

# Building Learning Modules around the *Competency Index for Linked Data*

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## Abstract

The Linked Data for Professional Education (LD4PE) project has developed a *Competency Index for Linked Data* that allows the construction of learning trajectories for Linked Data education. The *Competency Index* defines a set of assertions (within 30 groups under six categories) of the knowledge, skills, and habits of mind required for professional practice in the area of Linked Data. Educational resources have been collected and indexed with the competencies; all are free for use (available at: <http://explore.dublincore.net/>). How can instructors, trainers, and learners use the competencies to build the learning outcomes in their curricula or course syllabi? How could they share and reuse the developed curricula and the instructional resources in teaching? This session aims to bring together educators and learners in an interactive venue for using the LD4PE tools to develop learning modules for their future audiences around the competencies. The outcome will be available to the broader community through the LD4PE website.

**Keywords:** Linked Data education; learning outcomes; competency; curriculum development

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## 1 Description

As one of the underpinnings of the open data, open science, and data-driven research and learning, Linked Data is gaining momentum. While standards and technologies have been developed for wider application of Linked Data, iSchools are developing courses and instructional resources to respond to this trend. Questions often arise, however, when iSchool instructors and information professionals try to prepare educational and/or training materials:

1. What competencies are expected in Linked Data related skills and knowledge?
2. How can these competencies be built into curricula or course syllabi to assess learning outcomes?
3. Is there any trustable learning resource for Linked Data available in the open Web?
4. What pedagogy and best practices have been used in teaching or learning Linked Data to build the competencies?

Over the past two years, the LD4PE project [funded by the Institute of Museum and Library Services (IMLS, a US federal agency)] brought together experts from the fields of information science, computer engineering, Semantic Web technologies, and education to develop a competency index of the knowledge, skills, and habits of mind required for professional practice in Linked Data. The first version of the *Competency Index for Linked Data* has been released, which defines a set of assertions within 30 groups

under six categories. Educational resources have been collected and indexed with the competencies; all are free for use (available at: <http://explore.dublincore.net/>). This Session for Interaction and Engagement aims to engage participants to take any part of the competencies and build sample learning-modules to reach measurable learning outcomes. It is also the goal that the participants can share and reuse the developed learning modules in larger curricula using the tools developed by the LD4PE project. The outcomes from this session will be available to the broader community through the LD4PE website.

## 2 Purpose and Intended Audience

The purpose of this session is to introduce the participants to, and seek feedback on, the approach of building learning modules based on the *Competency Index for Linked Data*. Through the session, we anticipate a lasting effect to encourage and entice the participants to use the Linked Data educational resources in their teaching and training, as well as to contribute new resources and best practices to the LD4PE collection for wider sharing and dissemination through the tools provided by the LD4PE project.

The LD4PE project targets a wide range of audiences to benefit from the tools and resources created from this project: teachers and trainers engaged in formal education and in continuing professional development; employers of professionals engaged in Linked Data activities; and content providers of Linked Data educational resources (such as curricula, tutorials, webinars and best practice recipes). This session will be an opportunity for all who are interested in Linked Data. Anyone can participate, no matter how much Linked Data knowledge one has.

## 3 Proposed Activities

The session will include these major components:

### 3.1 Presentation (15 minutes)

The session will begin with a brief presentation of the *Competency Index for Linked Data*, the associated tools, and the LD4PE website created for organizing and exposing learning resources associated with that index.

### 3.2 Discussion and Q&A about the *Competency Index for Linked Data* (10 minutes)

The handouts of the established *Competency Index for Linked Data* will be provided. Each participant will have a quick look at the competencies and mark the competencies he/she feels confident about. Then the Q&A will be open to gather questions regarding the competencies. Discussions will be welcome around the issues such as the arrangement or grouping, the indication of core competencies, additional competencies, etc.

### 3.3 Breakout session A. Building learning modules (30 minutes)

Participants will form small groups to begin developing modules focused on specific areas of Linked Data. They will navigate among the open source learning materials already aligned with the competencies by LD4PE team, select the appropriate ones, write down the issues and tips, and form learning modules from them. Each learning module will include the learning outcomes, resources recommended (in order), additional resources available for further learning, and related competencies. Q&A and discussions can occur during the session, based on need.

### 3.4 Breakout session B. Making Saved Set (15 minutes)

The participants will be introduced to the Saved Set function, which allows a user to save the selected learning resources into one's own Saved Set, while exploring how others compiled their sets. Q&A and

discussions can occur during the session, based on need. These Saved Sets may be made public for others to use through the LD4PE website after the workshop.

### 3.5 Breakout session C. Summarizing and Reporting (15 minutes)

The participants will summarize the major points regarding: (1) the competency-based learning approach; (2) the coverage of the *Competency Index for Linked Data*; and (3) ideas of teaching and learning Linked Data using these resources and tools provided by LD4PE. Each group is expected to give one short report.

### 3.6 Conclusions and Wrap-up. (5 minutes)

The organizers/presenters will give summary and conclusion remarks. The final outcomes will be incorporated into a written report to provide to the LD4PE project team.

## 4 Relevance to the Conference/Significance to the Field

Demand for professional expertise in the deployment and use of Linked Data is already being diffused from leading cultural memory institutions and starting to color professional practice. The rapid adoption of Linked Data technologies challenges practicing professionals, teachers, trainers, as well as students, and requires them to keep up with this new trend by updating competencies, knowledge, and skills. As the iConference is the leading conference of the data and information science educational institutions and organizations, this session brings in a relevant topic and unique opportunities to iSchool faculty and students to join the mainstreams of Linked Data and the Semantic Web.

The materials and tools to be used to engage the participants in this session are developed by an interdisciplinary team composed of iSchool educators from University of Washington (United States), Kent State University (United States), and Sungkyunkwan University (South Korea), with partners from the Dublin Core Metadata Initiative (DCMI), OCLC, Elsevier, Synaptica, and Access Innovations. Its quality and the developed resources and tools will greatly enhance the knowledge and skills required for professional practice of Linked Data among the educators, trainers, and learners.

## 5 Event Length

This event will last approximately 90 minutes

## 6 References

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