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From print to Web: issues in re-purposing for an Open Resources Repository

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Abstract

The Open Educational Resources (OER) movement has gained rapid support for its goals of universal access to education. The UK Open University's contribution is OpenLearn, a project funded by the William and Flora Hewlett Foundation which, over the next two years, aims to re-purpose several thousand study-hours of existing learning materials for online delivery.

The UK Open University has gained a hard-won reputation for the quality of its learning materials and integrated Supported Open Learning model. However, these materials are, as a rule, developed within the framework of long courses that typically require between 300 and 600 hours of study. Furthermore, many of the courses are 'interdisciplinary' in that they are developed by teams that include members associated with different faculties. The courses are, therefore, generally structured in terms of themes that run throughout the course and may span a variety of academic disciplines. Also, despite the breadth of knowledge brought into play when a course is developed, the courses normally reflect pedagogical and disciplinary assumptions and views that are prevalent in the UK.

Based on the authors' experience of the OpenLearn project, this paper explores some of the key issues encountered when re-purposing resources. These issues include how to provide material not supported by tutorial guidance, the suitability of media components for conversion and the inter-relationship between the multimedia components. The paper will also briefly discuss the requirements for evaluation of the re-purposing process. The issues raised are potentially of relevance to other re-purposing initiatives.

Keywords: open education; re-purposing; eLearning

1. Introduction

The Open Educational Resources (OER) movement has gained rapid support for its goals of universal access to education (Smith & Casserly, 2006). The UK Open University's (UKOU) contribution is OpenLearn, a project funded by the William and Flora Hewlett Foundation which aims to re-purpose several thousand study-hours of existing learning materials for online delivery over the next two years. This ambitious goal, however, poses a variety of practical challenges involving Intellectual Property Rights and Copyrights (IPR/CR) issues, technical questions and pedagogical concerns, all of which must be addressed within the constraints and possibilities afforded by the institutional context that surrounds the project.

One of the attractions of UKOU materials is their diversity of content and media, which includes print, audio-visual, software, interactive CDs and DVDs. However, in the context of re-purposing, this richness creates its own challenges for academics, production processes and delivery systems. At the time of writing (November 2006), the project team have, in what must be acknowledged as a remarkable achievement, delivered on target the first 900 study-hours in the LearningSpace (<http://openlearn.open.ac.uk>), the project site aimed primarily at learners. Together with the LabSpace (<http://labspace.open.ac.uk>), the site aimed primarily

at educators, these twin sites constitute a unique addition to the various open educational repositories currently available. Both sites are hosted within a new VLE (Moodle), currently under development for deployment across the UKOU.

There are many parallels between re-purposing as discussed here and re-use in the sense of learning objects. However, re-purposing within OpenLearn bears a closer similarity to re-engineering for another purpose, rather than creation within a learning object paradigm (Wiley, 2000). This article provides an overview of these re-engineering activities within the project context, with particular focus on questions that require academic, pedagogic and, often, subject-based consideration. As such, it constitutes a preliminary report on a complex process that merits further investigation of its impact on an institution that has gained a hard-won reputation for the quality of its learning materials and innovative Supported Open Learning model.

2. Background

Teaching at the UKOU is a team effort that consists of two major inter-related stages referred to as *course production* and *course presentation*. Course production is carried out centrally by Course Teams (CTs), groups of (predominantly) campus-based staff that include professionals from various areas clustered around a core of academic authors. CTs exploit the institutional structure in that this is arranged to provide expert input in various tasks required for course production (in addition to academic and pedagogical expertise, graphics design, software development and legal advice and support in respect to copyrights issues, for example), which is guided by broader curriculum considerations and, more recently, a measure of market intelligence. Course presentation, on the other hand, is monitored and supported by central academic staff, but direct student support is provided primarily by part-time Associate Lecturers (ALs), who offer tailor-made advice to small groups of learners (typically 15-25). The combination of multimedia materials produced centrally with the support provided by the network that includes regionally-managed provisions comprises the institution's Supported Open Learning model. The roles of CTs and ALs differ significantly, but the split of functions between these two groups of teachers within a broader student-support network has been pivotal to the logistics required for the production and presentation of courses to often substantial numbers of students.

