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# Repurposing resources as open content: studying the experiences of new providers

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## Abstract

*Web 2.0 tools and social software are changing the way in which formal and informal learners expect to work with learning resources. In response, educational providers may open up access to existing courses by providing them as free to use Open Educational Resources (OERs). The OpenLearn initiative of The Open University established a "LearningSpace" for learners to access OERs from the university and built up methods and processes for transforming material. OpenLearn also established a "LabSpace" to allow others to make changes to released content, or to provide new examples. A parallel project, POCKET, works with partner universities to transfer the model of production from OpenLearn and provide content from those universities for open use. In this paper we outline the issues that we have identified in our production process and the intended way to transfer this process to our partner institutions in POCKET and then to others.*

## 1. Introduction

The Web 2.0 environment has achieved a growing momentum in innovative uses that enable individual contributions to be shared on a large scale. Such "social software" has now started to be incorporated into the way that educational institutions expect to work with their own students. The JISC LXP Student Experiences of Technology project [1] examined undergraduate learners' behaviour with respect to their use of technology. It found, in each of the disciplines studied, that learners use public Websites and services when seeking to meet educational needs in preference to any facilities provided by their host institution. The learners demonstrated highly effective independent learning strategies. Cross-over behaviour from students learning with institutional learning environments and external systems needs to be supported so that the use of social environments is not in conflict with the

expectations of institutional providers. A challenging area is in the provision of educational content and planned activities. If these are seen as protected and controlled they cannot be incorporated easily into other environments and exclude the potentially large numbers of informal learners without connection to the institution. In a review of the impact of social software on learning [2] Open Educational Resources (OERs) are identified as a possible response:

"It is important here to note the critical role of Open Content licenses like the Creative Commons and Open Educational Resources (OERs) in enabling the emerging borderless learning networks. As we've seen, openness is not simply a 'nice to have' but essential feature that allows networks to emerge..." [2:p21]

Open Educational Resources have become established to a large extent through the operation of the OpenCourseWare movement [3], however their approach is based on the view of providing free access to the content in isolation. More recent developments have been addressing ways in which the content can be accessed by learners, and co-developed by the community, for example the Connexions project (<http://cnx.org>). The OpenLearn initiative is part of this movement and seeks to provide content and also a space to enable others to alter that content and share new content. This was termed the "LabSpace" and provides access to more experimental tools such as video-conferencing and knowledge mapping.

While the learner oriented content has been successful in providing over 250 learning units and attracting approximately 1 million unique visitors in the first year of operation, take up by other educators has been slower with relatively low numbers of new or changed courses appearing in the LabSpace. The POCKET project (Project on Open Content for Knowledge Exposition and Teaching) seeks to revisit the way in which existing institutions can interact with the LabSpace and to establish a core community of institutions that are seeking to transfer content into OERs. In the following sections we review what the

process is and the methods that we intend to use to help others become involved.

## 2. OpenLearn content format

The OpenLearn process for taking content from existing Open University courses involves pedagogic, copyright and editing stages. These are outlined in the next section and have been described in more detail [4] in terms of responsibility and workflow. The end result of the reworking process is an XML file that describes the content together with the media needed within the course. The OpenLearn XML schema is a slight variant of that adopted by The Open University and allows a pedagogic view of the content expressed in terms of activity (see figure 1). Using XML for the content provides a "gold standard" in terms of expressing the intent of the authors while retaining great flexibility to reformat the content and open up connections to other services and so enabling interaction through other environments, including social software sites and aggregators that support such sites.

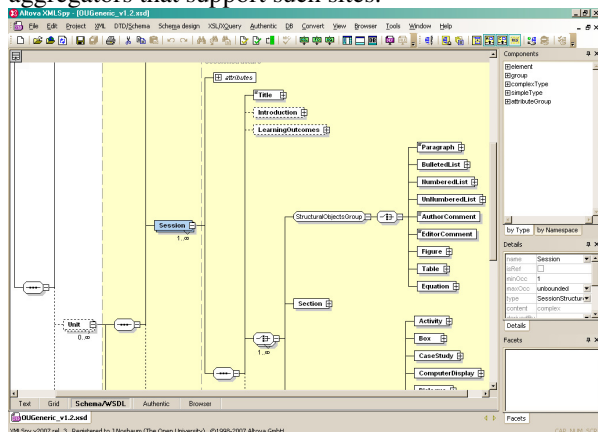


Figure 1: OpenLearn XML Schema (partial view)

The XML file can be transformed (using XSLT) to alternative representations. At the launch of OpenLearn two such transformations were available. The first was to transfer the content into the Moodle learning environment (<http://moodle.org>) and the other into HTML. The Moodle content was then hosted in the "LearningSpace" for use by learners inside the learning environment. The XML together with the translation into HTML were then available in the LabSpace, which is a separate Moodle environment, to allow users to download and make changes before uploading the changed version to be rendered as a new updated version of the course on the LabSpace. This model has many similarities to the open source software with the Moodle version considered as the executable that most

users will require and the XML files the equivalent of the source code for developers.

