Part IV. How Can I Use LD4PE in self-learning, teaching, and training?

1. **Learning Maps** -- competencies
2. **Saved sets** – resources
3. **OCLC Dataset** -- A dataset to try, with sample queries and a guide sheet.
1. Learning Maps

- Logical sequences; Paths or Trajectories to follow
- Competencies targeted to specific audience or theme
- Each item links to a list of resources which teach the competency
Newly Created Map

See a list of the learning maps at http://explore.dublincore.net/explore-learning-resources-by-competency/learning-maps/

Competencies for Catalogers
Created: 8/29/2017
Considers the paradigm shift necessary to catalog to an expanded data model.
Set Creator: Sean Dolan

Competencies for Data Scientists
Created: 8/11/2017
Recognizing Linked Data as a valuable resource and dealing with it.
Set Creator: Sean Dolan

Competencies for Web Developers
Created: 7/24/2017
Topics include RDF serializations, microdata for HTML markup.
Set Creator: Sean Dolan

Competencies for Librarians
Created: 7/22/2017
Deals with the challenges of transitioning from traditional bibliographic records.
Set Creator: Sean Dolan

Competencies for Archivists
Created: 7/15/2017
For quickly getting archivists up-to-speed with Linked Data standards.
Set Creator: Sean Dolan
Example: Individual Learning Map Page
-- a learning map prepared for archivists – what are the key competencies?

- Below each competency, the number of resources tagged to it are listed.
- Clicking this link will take you to these resources.
Competency Page with List of Tagged Resources

**Competency:** Understands That Linked Data (2006) Extended The Notion Of A Web Of Documents (The Web) To A Notion Of A Web Of Finer-Grained Data (The Linked Data Cloud).

- **Desiderata For An Authoritative Representation Of MeSH In RDF**
  Although the Semantic Web provides a framework for the integration of resources on the web, datasets are not always made available in RDF by their [...]  
  ***** (Please share your rating)

- **Semantic Web Misconceptions**
  The Semantic Web has been talked about for more than a decade. Over those years, several mistaken or misleading ideas about the Semantic Web have [...]  
  ***** (Please share your rating)

- **Transforming The Medical Subject Headings Into Linked Data: A New Article In The Journal Of Library Metadata**
  This article reviews the pilot project to convert the Medical Subject Headings (MeSH) from XML to Linked Data/RDF. The article examines the collaborative process, the [...]  
  ***** (Please share your rating)

- **Europeana: Moving To Linked Data**
  This article describes the pilot project undertaken by Europeana. Its goal was to replace data societies within the cultural heritage domain with "a distributed information [...]  
  ***** (Please share your rating)

- **The Semantic Web And Linked Data Concepts: A Basic**
Learning Map: Competencies for Catalogers

What's This?

Considers the paradigm shift necessary to catalog to an expanded audience (the Web) as well as technical details involved.

Understands that Linked Data (2006) extended the notion of a web of documents (the Web) to a notion of a web of finer-grained data (the Linked Data cloud).

69 resources

Knows Tim Berners-Lee's use of HTTP URIs to identify resources (URIs of other things)

0 resources

Knows that Uniform Resource Locators (URLs) represent independent identities

18 resources

Understands that URIs are distinct from the objects they represent

0 resources

Knows the subject URI

46 resources

Understands the use of datatype and language tags with literals.

15 resources

Knows graphic conventions for depicting RDF-based models.

10 resources

Distinguishes the RDF abstract data model and concrete serializations of RDF data.

41 resources

Recognizes that owl:sameAs is a biodiversity of formal semantics that can be used to connect different views of the same entity

13 resources

Identifies resource attributes as candidate for RDF property

9 resources

Uses RDF Schema to express objects, properties, and relationships

53 resources

Knows Simple Knowledge Organization System (SKOS) for labeling and organizing into information

24 resources

Knows SKOS eXtension for Labels, or SKOS-XL (2009), a small set of additional properties for describing and linking lexical labels as instances of the class Label.

4 resources

Managing identifiers (URI)

19 resources

Creating RDF data

44 resources

Cleaning and reconciling RDF data

17 resources

Mapping and enriching RDF data

32 resources

Knows the SPARQL 1.1 Update language for updating, creating, and removing RDF graphs in a Graph Store

32 resources

Understands the difference between SQL query language (which operates on database tables) and SPARQL (which operates on RDF graphs).