As part of a process that supported the eventual institutionalisation of the CT, new administrative layers have been progressively introduced to manage the growing concerns with costs and, more recently, the University's general orientation towards providing complete programmes of study leading to named qualifications (that is, certificates and degrees qualified in respect to an area of knowledge or professional remit). This move, in itself, has implied the need for a significant change of culture within the organisation, a process still underway, as courses now integrate broader Programmes which set out specific curricular requirements that courses, grouped together, must meet, as opposed to what had been a course-centred mode of operation. The Institution now appears to be re-thinking and re-defining itself within a wider context in which it is located on an assumedly equal, competitive footing with more 'conventional' universities. The wider adoption of business-oriented thinking and accompanying rhetoric within the institution, however, contributes to bring to the fore previously veiled tensions amongst representatives of different disciplines, professions and particular viewpoints.

Team teaching is not, of course, an idiosyncrasy of distance education, but it has grown into the predominant style of developing curriculum and creating learning resources in distance education institutions. Indeed, according to Chung (2001), the structure of these organisations – and the UKOU is here only one example amongst others – tends to reflect a commonly perceived need to endow course development with a more widely-accepted notion of 'professionalism'. At the UKOU, the current model of the course production process is

described, in its various stages, processes and personnel required, in an online document available internally to staff (OU, *The Course Management Guide*), which outlines the relationships amongst the various areas of the university responsible for the creation and delivery of a course (currently under review). Interestingly, non-academic services are no longer construed as subsidiary to the development process, even though this is assumedly based on pedagogical and academic considerations. A focus on assumed 'market'-related concerns and tighter budgetary control, traditionally not major academic affairs, compels a radically different reality that opens up an avenue for much controversy and disagreement. CTs can, therefore, be viewed as arenas that highlight administrative, disciplinary and professional divides; from this perspective they are sites of debate, contestation and conflict (e.g. Ferreira, 2006).

The OpenLearn initiative is, therefore, located in a setting that is currently undergoing profound changes which mirror broader transformations in the panorama of UK Higher Education and Research. As such, the project itself constitutes, from a certain perspective, a field for experimentation and trial of new processes and tools that may be subsequently adopted more broadly across the institution. From a limited perspective, our challenge is that of re-purposing materials predominantly developed for print, albeit within the framework of larger multimedia courses, into self-standing learning resources presented on the Web. In itself, this is by no means a straightforward enterprise, for the various reasons we discuss in more detail below (and possibly others). Crucial to this process are the many aspects of the institutional location of the project and the internal processes supporting the work. The broader goals of the project, those of contributing to a world-wide community committed to widening participation in education (OCI, 2005), provide a host of motivations (c.f. McAndrew, 2006) as well as a rationale for the re-purposing work. The project as a whole, however, faces a challenge not unknown to visionary enterprises: that of negotiating more localised issues, particularly those of a political nature, which can potentially have a considerable impact on the work in very tangible, practical ways.

3. Issues in re-purposing

What needs to be done, when and by whom: Boundaries

As discussed in more detail below, excerpts of material available to OpenLearn may include resources that are spread across several publications, media, and copyrights owners. Re-purposing, therefore, requires a combination of processes of de-contextualisation and re-contextualisation that require (at least) academic, technical and rights input, in a parallel with the usual CT needs. Interestingly, the current OpenLearn structure does not mirror the academic-led arrangement of 'traditional' OU CTs. There is a horizontal structure that splits project members into different area teams (e.g. academic, rights, finance). This implies different decision-making forums, which can be potentially counter-productive without well-defined roles, responsibilities and, crucially, communication and coordination across the team as a whole.

Indeed, roles and responsibilities have so far been much different from those associated with the various categories of staff when part of a course development in a CT. Prior to the official launch of the sites, practical issues were created, in part, by the need to deliver the first target within a very tight timescale whilst members of staff joined midway through the process. This has meant that much of the work supporting the re-purposing of the currently available 900 study-hours, including negotiating rights, publishing versions of material on the test site whilst designing the site and carrying out academic reviews of the Units prior to publication on the site, was carried out in parallel. This work included also the creation, on-the-fly, of mechanisms to coordinate the work of the team (e.g. communication amongst

areas), steps required for quality assessment (e.g. final review by Academic Units) and tools for registering the process and coordinating its flow (e.g. review and sign-off forms).

Existing intelligence from a previous institutional project (CoUrse Reuse and Versioning, CURVE – public site available at <http://kn.open.ac.uk/public/index.cfm?wpid=5391>) highlighted the complexities involved, including an outline of the procedures required for obtaining internal approval for the reuse of materials, and this has assumedly informed preliminary work that was carried out in a preceding stage of the initiative. *A major lesson we have learned is not to underestimate this complexity.* The initial workflow between team areas was insufficiently flexible to accommodate the plethora of issues that would arise in connection with: IPR/CR; technical constraints imposed by a new VLE; and, crucially, the imperative for academic intelligence (in terms of both eLearning pedagogy and subject-specific knowledge).