A finding in the early stages of the initiative was that this was not enough, we had feedback from those who were interested in reworking course materials that they were not prepared to start working with XML files. To address these concerns OpenLearn has developed further transformations to provide additional formats available for download: Moodle, printable HTML, IMS Content Package, zipped collections of resources, IMS Common Cartridge and RSS feeds. The ability to provide these additional formats shows the flexibility of starting with content in XML and also offers those who do not wish to use XML access to the content. Reuse and editing of the content has now increased with notable success in two areas, firstly transfer of content to other environments through RSS [5] and secondly through the introduction of in situ editing of Moodle courses on the LabSpace by allowing users editing permission on request. However, using any format other than XML means the new content cannot be transformed and pedagogic structures are not maintained. XML therefore remains a worthwhile target for new content and it is important to explore ways in which its use can be encouraged. The POCKET project has brought together people from four different Universities in the United Kingdom who are prepared to commit effort in producing newly transformed courses from across the Universities into OpenLearn XML.

POCKET, the Project on Open Content for Knowledge Exposition and Teaching, is led by the University of Derby and partnered by The Open University, the University of Exeter and the University of Bolton. The POCKET project is designed to leverage what has already been invested in OpenLearn and extend Open Content activity to other universities. It plans to adopt and adapt the systems developed in OpenLearn and create substantial additional amounts of quality assured Open Content learning resources at higher education level. POCKET aims to then extend its methods and findings to other institutions.

The project offers OpenLearn a fresh chance to examine the issues and build on the experience of its first year of operation to provide greater external support for the production of XML. Reflection during the initial stages has identified directions that the project will take to:

- Support the pedagogic analysis of content for open learning through workshops and guides
- Recommend XML tools to transform content into OpenLearn

- Pilot the approach with committed teams in the partner universities
- Roll out the methods and tools to a wider community supported in a second phase.
- Evaluate and reflect on the process through stakeholder consultation and reporting across the project.

Overall the project expects to develop between 50 and 120 distinct units which is equivalent to between 250 and 600 hours of study.

### **3. Methods and processes for transforming material from distance learning courses into a form suitable for open use**

An initial task within POCKET is to review internal processes that have enabled OpenLearn to successfully produce its own content and create a “Development Kit” to help others do the same. The OpenLearn project set itself ambitious targets to publish 13,500 study hours in the form of distance learning OERs in a two year period between April 2006 and April 2008. In order to meet these targets, methods and processes were devised, revised and updated. Those working within this project built up a wealth of experience over a very short time. Working at a fast pace can mean that useful legacy material can be captured in different places. Much of the experience is still in the heads of the individuals involved in the project and it is important to assess how much of it is captured to be easily transferred to follow on projects.

The first stage of the review is to bring together candidate material for the Development Kit, which includes examples of all of the tools, processes and procedures involved. The Development Kit contains:

- Guides for usage of the various community building tools (FlashMeeting, Compendium, Cohere, FlashVlog, Learning Journal, Forums).
- Learning Design materials to support the use of structured approaches to designing online materials [6].
- Guidelines on how to transform distance-learning material into OERs
- Forms which indicate stages in the process as material move through the production process (e.g. pro formas to propose content, initial review, final review).
- Workflow charts and guides which indicate when processes and procedures take place [5]
- Papers which explain policy decisions (e.g. [7] and [8]) and discuss the process in more detail [9].
- Guidance on how to edit using XML.

Some of this information has been available publicly through the OpenLearn site while in other

cases they have been designed for internal use. Providing the Development Kit offers the chance to record tacit knowledge and disseminate and evaluate in use.

### **4. What needs to be considered when transforming distance learning materials into OERs**

The first stage of transformation is to determine whether the material to be transformed is deemed suitable for transfer into an OER. A number of models of transformation have been proposed by Lane [7, 8]. The majority of the OERs in OpenLearn, however, are transformed under what Lane terms the ‘Integrity model’, essentially all of the material in the subsequent OER is recognisably similar to the original material.

