

Improving the Chance to Learn Open Education Resources Using a Topic Maps-Based Learning Portal

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1. Context

The open education resources (OER) are now widely accepted. Particularly for students of the teacher training university, OERs are candidates of their future teaching materials as well as for themselves. However, to adopt OER in the lecture course, learners have to identify proper and trustworthy materials that are appropriate to the course. Therefore, the OERs selected by facilitators are required to be precisely linked with the basic course materials.

2. Objective

In this case study, Topic Maps (ISO/IEC JTC1/SC34) ontology enables the individual materials of OERs accessible directly at the subjects in the learning portal. Further, the OERs are made findable from their subject and from the type of materials, such as the video, simulation, etc.

3. Method

Learning resources were categorized with the types of expressions, and were associated with the subject topics. We consider this search design as a “subject-centric linked data” approach. The individual OER related with specific subject automatically appears together with other resources. Single OER material can be related to more than one subject, and is connected with lots of materials through these subjects. This subject-centric design improves reusability of resources, while it increases the learner’s chance to encounter the related OERs.

4. Results

Materials of OERs associated are from MIT OCW, PhET interactive simulations, WAO Science Experiment Navi, etc. In the 2013 spring semester, 166 students participated in three lectures on science education. Within 3393 material requests, 14.3% were for the OER materials. A rising tendency of this rate from 2011 to 2013 was found. Among OER requests in 2013, 61% were for the Japanese WAO, which presents numerous simple experiments reusable in the primary and secondary education.

5. Conclusion

Effective reuse of OER is expected through the subject-oriented topic map system. For a sustainable provision of OER materials, URLs of materials have to be always updated.