A preliminary examination of the Final Academic Review forms generated prior to launch supports the notion that the original workflow does not optimise either the efficacy or the efficiency of the overall re-purposing work. A considerable number of observations made concerns editorial details, casting doubt on how useful to re-purposing is the parallel drawn between the ‘handover’ of the usual UKOU course development and the inputting of Faculty offers onto the OpenLearn system. The ‘handover’ is an almost symbolic stage in course development as it marks the moment when an author delivers the final academic version of their textual contribution to the course editor, who then coordinates the integration of input from the various parties involved in completing the material. Academic input following this stage includes, for example, continuing the dialogue with technical colleagues involved in designing an interactive DVD. A conflation between ‘production’ understood broadly as the whole process of creating a course (from its initial conceptual through to final publishing) and ‘production’ as simply the final publishing stage seems to be implied in the original OpenLearn process.

A production structure based on what can only be described as an over-optimistic view of re-purposing has created a unique context in which professional boundaries have, at least so far, had to be negotiated on a daily basis. Interestingly, the specifications of roles for the various categories of staff employed in the project reflect a myriad of possible views on the nature of the project itself. To a large extent, the different styles (and levels of detail) in which job specifications are articulated reflect differences of culture within the organisation (formally, OpenLearn members are associated with different Units across the institution, even as most of the team is physically assembled in a single, open-plan space). For example, job details for academic posts are much more general and, therefore, flexible, than those for support appointments (e.g. media assistants), whose job description is fairly precise. Indeed, viewed within a single document, the set of job specifications for the various staff categories (OpenLearn 2006) appears fraught with inconsistencies. It is, therefore, not surprising that a particularly difficult conundrum for the team is that of establishing a shared, ‘baseline’ view of the project and, consequently, an informed judgement of the value of their individual contributions. Despite CURVE’s (2002) guidelines concerning the creation of Websites from materials originally developed for print – not simply a matter of ‘copying [content] across’ from print to a Web page – the original workflow chart suggests that the re-purposing process may have been envisaged merely as a publishing enterprise, that is, a matter of treating text editorially, assuming that the change of media would not raise questions of a pedagogic, academic nature and, crucially, would not be detrimental to the high quality of the original materials.

We discuss issues related to quality in more detail below, but we would like to remark at this point that we identify a distinction between the notion of sharing ‘learning materials’ and that of sharing ‘self-standing eLearning resources’. Indeed, preliminary reports on user testing have brought to the fore the issue of low level of interactivity of the Units used in the testing,

a finding that is entirely consistent with existing understandings of the nature of eLearning – a subject of much ongoing research. There are, of course, numerous considerations (e.g. resource availability) on the various negotiating tables where decisions are made that guide the project. Also, there is the issue of time; as suggested above, the first target of the project was achieved within a few months of its inception, and the team as a whole as well as individually clearly needs time to understand the possible implications of what is, indeed, an ‘action research project’, as the Project Director succinctly describes it. The limited view of ‘production’ supporting the first stage of the project seems to run counter to the conceptualisation of the project as research.

An ongoing review of the OpenLearn production processes has begun to create and implement a different workflow for production. This review draws on feedback from team members in different areas as well as user feedback provided via the Research & Evaluation strand of the project. Underlying this review is the discussion/creation of clearer guidelines concerning the re-purposing work based on the heuristic framework developed by academics in the team, as discussed below. Amongst various changes is a review of the structure of the content management system used by OpenLearn (Documentum eRoom). The current structure reflects the original workflow in the categories available to register the status of Units along the stages of the re-purposing process. Preliminary discussions have highlighted the need for inclusion of a stage of Initial Review by academics to ground the project more clearly as one of action research. Additional requirements include the need to capture a timeline of each stage of the process and to communicate these stages to the relevant team members. These will be familiar issues to those who have tried to work with learning object databases.

