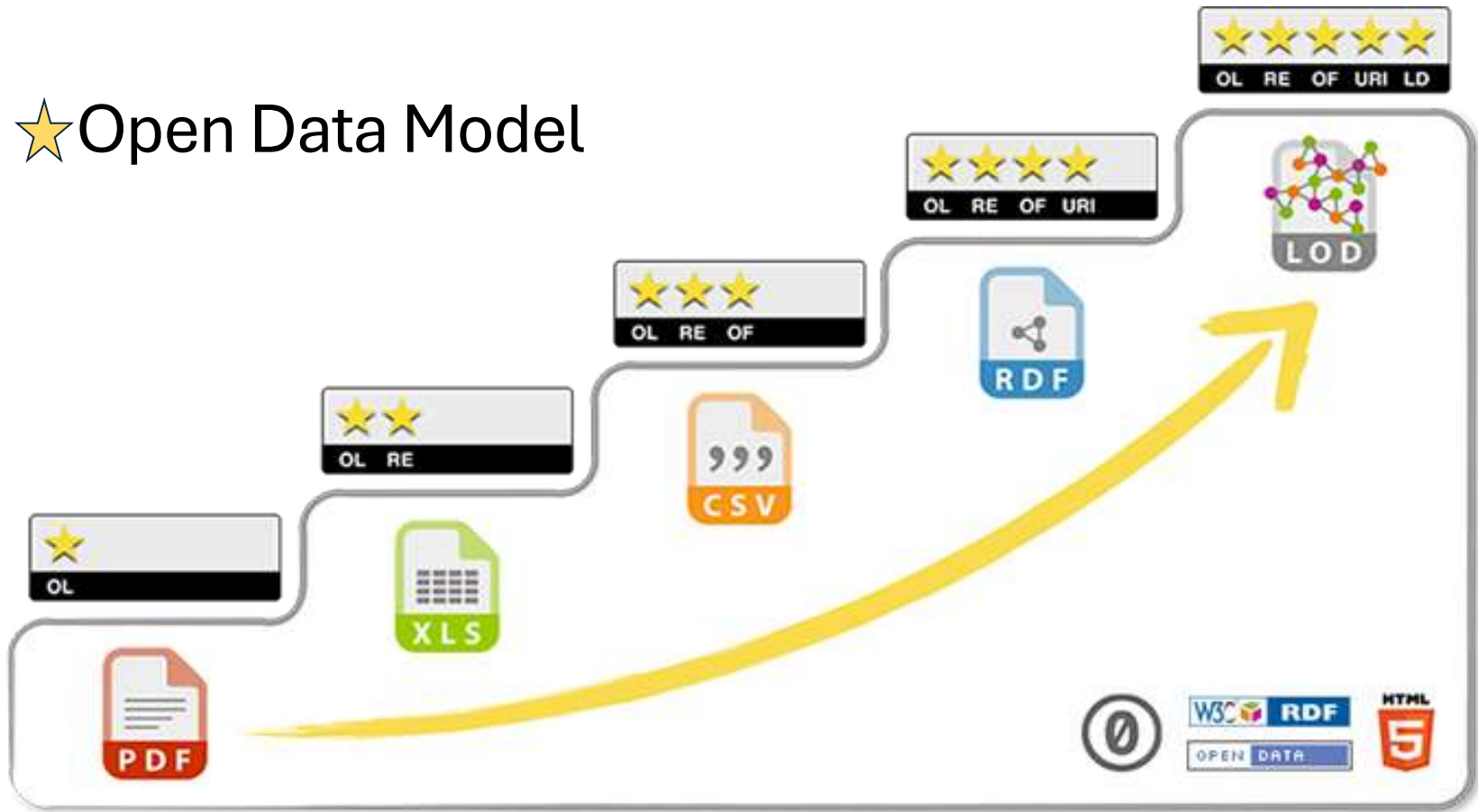
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3

Parent Competency Name	Competency Name
Skill Training (LaDR) - OS E1	Skill Training (LaDR) - OS E1
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

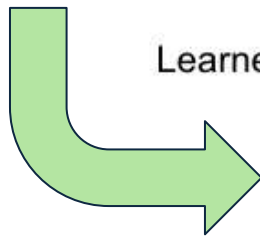
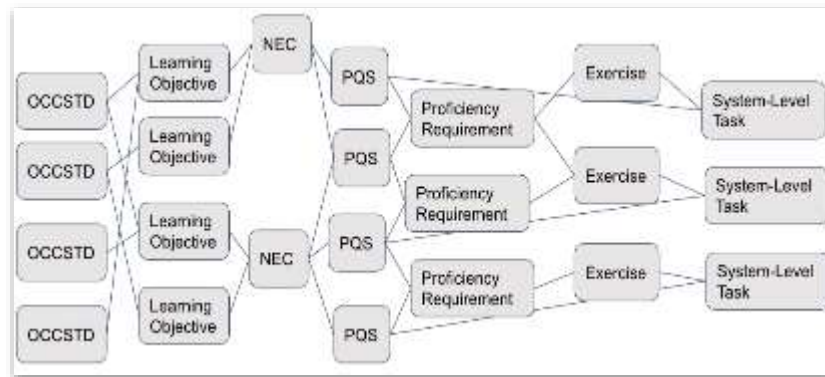
Linked data: “a term used to describe a recommended best practice for exposing, sharing, and connecting pieces of data, information, and knowledge on the Semantic Web using URIs and ~~RDF~~.” - *Wikipedia*

