CHAPTER

12

Sharing Existing Teaching Materials as OER: Key Considerations from Practice

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Abstract

Sharing of higher education teaching materials under open licenses is a growing global practice. Several models of adapting and sharing existing materials include: institutionally-driven initiatives that result in materials being shared, mostly through repositories; cascade models that have a strong mentoring component; use of network repositories; and conversion of commercial teaching resources for sharing as open educational resources (OER). The processes followed in these models are similar in many respects. They typically include authoring of teaching resources for classroom teaching, making the decision to share resources openly, adapting resources for open sharing (which includes copyright audits), replacing copyrighted content with OER, seeking permissions to reproduce content, HTML authoring, packaging materials, quality assurance, and sharing OER by hosting them on multiple platforms. The case studies presented in this chapter, drawn from OER initiatives in Africa, the UK and the USA, introduce an empirically informed discussion of varied methodologies of producing and sharing existing teaching materials. Particularly, the case studies point out the technical, pedagogical and legal considerations that should guide OER production and sharing. The chapter highlights that both minimalist and well-resourced and supported approaches provide opportunities for improved access to quality teaching materials in under-resourced contexts. Importantly, early adopters of OER in higher education are developing practice models and frameworks that will make it easier for those who adopt open sharing practices in the future.

Keywords: *copyright clearance, licensing, OER hosting, packaging, sharing content, sourcing content*

Introduction

Open sharing of higher education teaching materials has grown exponentially since early open courseware initiatives from the Massachusetts Institute of Technology (MIT) and the Johns Hopkins School of Public Health (JHSPH). Before existing materials can be shared as open educational resources (OER), significant reworking must occur to prepare them for public dissemination.

Using eight case studies that were compiled through face-to-face, email and telephone interviews, and from information in reports and guides on selected projects in Ghana,[1] South Africa,[2] the United Kingdom[3] and the United States of America,[4] described below, this chapter presents an overview of the processes informing preparation of existing teaching materials for release as OER.[5] The cases are used to elaborate concrete examples of practice. Purposive sampling (Cohen, Manion, & Morisson, 2007) was used to select the cases, in order to highlight practices in different regions. These cases do not, however, consider models that involve development of new materials or adaptation of existing materials to create new resources. They focus exclusively on the processes surrounding release of existing materials under open licenses. This has been a problem that most universities interested in harnessing OER have had to confront at some point, so it is hoped that the emerging lessons might be of value to those wishing to share materials with others.

The chapter first presents a brief description of the selected initiatives, locating them within typologies of practice that outline their distinctions. Pertinent issues on technical, legal and pedagogical aspects for consideration in the sharing of teaching materials as OER are then discussed. The chapter concludes by presenting a dual model of OER sharing, based on ideal and acceptable practice.

Models of Practice in Converting Teaching Materials to OER

Three approaches that distinguish various methods of converting teaching materials into OER in higher education have been generated from the case studies: institutional, network repositories and conversion of commercially published resources. These approaches are not "ideal" types, as their characteristics are derived empirically, rather than from some known criteria of "best practice". Further, the types are not mutually exclusive, although their differences provide sufficient justification for mapping different practices that illustrate options for preparing teaching materials for sharing.

Institutional Projects

Institutional projects comprise three variations:

1. Institution-wide projects, involving all schools and departments, with a unit acting as a conduit to support OER activities, and hosting materials on an institutional repository.
2. Mentorship-based projects, where an institution with an established OER repository cascades its own experience to support and mentor other

institutions wanting to develop their own OER and establish an institutional repository.