One issue of particular relevance to the re-purposing work is the need for a close integration between technical and academic work. UKOU materials have been traditionally developed for print, with Web-based presentation a relatively recent innovation (the first course with teaching text designed for the Web was *You, your computer and the net*, which was first presented in 1999; Weller, 2000). Current CTs developing courses for Web presentation work closely with system designers, programmers and media colleagues, and the process is iterative and guided by knowledge on subject-specific pedagogy as well as a host of other considerations, including the outcomes of institutional as well as external research in various areas related to eLearning. In such cases, CTs feed back directly to technologists on perceived pedagogical needs that arise, often, from the subject or topics being taught; conversely, technologists can contribute their expertise in multi-disciplinary, pedagogically meaningful dialogues. It is through this sort of dialogue, we believe, that it will be eventually possible to identify, in the light of user feedback, best practice and create quality assurance criteria, even if only tentatively.

In OpenLearn, however, tight deadlines allow for much less flexibility and creativity. In agreement with the institutional move towards using XML for course development and production, OpenLearn has established an automated publishing process that places a huge strain on the workings of the project as any changes to Units on the VLE must be done on the source XML, which is then used to generate a set of HTML pages via an XSL transformation. The adopted schema is that being developed for the whole institution, together with proprietary plug-ins for Word. Crucial to the LearningSpace re-purposing work is the fact that materials are excerpts from courses written with very different learning environments in mind. The wide variation of styles and structures for courses across Faculties, departments and, sometimes, within a single department, means that it is technically very difficult to devise a single schema and, hence, an XSL transformation that will convert the all the original materials into pedagogically-meaningful sets of HTML pages to be published on the VLE. The need for close interaction between pedagogues, researchers and technologists is clear given that re-sectioning for technical reasons may have a considerable impact on the ‘content’.

Parallel considerations arise within the LabSpace, which is envisaged as an environment for sharing and re-purposing by educators. XML is key to achieving the goal of standards compliance, particularly IMS and, in the future, SCORM. However, to meet this end both the schema and the interpretation of the schema within the VLE (which controls the visual rendering) must be shared for new contributions to function correctly. An interesting dilemma for an 'open content' initiative.

The question of boundaries, however, leads us neatly to a closely related issue: ownership. The importance of these issues to the work of re-purposing suggests that there is scope for research on the theme of what Andrew Abbott (1988) terms 'professional jurisdiction', as suggested below.

'Giving away the family jewels': ownership

Ownership, naturally, is a major theme underlying any discussion surrounding digital formats, as it has an impact on areas much beyond the sharing of educational resources. In the context of OpenLearn, however, this appears in terms of two broad areas of concern: (a) professional remit (discussed above), which is linked with a conception of the nature of the project; (b) IPR/CR. Both create crucial (and very tangible) issues for the team, and, indeed, delivery of the first project target owes much to achievements of the team members working in the IPR/CR area. In this article, however, we would like to focus on a slightly subtler aspect of ownership: that related to the academic staff of the university, who have actually written the materials.

In practice, the university holds the copyrights of all teaching texts written by its academic staff, but there are basic procedures required for obtaining permission for reusing materials, as detailed in the CURVE Guide (CURVE, *op cit.*). In short, permission needs to be sought from the appropriate authority, typically Deans of Faculties. OpenLearn, thus, adopted a procedure to invite Faculties to put forward suggestions of materials for re-purposing using a standardised pro-forma. The first call was very fruitful as it yielded over 1000 hours of proposals. Despite problems in some cases, when it was impossible to create an OpenLearn Unit for launch (mostly due to technical or rights constraints that would imply the need for major, therefore unfeasible, academic rewriting), most of this material was or is being re-purposed. The subsequent call, over the summer months, however, was not so successful, and issues different from staff absence due to annual or study leave underlie this.

Academic staff at the university have subtle relationships with the texts/courses they produce. For example, rhetoric surrounding resource sharing and open content that uses expressions such as 'improve materials' is challenging to many UKOU academics, although most of the colleagues with whom we have spoken find the ideals of the OER appealing in different ways. Writing courses at the UKOU can be a very rewarding albeit demanding job in that it is a creative task that invites participation in a process involving constant learning on our part, learning in terms of subject, pedagogy in the subject and, more recently, the use of Web-based educational technologies. Participation in this process, however, requires considerable commitment and investment to navigate through the complex negotiations with academic colleagues, technology experts, finance gatekeepers and various categories of support staff. Academic authors may also operate 'at the point of delivery' as ALs teaching courses to which they have contributed, suggesting a profound commitment to teaching as well as to the institution with its democratic ideals. The whole of UK Higher Education, however, is subject to substantial change that challenges a culture and modes of operation established over decades, and it is within this scenario that OpenLearn must exist. OpenLearn, with a vision that is not necessarily widely-shared, can be perceived as a threat to individuals as well as the institution.