Linked Data Formats

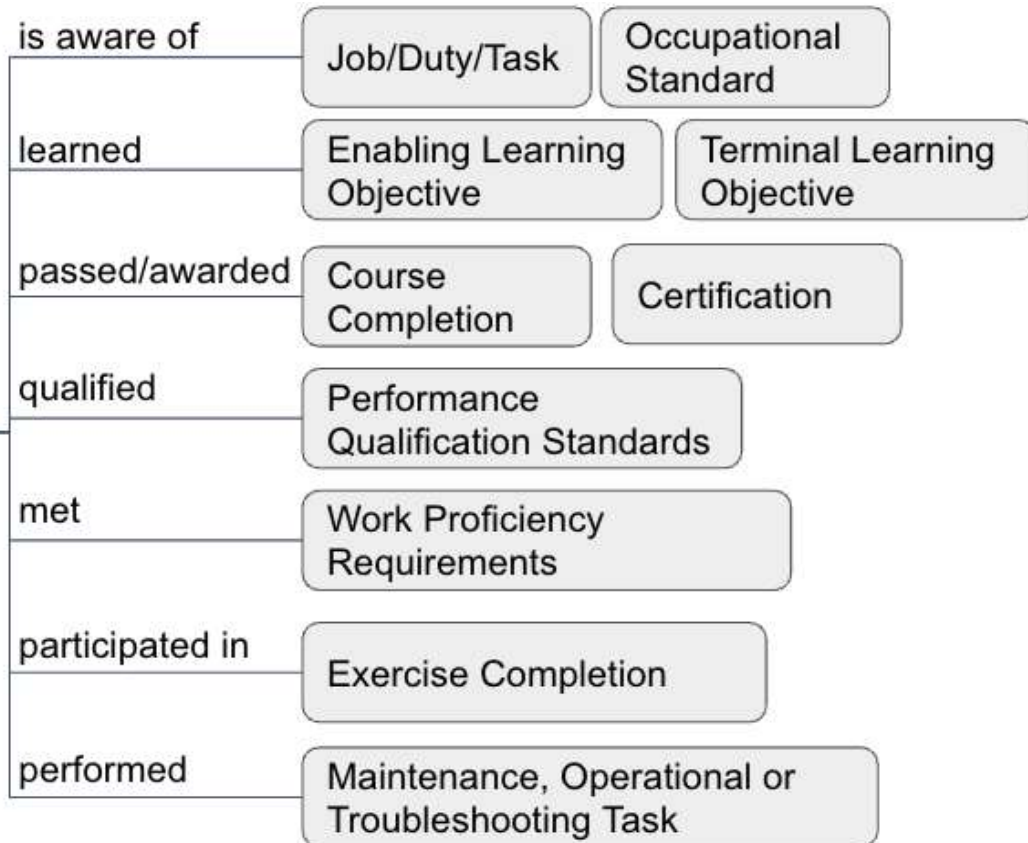
- URLs uniquely identify data, metadata, and provide a locator for that data.
- Linked Data Principles disambiguate models, definitions, and provide understanding.