Connolly et al. [4] discuss the process of transformation under the ‘Integrity model’ using a flowchart

(<http://kn.open.ac.uk/public/document.cfm?docid=997>

1). An overview of the key stages is listed below and serves as a reminder that the transformation process involves much more than the use of XML. Key stages in the transformation process:

1. Identify material for transformation from a Central Academic Unit and decide on the appropriate topic area within OpenLearn.
2. Central Academic Unit complete a pro forma
3. Electronic copies of the original materials are sourced
- 4.a Copyright issues with third party material are considered [8]
- 4.b Ownership of the material is considered
5. Usage of the proposed material in Professional Development courses is considered
6. The material then undergoes an initial review by an OpenLearn Academic.
7. After the initial review has drawn up a specification for how the material should be transformed, the materials are handed over to the media sub-team for XML tagging, editing and conversion into an OER.
8. A final review of the pre-release OER is undertaken by the OpenLearn academic and Faculty academics. The OER is checked against the original material and the specification on the initial review form.
9. When the final review is complete the media sub team publishes the OER.

These more people-oriented aspects have been recognized in the POCKET project by establishing the staff-development aspect of the work as an identified aim alongside the production aspects.

## 5. Adapting OpenLearn units

As indicated in the introduction, relatively low numbers of new or changed courses have appeared in the LabSpace. This is the case even though a number of workshops have been held to describe how to download, change and re-upload OpenLearn OERs. Workshop attendees liked the idea of being able to adapt and change distance learning OERs though often they had not had time to look at OpenLearn units in sufficient detail to be able to decide what units would be of interest. Study skills units; however, seemed to be a firm favourite and participants would like to be able to use and adapt podcasts with colleagues in the LabSpace. Participants suggested that they would work with colleagues both inside and outside The Open University. A common theme which arose, however, at the end of each workshop was the need for an OER which would actually explain how to both download, remix and upload OpenLearn OERs and use the OpenLearn XML Schema. The workshop participants are evidently keen to 'play' with OpenLearn OERs but unsure how they would accomplish the upload, change and re-upload function without an OER explaining how to actually do it.

An example of converting material for OpenLearn into XML comes from The Open University Library. This work was within The Open University but outside the core OpenLearn team. Original material developed from scratch using Microsoft Word was converted into XML by a librarian. The content was fairly straightforward to convert (mainly text and hyper links) and the librarian already had experience of HTML though not XML. It was necessary, however, for an OpenLearn editor to give some basic training, be on call for support and revise the submitted material. Indeed it had been the intention that the academics in OpenLearn would make necessary changes to the distance learning materials in XML. However there was not enough capacity within the OpenLearn team to train and support the academics to undertake this work. This again suggests the need for self-supporting material, such as an OpenLearn OER, which explains how to prepare material in XML for OpenLearn.

Further issues have also been identified by reviewing the experience with conversion of distance learning course materials into OpenLearn OERs. Suggested criteria for judging the suitability of course material for OER delivery are discussed by Wilson [9]. In addition consultation with stakeholders has identified both the interest in using OERs and uncertainty in how a variety of institutions will implement them and incorporate them into their

offerings [10] and the opportunities offered to under supported sectors of society, such as the older learner [11].

## 6. Conclusion

Allison Littlejohn [12] writing in 2003 introduced a book on the reuse of educational material by identifying seven distinct issues in the reuse of online educational resources. The seventh issue that she listed was *Is global sharing of resources a possibility?* Littlejohn stated that

“The vision of a learning object economy implies the existence of distributed, digital repositories serving communities of users across multiple institutions, educational sectors and nations.” [12:p5].

The existence of globally oriented open content repositories such as OpenLearn, MIT OCW, and others mean that such repositories are now available and furthermore the wide scale adoption of licences such as Creative Commons (<http://creativecommons.org/>) have reduced the impact of copyright which was also seen as a potential barrier. However, many other issues remain and the experience in OpenLearn is that moving from local solutions to one that can be adopted by the wider sector is not straightforward for reasons as much to do with changes in attitude and recognition of the potential as it is with technology. This brings us back to the first of Littlejohn's seven issues; *How can digital resources be used to support learning?* where she identifies that:

“Teachers would also require access to electronic tools, hardware and software, that would allow these 'activity structures' to be implemented across a range of different educational environments.” [12:p4].

The POCKET project attempts to draw on our existing experience to build and share the collection of tools and guidance to make the vision of OpenLearn as a catalyst for other providers to make educational content freely available either as institutions or individuals. The diminishing divide between formal and informal learning and between personal and institutional environments implies that there is now even greater incentive to take part in the open provision of learning materials than in 2001 when MIT established their OCW portal as “a world wide web of knowledge that raises the quality of learning” [3].

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