3. Discrete projects that are faculty or departmentally driven.

A good example of an institution-wide project is the University of Michigan (U-M) OER initiative, Open.Michigan (http://open.umich.edu), the objective of which is to create and share teaching resources and research from the university. Open.Michigan (OM) is driven by a team of education specialists, software developers, dScribes (staff and students who engage in OER production), and publication and copyright experts. It facilitates a vibrant community of over 350 educational content producers, OER advocates and a diverse student body, all dedicated to building a culture of sharing knowledge at the university. The initiative has produced OER in 180 courses, and materials constituting over 1,412 resources from 13 U-M schools and colleges. A major contribution of the OM initiative to the OER community is the development and refinement of the distributed OER production process called "dScribe", which is elaborated upon later in the chapter.

Likewise, the University of Nottingham's OER resources, which include full credit-based modules and shorter stand-alone teaching resources, are hosted on the U-Now OER repository (http://unow.nottingham.ac.uk). U-Now was instituted in 2007 under the university's eLearning strategy. Activities to enable it are funded by the university and driven by the Information Services Learning Technology Unit. U-Now is part of Open Nottingham, which focuses on production and publication of OER and encourages use of OER in the university. The growing significance of OER at Nottingham is evident from its inclusion in the university's five-year strategic plan for 2010–2015.[6]

Although the university is the sole funder of U-Now, in 2009 and 2010, the Higher Education Academy (HEA) and the Joint Information Systems Committee (JISC) funded the Building Exchanges for Research and Learning in Nottingham (BERLiN) project within U-Now. BERLiN provided an opportunity to employ full-time staff to work on OER development and related activities and to involve more faculty members. This led to the collective production of material equivalent to 360 credits for the funded period, as well as investigation and documentation of issues faced by higher education institutions during the process (Beggan, Johnson, Horton, & Stapleton, 2010). It also gave the university a chance to consolidate multiple and disconnected pockets of OER within the university, making U-Now the institutional repository. Independently, the BERLiN project was able to publish 22 modules. During 2011, publication of resources has continued to be supported by faculty under the Open Nottingham project, with over 1,100 credits now available in U-Now and with 70 per cent of schools engaged in open publication.

Another example of an institution-wide initiative, with a mentorship dimension, is the University of Bath and University of Derby OER initiatives. These were implemented under the guidance of the University of Leicester, which had acquired OER development experience through its Open, Transferable, Technology-enabled Educational Resources (OTTER) project. Before OTTER, Leicester already had a well-established tradition of sharing content freely, dating back to 1993, but these efforts were fragmented. OTTER enabled the university to consolidate these and host them in a single institutional repository. Systemic processes for production, publication and updating of OERs were also developed.[7]

The OTTER project was supposed to produce 360 credits' worth of teaching resources and was able to exceed this funding requirement, producing 438 credits' worth of teaching materials (Witthaus and Armellini, 2010).

Following the success of OTTER, the University of Leicester team received additional funding from the OTTER funders, JISC and HEA, to cascade and transfer the outcomes of the OTTER project to the Universities of Derby and Bath. The subsequent project, OER Sustainability through Teaching and Research Innovation: Cascading across HEIs (OSTRICH), entailed Leicester providing leadership and direction to the other two universities, and sharing templates[8] used in OTTER. Besides the release of materials worth 210 credits and the current development of materials equivalent to another 85 credits, OSTRICH also modified the process workflow framework developed for OTTER. Further, a useful guide on "scaffolding"[9] other OER project teams through OER adoption and implementation has been developed (Witthaus, Armellini, Gagen, & Jenkins, 2011), and provides a useful starting point for other institutions wanting to follow this mentorship model of materials conversion and open sharing.

As an example of a discrete project, since 2009, the University of Cape Town (UCT) Faculty of Health Sciences (FHS) has been running a pilot project on health OER development and use, funded by The William and Flora Hewlett Foundation, under a grant co-managed by OER Africa and University of Michigan. The Education Development Unit (EDU) in the FHS is responsible for co-ordinating this project, which involves solicitation of teaching materials from faculty, and assisting with relevant activities to prepare these resources for sharing as OER. To date, the initiative has completed nine OER and is working on ten more to be released in 2012. The health OER work is driven by a small team of OER champions, most of them employed on a part-time basis, who, in addition to running advocacy workshops, approach lecturers who have good teaching materials and encourage them to release these as OER.