Therefore, the task of liaising with Faculties, discussing offers and possible involvement of authors in the project, is crucial in very concrete ways. One amongst various strands of the project is that of sustainability, which translates into the search for ways in which the open content provision offered by OpenLearn can be integrated alongside the main university provisions in the longer term. Given the many motivations for the continuation of this work (McAndrew, *op. cit.*), the issue of relating with Faculties appears crucial for the project, and ongoing discussions on this issue, revolve around building strategies for locating the project more clearly and productively within its institutional context. Although the team counts on a group of academics based full-time on the project, the combined subject-based expertise of this group cannot be anything but limited, thus implying the need for a broader forum in which to discuss and create guidelines for quality assurance. To this end a group combining OpenLearn and Faculty representatives has been established to identify shared goals and refine existing procedures that will take the open content initiative forward.

Ideally, this group will address issues related to the tension between subject-specific and instructional design-based approaches that have arisen during the discussions that provide the basis for this paper. These discussions suggest that the instructional design-based approach appears to be the prevalent view of OpenLearn held by Faculty-based academics. Despite the notion that OpenLearn is trialling new ways of presenting learning resources, the project is not developing materials in any way comparable to the work of CTs, yet it appears as a stage in which tensions of this nature are re-presented, possibly exacerbated by the perceived decentralised, horizontal style of project management that has been prevalent elsewhere in the institution. The apparent changes in the relationship between an occupation and its actual work, which Abbott (1988, p.20) terms 'jurisdiction', is surely not an idiosyncrasy of OpenLearn or the UKOU, and a research strand focusing on professional and organisational change might be a fruitful area of investigation with potential interest outside the confines of the project.

Another matter of crucial importance is that of the specification of offers put forward by Faculties. From the perspective of OpenLearn, it is crucial that detailed information on the materials being offered is provided, as these materials need to be physically located in an institution that has only recently created a digital archive of its courses (in other words, some of the materials being re-purposed exist only as print, which has obvious practical implications for re-purposing). On the other hand, one of the questions raised by Faculty representatives is their need for a clearer understanding of the requirements of OpenLearn such as more precise guidelines to be used when identifying and putting forward offers of materials for re-purposing. The ongoing review of the outcomes of the first stage of the project in terms of actual re-purposed materials indeed suggests the need to review the underlying 'transformation' framework developed earlier. 'Transformation' is the OpenLearn term for 're-purposing of materials into self-standing Units', and three models were identified early in the project: 'integrity', 'essence' and 'remix'. These models were the outcome of early academic discussions and are explained in some detail in Lane (2006, July working version), which also provides guidelines on the characteristics of a 'Unit' as envisaged at that time. This leads us neatly into the last area of issues we have identified so far: those related to the materials themselves.

Linearity, components and specificity

Lane (*ibid.*) outlines 'Units' as having the following characteristics:

- 3-15 hours of study time in size, ranging from roughly an evening's worth of study to a week's worth of study, part-time;
- Will probably be labelled as being at a particular Higher Education level ... as known within the QAA's [Quality Assurance Agency for Higher Education] Framework for Higher Education Qualifications [QAA, 2001]

- Are self-contained with no references within them to other Units and limited references to external URLs;
- May be subdivided into smaller sections or bits of 3-hours length;
- Will normally have no more than one learning outcome or competency per 3-hour bit;
- Can involve a mix of media but will use more activities than is traditional in a pedagogic text;
- Will comprise both material study time and learning thinking time.

The document also outlines characteristics for groups of Units ('course of study'), but we'd like to concentrate on issues related to single Units. It is, however, worth stressing that the guidelines above are tentative and part of a working document that is currently under review. For instance, the size of some of the Units currently available in the LearningSpace is outside the range specified above, and there has been much debate on the significance of Unit levels in contexts outside UK Higher Education. Another area of discussion is that of learning outcomes. The QAA specifications are relatively broad and, despite the availability of an institutional framework developed by another institutional project (Learning Outcomes and their Assessment, LOTA – see Dillon *et. al.*, 2005, for an overview), this tends to be used in different ways across Faculties. A decision was, therefore, made to reflect this variety within the OpenLearn Units, but there has been some debate within the project team on whether it would be appropriate to create a standardising template for the presentation of learning outcomes for Units created in the project.