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

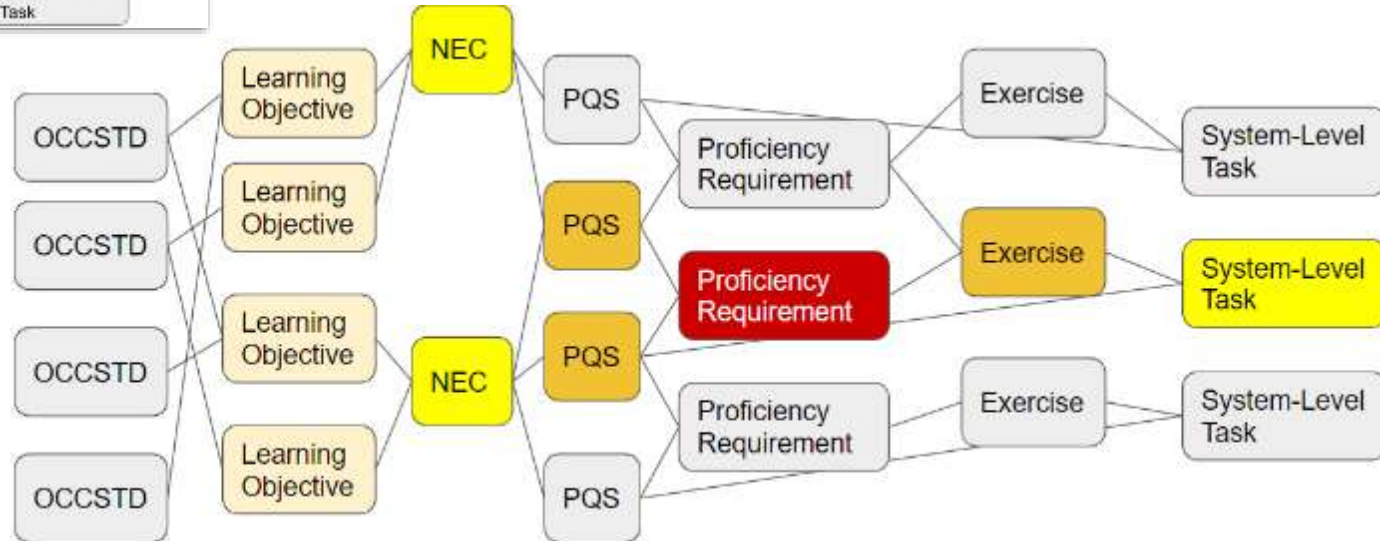
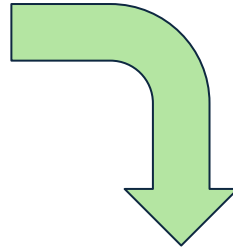
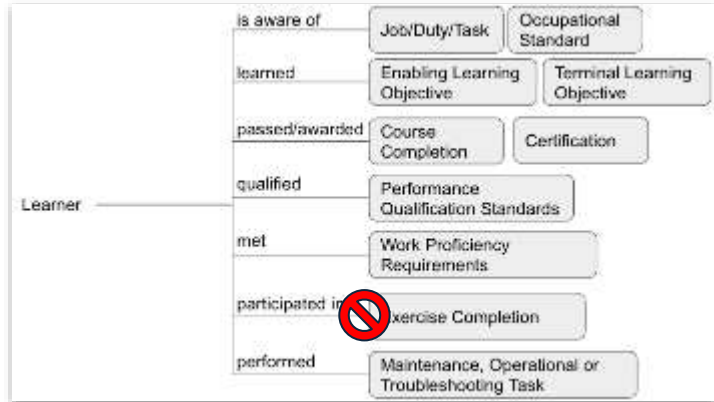
Allow for Meaningful Digital Activity Tracking



Learner



LOD Leads to Fault Detection Capabilities



But What Data Standards



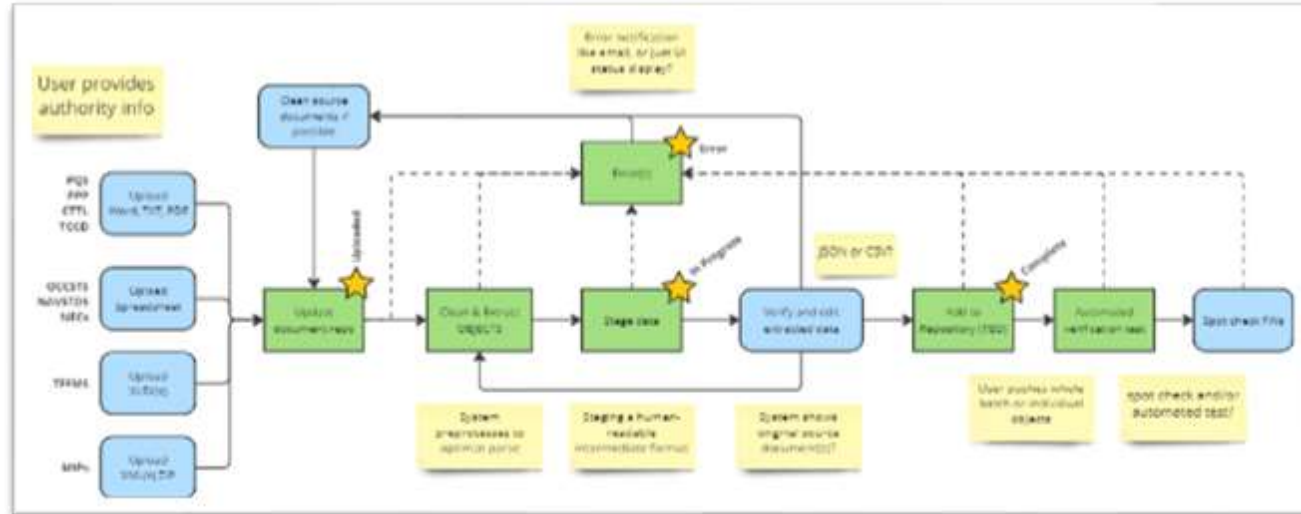
{xAPI}



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?

