

Promoting the Creation, Share and Use of OERs through Open Repositories and Social Networks

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1. Introduction

Open educational resources have been the promise of providing people with high quality learning resources. Initiatives such as MIT OpenCourseWare, MERLOT and others have shown the real possibilities of creating and sharing knowledge through Internet. We indeed live in an age of content abundance, and content can be considered as infrastructure for building adaptive and personalized learning paths, promoting both formal and informal learning. Nevertheless, although most educational institutions are adopting a more open approach, publishing huge amounts of open educational resources, the reality is that these resources are barely used in other educational contexts. This paradox can be partly explained by the difficulties in adapting such resources to local educational contexts. Furthermore, if we want our learners to use and take advantage of learning object repositories, we need to provide them with additional services than just browsing and searching for resources. Social networks can be a first step towards creating an open social community of learning around a topic or a subject.

In this paper we discuss and analyze the process of using a learning object repository and building a social network on the top of it, including aspects related to open source technologies, promoting the use of the repository by means of social networks and helping learners to develop their own learning paths.

2. Learning object repositories

Institutional repositories are becoming a basic piece of the infrastructure of any educational institution (Lynch, 2003). According to Heery and Anderson (2005), repositories are differentiated from other digital collections because the content is deposited in the repository together with its metadata; such content is also accessible through a basic set of services (i.e. put, get, search, etc.). Depending on the specific needs of the community using the repository, this will provide additional tailored services, but all repositories should at least provide two basic ones: content preservation and content reusing (Akeroyd, 2005). In particular, learning object repositories (as a specific case of institutional repositories) become a key element for supporting a user centered learning process, combining the services offered by digital libraries with the flexibility of directly providing contents through a simple interface (Conway, 2008). Nevertheless, the most important requirement to ensure a successful repository states that it should originate from the genuine need of a community (McNaught, 2006). Therefore, any institutional repository will be only half successful if does not attract, generate and support a community of learners.

Learning in a virtual environment involves the use of a wide variety of learning objects, not only books, but including examples and exercises, simulations, multimedia documents, etc., showing a wider degree of granularity. These elements must be not

only stored but also fully integrated into the learning process, helping learners to better contextualize these small chunks of knowledge. Browsing and searching for these resources should be a truly learning experience in itself. Therefore, learning object repositories should be designed taken into account not only the institutional requirements, but also the needs of the final users, teachers and especially learners. This can be done by adding web 2.0 services to traditional repositories and making them to become more open.

Creating a learning object repository is not a simple task but it must be accomplished from a bottom-up approach (i.e. a group of teachers) with a minimum institutional support (mostly from the IT support office), although there are several preliminary questions that must be addressed (Margaryan and Littlejohn, 2009). On the practical side, there exist several open source software solutions for setting up a repository; DSpace¹ is one of the most popular ones. DSpace was designed in 2002 by MIT Libraries in collaboration with the Hewlett-Packard Company. Its focus in the submission, storage, access and preservation of research material in digital format makes it well suited to the needs of an institutional or thematic repository, ranging from a few hundred to hundreds of thousands of items.

3. Adding social networks

But once the repository is online, it needs to become the center of a community of learners. Indeed, the success of many Web 2.0 communities such as YouTube or flickr lies in that they were able to attract a critical mass of users that either provide contents or add value to the existing contents in the site by commenting, rating and bookmarking. If creating a learning object repository from scratch is not possible, another possibility is using an existing one, taking advantage of its reputation, critical mass and other relevant factors (McNaught, 2006). In this sense MERLOT² can be mentioned as an example of a LOR that has succeeded in attracting an active user community, and nowadays MERLOT offers the possibility to navigate the resources through the profiles of registered users. MERLOT has several mechanisms to award recognition to active users that provide high-quality contributions. This helps to create a community around the repository.

New learning theories such as connectivism (Siemens, 2005) establish that learning is produced during the process of establishing new relationships between contents and concepts, rather than in the already acquired knowledge. Learning object repositories are important elements in the network built by the learner during his or her learning process, as they store not only the learning resources but also all the details of the learning experience itself with respect to the learner. Learning occurs anytime, anywhere, learners do not need to go to a specific place to have a learning experience, on the contrary, they should be able to learn whatever, whenever, wherever. In this sense, social networks provide a basic support for this practice, but not contents. Learners do not need to “know” everything; it is the ability to create, analyze and share connections between resources that generates knowledge. In this sense, learning is more than just content; this is just the infrastructure for the learning process (Wiley, 2001).

¹ <http://www.dspace.org/>

² <http://www.merlot.org/merlot/index.htm>

Therefore, in order to promote the reuse of open educational resources, we propose to bridge both worlds. From the one side, by means of institutional repositories built on a top-down approach, more aimed towards preservation rather than promoting reuse and, from the other side, communities of practice and learning in the shape of social networks. We can combine the best of both worlds: reliable and permanent handles for well-described resources in learning object repositories (where the contents are) with dynamic services available through social networks and web 2.0 tools (where the learners are). So, once a learner finds (and uses) a learning resource, whatever the source is, he or she should be able to perform the following actions on it:

- Comment: in order to promote a continuous improvement of resources, learners should be able to make comments, place questions, correct small mistakes and so, using communication spaces.
- Rate: using a Likert-type scale, stars (from 0 to 5 or 10) or any other mechanism, the learner should be able to express his or her valuation of the resource.
- Favorite: for those resources that really capture learners' interest, it should be possible to mark them as a very valuable resource.
- Tag: learners should be able to describe learning resources using their own tags.
- Share: all of the previous actions should be shared using learner's usual communication channels, such as twitter, facebook, delicious and so.
- Subscription: on the other hand, learners should be aware of all interactions occurring around a specific resource.

On the other hand, from an institutional perspective, all these interactions can be stored and analyzed in order to provide a better understand of the learning process, as well as providing useful information to the searching engine, improving searching and browsing results. Analyzing comments may also help to detect problems with certain resources and correct them. Finally, analyzing tags can be also a useful source of information for improving metadata describing educational resources.

In order to implement the services aforementioned, it is important to separate the storing capabilities of the learning object repository from those more related to searching and browsing, adding to them the services that will provide learners with a better personalized management of learning resources. This separation can be implemented through the use of an API (Application Programming Interface) which services can be accessed through a more user friendly module. One possibility is using a content management system such as Drupal³, for example, as described in Coombs (2009).

4. Summary

Learning object repositories are nowadays a basic piece of any virtual learning environment, but learners still need to go to the repository in order to find learning resources. Furthermore, once a given resource is found, learners are only left with the possibility of consuming it, but nothing else. In order to integrate the resource into the learner's learning process, a collection of basic services should be built on top on it, with the aim of creating a true community (even at a small scale) around such resource, making of it a valuable asset.

³ <http://drupal.org/>

Current and future research in this topic should include the design of new user interfaces for searching and browsing learning resources (Minguillón, 2009). The use of semantic web technologies for providing personalized services is also an interesting issue, including both accessibility and mobility aspects, thus promoting a true open access to learning resources anytime, anywhere.

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