



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



ECC

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

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

The screenshot shows the MatchMaker interface. At the top left is the MatchMaker logo. On the right is a 'Logout' button. Below the logo is a 'Descriptor' section with a search bar and a dropdown menu set to 'Any'. To the right of the search bar is a 'Matches' section with a dropdown menu set to 'Competency Statement' and a 'Match Console' button. Below the search bar, there are two match cards. The first card is for a Learning Resource titled 'Algebra 1: Discovering expressions, equations and functions - Operations in the right order'. It includes a 'Find Matches' button and a 'Detail' section with fields for URL, Subject, Creator, Provenance, and Key. The second card is for a Competency Statement titled 'CCSS.Math.Content.6.EE.A.2c'. It includes a 'Find Matches' button and a 'Detail' section with fields for URL, Subject, Identifier, Ed. Level, Creator, Provenance, and Key. The match index for this pair is 50.

Learning Resource Find Matches

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 MatchIndex: 50 Find Matches

CCSS.Math.Content.6.EE.A.2c

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 $A = 6s^2$ 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

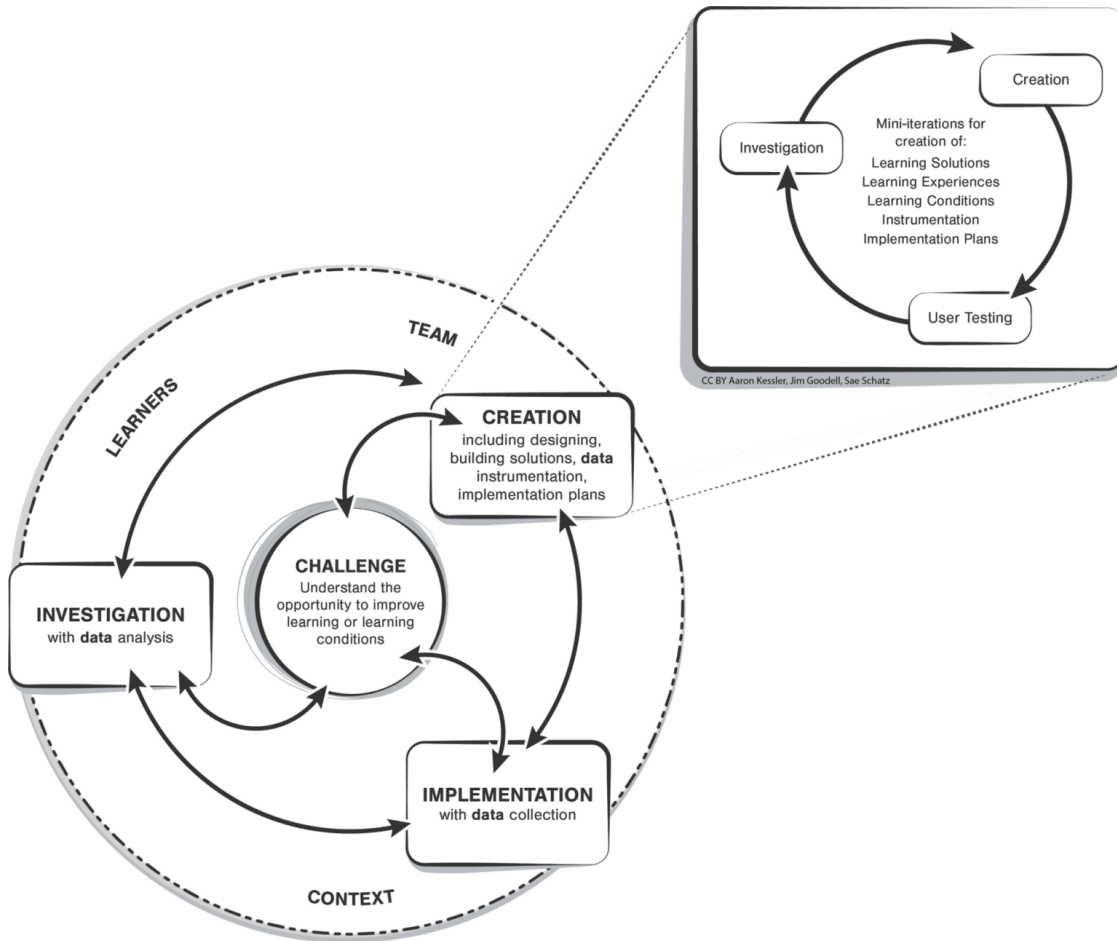
Ed. Level 06

Creator CCSSO

Provenance SandboxA

Key [6213C-6554C-5560P](#)

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 or michael@matchmakeredlabs.net
- **FREE**