In another example of a discrete initiative at UCT, the Centre for Higher Education and Development (CHED) Academic Development Unit (ADU) modified an existing booklet for first-year students and released it as an OER.[10] This guide had first been published in 1998 as a booklet for students and consisted of printed text bound together and handed out to students. A lecturer from CHED was responsible for rewriting the guide, with the assistance of other colleagues for translation. A graphic artist from the Centre for Educational Technology (CET) was responsible for illustrations, and CET technical staff took care of the packaging and web publishing of the resource.

Also initiated in 2009 as part of the same Hewlett Foundation grant funding for the UCT FHS health OER initiative, the University of Ghana (UG) College of Health Sciences (CHS) health OER initiative involves developing materials from scratch (see Chapter 4 by Omollo, Rahman and Yebuah), as well as converting existing teaching materials into OER. The latter are sourced from faculty, with the dedicated co-ordination of one of the lecturers who has also shared his teaching materials as OER. This lecturer works with a small team of three technologists, who assist with any technical conversions required on the materials before they are released. To date, ten teaching resources have been converted to OER and the team is working on seven more.

Network Repositories

MedEdPORTAL (www.mededportal.org), a programme of the Association of American Medical Colleges (AAMC) in partnership with the American Dental Education Association, is a good example of a network repository. MedEdPORTAL co-ordinates the sourcing, peer review and publishing of teaching resources and assessment tools in medicine and dental health education. Publication of teaching resources on MedEdPORTAL is recognised by institutions in the AAMC as constituting the required scholarship for promotion, especially since publication of materials is based on a formal peer-review process. MedEdPORTAL resources are used in over 190 countries globally, with weekly downloads of over 1,000 resources.[11] MedEdPORTAL has over 700 peer reviewers who are volunteers from faculty. Over 2,000 resources have been published on the portal since 2005.

Converting Commercial Publications to OER

Established in 1992, the South African Institute for Distance Education (Saide) plays an important role in supporting the development and use of OER through its OER Africa initiative (www.oerafrica.org/aboutoer/AboutUs/tabid/113/Default.aspx). Before the concept of OER came into existence, Saide had developed a comprehensive set of teacher education materials called the Study of Education Series. Keen to release these as OER, Saide transformed the resources, which were originally published by Oxford University Press, to produce and share openly:

- Five 200-page learning guides designed for independent study, downloadable either in sections, or as whole books.
- 39 edited readings to support the five modules, and full references for a further 23 which the original authors/publishers would not make available as OER.
- 29 audio clips of interviews and classroom events related to the themes in the modules.
- 23 video clips which bring to life issues and debates from the modules or show methodology in action in real classrooms. (Welch, 2011)

Saide had retained the copyright of the series but had granted Oxford University Press the exclusive right and license for publishing the material. After a few years, this right reverted to Saide for five of the seven resources. However, the publisher retained the rights over the resources' design, layout and typography. This meant that Saide had to redesign the resources. The process of releasing these materials as OER as the Saide Teacher Education Series injected new life into them by providing affordable access to teachers and students in higher education institutions.[12] At the time of this chapter's writing, Google Analytics showed that without any dedicated marketing, the resources in the Teacher Education Series had received over 84,000 views since being released in July 2010. In addition, four of the five OER learning guides are in use in BEd and Honours degrees at South African institutions — University of South Africa, University of the Witwatersrand, University of Pretoria and Nelson Mandela Metropolitan University. For example, in each of 2010 and 2011, the University of the Witwatersrand ordered 200 print-on-demand copies of the learning guide and readings for use by second-year students. Students use the website to access audio resources.