In contrast with the initially envisaged 'shape' of Units, material for re-purposing and reuse by OpenLearn consists of extracts from UKOU courses. These courses are written for supported, part-time study over 6-9 months, and may vary in length from 300 to 600 hours (including assessment), with some of the more recent courses ('short courses') requiring 100 hours of study over 3 months. The fact that we are dealing in the main with extracts from long courses implies that the re-purposing work must take into consideration (at least) the following:

- Pedagogy and structure
- Use of third-party material
- Use of media components and how they are integrated
- Localisation (UK audience) and specificity regarding the UKOU vernacular

UKOU courses provide, as a rule, albeit under different guises, a linear path through learning resources. Linearity is, as a matter of course, imposed on the material with the use of a 'study guide' that sets out the order in which the various resources should be tackled (even if this path is presented as an alternative amongst others that learners may develop themselves in resource-based course). The 'guide' may be a set of core teaching texts or a less substantial booklet that provides the backbone or spine of the course. This includes assessment work that needs to be produced at specified times throughout the course, thus providing a crucial pacing element for the learner (in addition to consisting of a logistic necessity for the institution). Linearity, however, may be an issue at lower levels of abstraction. It may be simply a necessity arising from the topics taught in a course (e.g. it is necessary to introduce derivatives before introducing integrals in a calculus course), or perhaps a required pedagogical strategy for teaching complex argumentation (e.g. philosophy topics). This brings to the fore a major (possibly the quintessential) conundrum of open education: how to create learning experiences with minimal constraints in terms of pre-requisites.

The issue of pre-requisites has been core to course development at the UKOU, and CTs have developed a number of strategies to deal with this. For instance, some courses provide a preparatory pack, usually the equivalent of a week's part-time study (8-10 or 12-15 hours,

depending on the length of the course). Others provide resource packs tailored to the perceived, specific needs of the course. Additionally, the university counts on a variety of general study skills, student-support 'Toolkits', as well as a learner support site provided by Student Services (<http://www.open.ac.uk/study-strategies/>), which offers full access to registered students. Course descriptions available in the Courses and Qualifications prospectus (<http://www3.open.ac.uk/courses>) include information regarding recommended pre-requisite skills or background knowledge required for a course, but these are not mandatory within the University's open access policy.

Linearity, on the other hand, either across a whole course or within a given block or module of the course, may well be a given of the pedagogical choices and innovations made during course development. Themes or threads running across the material are not uncommon (e.g. in courses that focus on conceptual rather than practical knowledge such as courses in the Humanities). Detaching materials from an original context that coheres around a given theme raises issues of quality. 'Quality' is generally a given of UKOU material, yet it is difficult to articulate this in terms of specific characteristics. However, removing materials from a context strongly based around a theme has the potential to diminish their perceived quality, as indicated by a few of the Units reviewed for launch. Indeed, given the experimental nature of eLearning as a whole, and, in particular, the ground-breaking nature of the OER movement, we believe that generating ideas and encouraging debate on what 'quality' may be in the context of OpenLearn is a core academic task.

Crucially, amongst the resources used in an UKOU course, there may be a varying proportion of third-party materials, i.e. materials with copyrights not owned by the university. It is common practice across disciplines to include, in different measures, textual resources from the relevant subject literature and, importantly, broadcast Audio-Visual (AV) material commissioned by the University. The re-purposing of such materials has potentially massive implications in terms of rights fees and academic time. Where permission cannot be obtained, extensive revisions, which may impact both pedagogy and quality, may be necessary.

Course excerpts put forward for re-purposing may also include software components. For example, IT and computing courses often include, as a central component of their learning resources, commercial software packages that may have to be precluded from OpenLearn. An obvious deterrent is the cost of these third-party components. One option recently suggested is to replace proprietary software with Open Source alternatives, and the resource implications, particularly in terms of potential need for subject-specific expertise, are being examined. However, we also face constraints imposed by the present state of development of the XML/XSL tools and the VLE; for example, we are unable to deliver many of the rich, interactive, components developed in Java. Tantalising excerpts must therefore be 'parked' until such time as development resources become available.

Audio-visual elements pose their own unique challenges. UKOU AV material has been delivered to students in a variety of formats exploiting the latest technologies available at the time of first presentation, ranging from VHS to current interactive DVDs. Many of these materials do not exist in digital form, hence must be digitised prior to use, adding to the costs. The poor quality of streamed media has deterred widespread deployment, leaving the option of downloading higher quality formats. The question then becomes that of 'how much' can a learner be expected to download, given that some video examples exceed 120Mbytes (e.g. a 10 minute video clip could take 35 minutes to download over ISDN). Such considerations have had a significant impact on the re-purposing of Units comprising AV materials, which in their former life would have been supported by CD-Audio or DVD. Creating a new interactive context for re-purposed AV materials poses a considerable challenge in terms of pedagogy and technical infrastructure.

