



# Getting Learning Resources to Learners using LRMI Metadata

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# Why Metadata? To Enable an “Amazon for Learning”



## Product Market

- **Products** are described and have relationships to each other, and to interests of the buyer
- **Connects** the buyer to entries to allow them to make decisions on logistics
- **Discover** complimentary or necessary products
- **Physical** product dimensions (height, weight, length)

## Learning Market

- **Learning Resources** can be described, relate to each other, and to the abilities of the learner
- **Connects** the learner to entries to allow them to make decisions on logistics
- **Discover** tangential learning related to opportunities (job)
- **Mental** resource dimensions (knowledge, skill, abilities)

# Real Products that Use Learning Resource Metadata

## United States Department of Defense



**ENTERPRISE COURSE CATALOG**  
A single Defense-wide training and education course catalog made up of consolidated distributed learning course listings across the DoD which is accessible through a single web-based portal.

### Summary

- Not all learning activities are **Courses**
- But the **DoD** has a ton of them!
- This capability wrangles them for sharing both the **Resources** and **Opportunities**
- Sharing reduces **cost** and connects learners to learning opportunities **faster**
- **Categorization** and linking to **competencies** allow the learner's search results to be more relevant

# Real Products that Use Learning Resource Metadata

## MatchMaker

The screenshot shows the MatchMaker application interface. At the top, there are navigation links: 'Descriptor' (selected), 'Matches ▾', 'Logout', 'Match Console', and dropdown menus for 'Competency Statement' and 'MM Default'. Below these are two detailed resource cards:

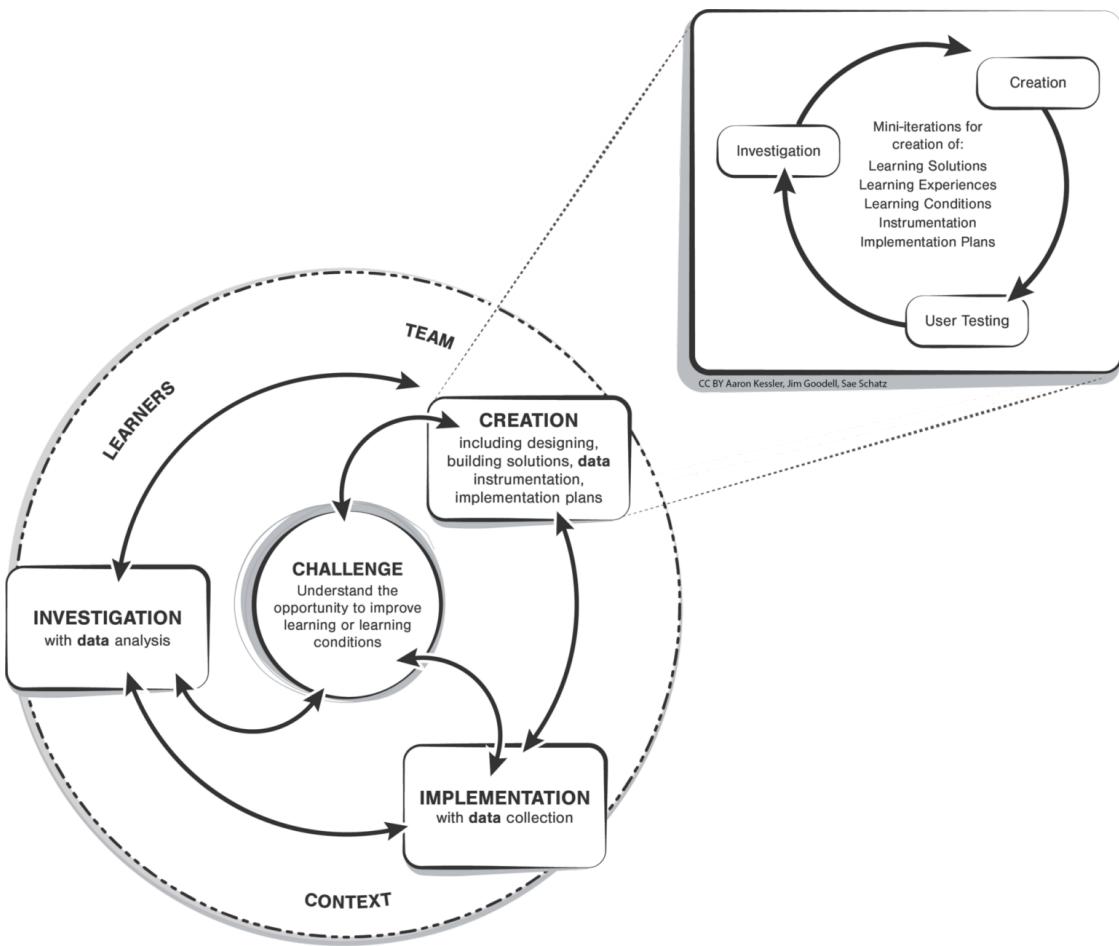
**Learning Resource**  
**Algebra 1: Discovering expressions, equations and functions - Operations in the right order**  
Detail  
URL: <https://www.mathplanet.com/education/algebra-1/discovering-expressions,-equations-and-functions/operations-in-the-right-order>  
Subject: Math  
Creator: Mathplanet  
Provenance: David Longdon  
Key: [5560C-6554C-13588C](#)

**Competency Statement**  
**CCSS.Math.Content.6.EE.A.2c**  
MatchIndex: 50  
Find Matches  
Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas  $V = s^3$  and  $A = 6 s^2$  to find the volume and surface area of a cube with sides of length  $s = 1/2$ .  
Detail  
URL: <http://corestandards.org/Math/Content/6/EE/A/2/c>  
Subject: Math  
Identifier: CCSS.Math.Content.6.EE.A.2c  
Ed. Level: 06  
Creator: CCSSO  
Provenance: SandboxA  
Key: [6213C-6554C-5560P](#)

## Summary

- MatchMaker employs the **LRMI** for industry **standard learning resource metadata**
- MatchMaker's super power is to **conceptually match** learning elements.
- Employing the LRMI let's us **focus** on our core competency
- LRMI's open-ness **doesn't constrain** our business model
- Because the LRMI is **baked into P2881** we can extend the metadata we use

# Metadata in the Learning Engineering Process



- Metadata creation previously was thought of as an **implementation** detail but it really should be within **investigation**
- Rationale: the who/what/why should be known long **before creation**
- End state: Metadata **always exists** in the semantic web, it just connects **new resources**
- Metadata creation should be a **shared** activity, not just by **roles**, but also **AI**
- **Generative AI** can write contract proposals from organization documents, gain **human approval**, then **populate** metadata properties from models

# We Can Help! (The LRMI Working Group, That Is)

## Grow Your Idea

- **Provide** your use case
- We will help with the **value proposition**
  - and **Explore** tangent use cases and known partners
- **Report** your use of the LRMI
  - <https://tinyurl.com/42yuw9rz>
- **Collaborate** on implementation details using our **expertise** in the available standards / vocabulary
- **Sign up** - Text LRMI, Name, and email to 360-223-2453
- **FREE**

## Share Your Idea

- **Present** your tool that uses **metadata** to achieve a learning-based outcome
- **Discuss** the vocabulary used and any use or potential use of **standards**
- **Receive feedback** from those with a vested interest in your success
- **Join** the **LMRI Monthly call** by emailing [andy.johnson.ctr@adlnet.gov](mailto:andy.johnson.ctr@adlnet.gov) or [michael@matchmakeredlabs.net](mailto:michael@matchmakeredlabs.net)
- **FREE**