

## LD4PE: A Competency-Based Framework for DCMI's Professional Education and Training Agenda

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### 1. LD4PE Project Description

This poster reports on early progress of the Linked Data for Professional Education (LD4PE) project to develop a competency-based referatory of learning resources for teaching and learning Linked Data practices in design, implementation, and management. Funded by a grant from the U.S. Institute for Museums and Library Services (IMLS), the project builds on a 2011 IMLS Planning Grant that explored the feasibility and form of an online Linked Data *Exploratorium* of learning resource mapped to a *Competency Index for Linked Data (Index)* that would provide students, professionals, and instructors in the GLAM fields (galleries, libraries, archives, and museums) with structured access to learning resources about Linked Data technology. Learning resources elucidating specific professional competencies are being described and indexed according to knowledge, skills, and habits of mind they embody and are accordingly clustered for discovery and exploration. The benefits of machine actionable data denoting expected competencies have been widely recognized (Ward & Nickolas, 2010). While the *Exploratorium* environment will focus on supporting development of professional competencies related to Linked Data, the project resources, toolkit, *Index*, and website developed for the project will also exemplify those principles and practices.

The *Index* at the center of the project will be a cohesive, stakeholder-developed set of RDF-modeled assertions defining competencies, knowledge, and skills needed for using Linked Data in the GLAM environment. The *Index* will be published as Linked Data in both human-readable and machine-actionable forms using Resource Description Framework (RDF). Individual competency assertions in the *Index* will be assigned globally unique Web identifiers (URIs) to assist in aggregating learning resources about Linked Data practice from across the Web for discovery and exploration by both learners and instructors.

In addition to providing metadata about learning resources, the *Exploratorium* will supply a toolkit, adapted from existing tools and services, that enables creation and subsequent discovery of: (1) RDF metadata describing learning resources from across the Web; and (2) learning maps expressing curricular structures or personal learning trajectories superimposed over the competency framework. These learning maps, also published in RDF, will provide learners and instructors with cognitive scaffolding for approaching the topic of Linked Data.

While the Exploratorium is intended to harvest and aggregate learning resource descriptions created by others in RDF and RDFa, the LD4PE Project will initially seed the environment with project-generated descriptions to demonstrate the site's service potential and allow for formative assessment and refinement of the competency framework, toolkit, Web environment, and best-practice documentation. This "seeding" will include creation of learning resource descriptions for

existing resources and for resources created by project partners to exemplify the focused, recipe-like resources the *Exploratorium* will feature going forward.

The *Exploratorium* website will also support social recommendation mechanisms to highlight the best learning resources and their alignment to the Index. The environment will provide built-in broadcast and responsive communication channels for community engagement and continuous feedback. Figure 1 provides a high-level view of the intended architecture.

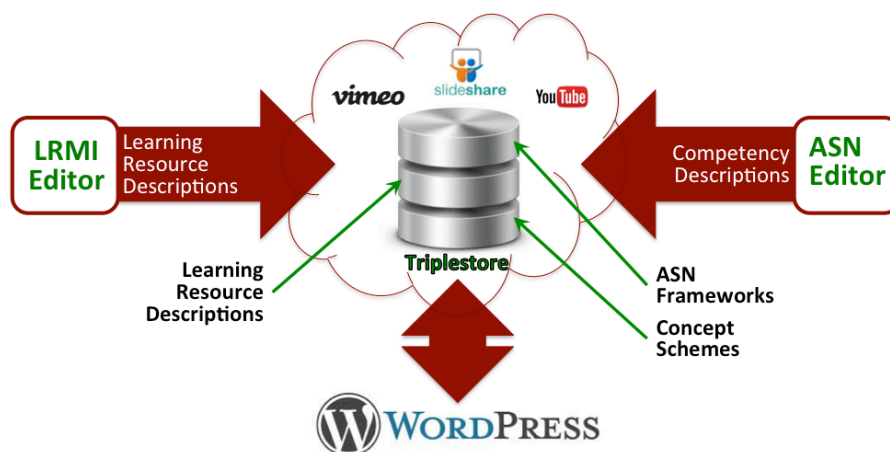


FIG.1 Exploratorium architecture

LD4PE project outputs include: (1) an RDF-modeled *Competency Index for Linked Data* based on the Achievement Standard Network Description Framework (ASN-DF)(Sutton & Golder, 2008); (2) a toolkit to support the generation of RDF metadata; (3) a set of cataloged learning resources, with some developed as exemplars by project partners and others discovered from across the Web; (4) an *Exploratorium* website for the learning resource metadata, toolkit, learning maps, and supporting resources; and (5) best practice documentation available through the *Exploratorium* for all processes, from competency framework development through learning resource development and description to learning map generation.

## 2. The *Exploratorium* in the Context of DCMI

On successful completion of the LD4PE grant work, the *Exploratorium* will be maintained by the Dublin Core Metadata Initiative (DCMI) as a basic framework for development of its education and training agenda. While focused initially on Linked Data, the lessons learned through development of the *Competency Index for Linked Data* will inform similar competency framework development in other areas of interest to DCMI.

## References

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