43 resources
2. Saved Sets

- Curated collection of learning resources
- Targeted to specific audience or theme
- Each item links to resource’s description page

http://explore.dublincore.net/explore-learning-resources-by-competency/all-saved-sets
• Authenticated users can save Sets as either Public or Private
• Any user can view Public Sets

http://explore.dublincore.net/explore-learning-resources-by-competency/all-saved-sets
3. The OCLC Dataset

- Static data to test skills on or to use in creating new learning resources
- Ensures that consistent results can be obtained from queries and that access will not suddenly disappear
- Identifies and describes bibliographic resources gleaned from library, archives, and museum data from around the world.
- Extracted from the original MARC records based on:
  - FAST headings
  - DDC classes
  - LCC subclasses

Access the static dataset at: http://purl.org/dataset/WorldCat/LibraryScienceSubset
DOWNLOAD as:
N-TRIPLES
MARC/XML

License:
ODC-BY

AVAILABILITY:
through
December 2027

ACCESS THE DATASET AT: http://purl.org/dataset/WorldCat/LibraryScienceSubset
TUTORIAL:

• DOWNLOAD DATASET
  • N-Triples

• STORE PERSISTENTLY
  • Apache Jena’s TDB (Triple Store)

• Query using SPARQL
  • Command Line using TDBQUERY (similar to ARQ)
  • Interpreting and Storing Results

PDFs AVAILABLE:

• Simple Query 1: Union and Shared Subjects
• Simple Query 2: Optional and Turning an Object into a Subject
• Simple Query 3: Negation Using Not Exists and Minus

• Additional SPARQL Exercises
• Answers and Walkthrough
The Future of LD4PE

• Engagement beyond Linked Data
  – For DCMI, the Linked Data index has served as a training ground
  – A point of departure for development of competency indexes defining knowledge, skills and acquired abilities in other areas of metadata interest:
    • Knowledge Organization Systems development and application
    • Application Profiles design and implementation
    • Etc.
Crowdsourcing LDCI maintenance

https://dcmi.github.io/ldci/D2695955/

LD4PE Competency Index

Version: 2017-06-28 14:34:35
View at: https://dcmi.github.io/ldci/D2695955/

<table>
<thead>
<tr>
<th>Code</th>
<th>Type</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Topic Cluster</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Topic</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Competency</td>
<td>Tweet-length assertion of knowledge, skill, or habit of mind.</td>
</tr>
<tr>
<td>D</td>
<td>Benchmark</td>
<td>Action demonstrating accomplishment in related competencies.</td>
</tr>
</tbody>
</table>

Note: Hover over a code to see its URI. Click on a code to visit its full definition on the Achievement Standards Network website.

A: Fundamentals of Resource Description Framework

- B: Identity in RDF
  - C: Knows that anything can be named with Uniform Resource Identifiers (URIs), such as places, events, artifacts, and concepts.
Users can propose new competencies

real, imagined, or conceptual.

- [C:](http://asn.desire2learn.com/resources/S2709298) Understands that resources are declared to be members (instances) of classes using the property rdf:type.
- [C:](http://asn.desire2learn.com/resources/S2709299) Understands the use of datatypes and language tags with literals.
- [C:](http://asn.desire2learn.com/resources/S2709997) Understands blank nodes and their uses.
- [C:](http://asn.desire2learn.com/resources/S2710083) Understands that QNames define shorthand prefixes for long URIs.
- [D:](http://asn.desire2learn.com/resources/S2710087) Uses prefixes for URIs in RDF specifications and data.
- [C:](http://asn.desire2learn.com/resources/S2731549) Articulates differences between the RDF abstract data model and the XML and relational models.
- [C:](http://asn.desire2learn.com/resources/S2731551) Understands the RDF abstract data model as a directed labeled graph.
- [C:](http://asn.desire2learn.com/resources/S2731552) Knows graphic conventions for depicting RDF-based models.
- [D:](http://asn.desire2learn.com/resources/S2731553) Can use graphing or modeling software to share those models with others.
- [C:](http://asn.desire2learn.com/resources/S2709875) Understands a named graph as one of the collection of graphs comprising an RDF dataset, with a graph name unique in the context of that dataset.
- [C:](http://asn.desire2learn.com/resources/S2731590) Understands how a namespace, informally used in the RDF context for a namespace URI or RDF vocabulary, fundamentally differs from the namespace of data attributes and functions (methods) defined for an object-oriented class.
- [B:](http://asn.desire2learn.com/resources/S2690012) Related data models
- [C:](http://asn.desire2learn.com/resources/S2731554) Grasps essential differences between schemas for syntactic validation (e.g., XML) and for inferencing (RDF Schema).
- [C:](http://asn.desire2learn.com/resources/S2731555) Differentiates hierarchical document models (e.g., XML) and graph models (RDF).

Propose file change

Add competency related to ShEx

Shape Expressions language is not covered sufficiently in the current version, therefore
LD4PE Competency Index

Who can use it?

- **Students**: help choose courses that cover what you want to learn.
- **Instructors**: design a course, syllabus, homework, quizzes, exams.
- **Employers**: write a job description.
- **Self-learners**: explore technologies and methods related to Linked Data.
Learning Linked Data

Learning Linked Data: Introducing a Competency Framework Illuminated by Mapped Learning Resources

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LD4PE (Linked Data for Professional Educators) Project Team

Questions?

http://explore.dublincore.net/