A further issue impinging on the use of AV (as well as graphics, generally), is the need for compliance with the Special Education Needs and Disability Act 2001 (SENDA) specifications (online at <http://www.opsi.gov.uk/acts/acts2001/20010010.htm>). Although the university has counted on a service (The OU Access Centre <http://www.open.ac.uk/cater/>) that adapts materials for different media (amongst other roles), it has now become a core task of course development to consider questions of accessibility. In particular, Web-based materials must contain image descriptions and AV transcripts that can be processed by a screen reader. Such descriptions exist for most courses originally developed for the Web, but most materials put forward for re-purposing by OpenLearn are print-based, and this has an impact on project resources as SENDA-compliant materials must be created in such cases. There is ongoing discussion in the institution on how best to tackle this issue, as a measure of subject-specific knowledge is clearly required to produce consistent material, and related discussion is taking place in the OpenLearn team.

A final (preliminary) area of concern is that of localisation. Although UKOU courses can be studied in most countries in Western Europe, and some can be studied almost anywhere in the world, they are written in English, drawing essentially on English-based scholarship and thinking in the various subjects, for, primarily, an UK-based audience. This epistemological/discursive/cultural location of UKOU courses is reflected also in the pedagogies used, as well as in the vernacular of the institution itself. It is not uncommon, for example, that registered students and staff alike refer to course codes but cannot remember titles precisely. Indeed, the institution as a whole, including its student cohort, is beset with acronyms that often puzzle newcomers. Issues of localisation, therefore, transcend the mere question of translating across languages, as they raise questions concerning the relevance and value of some of these materials (and/or elements of these) to audiences elsewhere in the world. There is ongoing discussion within the team on how best to tackle these issues, particularly in terms of supporting communities of uses potentially converging around the LabSpace, who are much better positioned to carry out 'transformations' of OpenLearn materials to suit their own needs, contexts and realities.

4. Evaluation and quality

A major pedagogical issue facing re-purposing for OpenLearn that may impact profoundly on the quality of the learning experience associated with our Units is the use, in the source material, of group work and tutor-supported activities. The lack of summative assessment and the associated certification of learning, in itself, raises interesting questions regarding the purpose, motivations for and nature of learning in an open context such as OpenLearn. For the purposes of our discussion here, however, we would like to focus on the use of group discussions as a core pedagogical tool within a potential Unit. At the current stage of the project, it is not possible to predict if and how the many available Moodle forums and extra communication tools (currently available in the LabSpace only) will be used. This means that, from a pedagogical perspective, a decision is required on if and how to integrate these facilities into Units based on materials that use group discussion. Another factor that needs to be considered is the policy decision not to moderate forums, but to encourage self-regulation within potential communities of learning that may come to form around OpenLearn. This is a major theme of the Research & Evaluation strand of the project that will feed back to the production process.

Questions of quality, however, refer to broader issues of topical interest. As noted above, OpenLearn is using three 'transformation models', as described in Lane (*op. cit.*):

- The integrity model: 'where all the material in [a Unit] is recognisably very similar to the original material and as complete as possible';

- The essence model: 'where the source material is cut back to the essential features, with text heavily edited into shorter blocks fitting a single page (or two), and new activities added to increase interactivity';
- The remix model: 'where the source material is used as a starting point or early draft of what needs to be taught, but the [Unit] is then designed from the outset for ideal Web-based delivery'.

In short, this framework provides a heuristic tool to enable the project targets to be achieved: by April 2008 OpenLearn must, with its limited resources, provide 5400 study hours on the LearningSpace and 8100 study hours on the LabSpace. This is clearly an enormous challenge, and the need to streamline at least part of the process is imperative. The transformation models provide a basis for developing such a process, and the team are currently drawing up detailed guidelines for 'integrity model' transformations in the light of a review of issues raised prior to the project official launch. The working assumption is that certain kinds of materials are more appropriate for an 'integrity transformation' within the possibilities of OpenLearn. For example, material that is mostly text-based, perhaps including AV with copyrights owned by the university, perhaps core text taken from the course introduction, in short, material that requires minimal re-working and, therefore, costs (understood also in terms of time), appears ideal. However, since, according the outline above, only Units created by the 'remix model' would be ideal for Web-based presentation, this requires clarifying the nature of the main strand of the project as either one of sharing 'content' or one of sharing 'eLearning resources', and creates a major dilemma for the team.

The team are currently gathering feedback internally as well as from users regarding aspects of navigation and design of the site as well as basic interactivity, and work is already underway to prepare the next version of the site (envisaged for early 2007). The question remains, however, on how adequate is the notion of 'integrity' in this context. Re-purposing involves re-working materials for presentation on the Web, and it is possible that some materials cannot be re-purposed in this way. This is a core topic of ongoing research.

One of the questions we have faced during the pre-launch work is what Lane (2006, August working version) refers to as 'topicality' of materials. Maintenance of the OpenLearn sites is an issue to be more directly tackled as the project develops and sustainability routes are created, but 'topicality' is, nevertheless, a major concern. 'Topicality' in this sense refers to up-to-dateness of both 'content' and pedagogy, including pedagogy in different subjects. It is not uncommon that UKOU courses are updated in different ways and at different intervals, and this is strongly correlated with the subject area (e.g. Technology courses tend to be updated more frequently than Arts courses). One of the ways in which OpenLearn, particularly the LearningSpace, is being construed internally is in its potential as a 'showcase' for individual subject areas. This is not unproblematic as there is no shared conception of what constitutes a 'sample' or 'taster' and whether any existing notion of 'taster' can be aligned with the OpenLearn requirements for a 'Unit'. In short, a variety of issues related to disciplinarity could be raised, and this is an area of ongoing research within the institution.

Indeed, the Course Models Review (institutional project – <http://intranet.open.ac.uk/course-models/index.shtml>) has proposed a set of working categories for the classification of UKOU courses, and preliminary cross-campus discussion of this classification suggests a link between types of course and discipline. The classification produced is still under discussion, but it does suggest a correlation between pedagogy and discipline. This might be informative to the re-purposing work of OpenLearn, and a review of currently available Units in the LearningSpace is underway to investigate this correlation further. Another conceptual tool being introduced in this review is that of patterns (Alexander, 1979; Goodyear *et al.* 2004; McAndrew *et al.*, 2004), originally proposed to support the 'transformation' process and provide alternative descriptions of the Units.

The LabSpace provides the ideal forum for discussion and experimentation on the many issues we have raised in this article, as many are not straightforward questions that can be answered with any degree of finality. Developing the LabSpace is indeed a major strand of the project, and we hope that communities will evolve to support this development and contribute to the debate.

5. Conclusion

In closing, we would like to summarise the issues and challenges we have identified so far.

Table 2: Summary of issues impinging on re-purposing for OpenLearn

Category	Issues	Essential requirements
Boundaries	Professional 'jurisdiction'	Negotiation of responsibilities
Ownership	Institutional context	Integration of the project within institution
	Project context	Integration between technical and pedagogical development Dissemination of information and communication within the team Generation of best-practice guidelines for re-purposing
Source materials	Linearity	Keeping 'open education' <i>open</i> (e.g. Pre-requisites/ Supporting resources) De-contextualisation and re-contextualisation
	Component	Assessment of the role of third-party elements Creation of SENDA-compliant descriptions
	Localisation	Assessment of specificity of languages and cultures
Evaluation and quality	'Topicality'	Identification of patterns of renewal Assessment of need for subject-specific knowledge
	Learning resources vs. eLearning resources	Identification of opportunities/needs for research Generation of ideas and debate on what 'quality' may mean in the context of OER

Our initial description of the overall challenge we face as academics in the project was that of re-purposing materials predominantly developed for print, albeit within the framework of larger multimedia courses, into self-standing Units of learning presented on the Web. We remarked that this is by no means a straightforward enterprise, and we discussed the various reasons why this must be the case. We also argued that it is not possible to approach the work of re-purposing without careful consideration of contextual issues, often of a political nature, whilst remaining aware of the potential benefits of the project to the institution, its funding body, and the broader communities of educators and learners around the world.

In this article we have referred to specific themes arising from a reflection on our experience of re-purposing for OpenLearn *as it has been so far*, so it consists of a tentative 'narrative' written by 'insiders'. As noted, the process is currently under review, and this should, indeed, be the case throughout the life of the project. The need for reviewing this 'narrative' before long goes, of course, without saying. We still believe, however, that the thread underlying the context we have represented here should remain the same: the need to resolve the tension between the mundane – everyday realities of social interaction and budgetary constraints – and the visionary – that which drives development and change.

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