Except for the Saide initiative, the starting point for converting teaching materials into OER in the other initiatives has been that the materials were intended for use within the respective institutions, then made accessible for use by others elsewhere. That resources are actively used and considered good enough for fee-paying students in an institution gives some assurance of their quality for external users.

Summary

Table 12.1 highlights approaches to sharing and releasing content as OER that emerged from the case studies, together with the salient features of these approaches.

Table 12.1: Options for publishing teaching materials as OER

Model	Initiatives	Defining features
Institutional: institution-wide	• Open.Michigan • University of Nottingham	• Financial backing of institution, possibly supplemented by other sources of funding. • Scale of publications is achieved. • Central hosting of resources in institutional repository. • Involvement of various schools, which can be demanding on human resources. • Dedicated units to support initiative. • Suitable for consolidating fragmented initiatives.
Institutional: discrete	• UCT FHS health OER • UG CHS health OER • CHED student guide	• Specialised content focus is achieved. • Scale and output is usually limited. • Limited human capacity, as small team is driving the initiative. • Often donor-funded. • Can work with other institutional structures.
Institutional: mentorship	• OSTRICH	• Opportunity for replication of OER initiative using own experience to mitigate known limitations. • Resource output high because of cascade experience. • After initial mentoring period, initiatives in mentored institutions can be scaled up independently.
Network repository	• MedEdPORTAL	• Scale is large. • Specialised subject matter focus. • Support from network — volunteers in peer review.
Conversion of commercially published work	• Saide Teacher Education Series	• Easier when the authoring institution retains copyright. • Option for exploiting diminishing commercial value of resources.

Pertinent Issues on Sharing Teaching Materials as OER

As mentioned previously, for existing teaching materials to get to the point where they can be shared, reworking of material is essential. The technical, legal and pedagogical issues pertinent to the adaptation of teaching materials for sharing as OER are considered in this section.

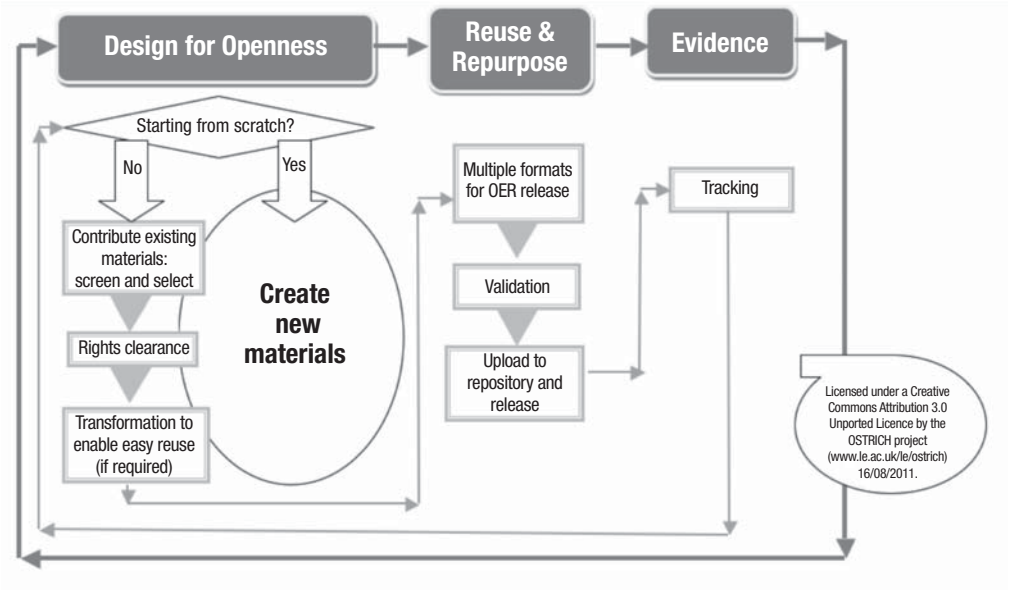
Technical Issues

The technical issues in preparing teaching materials for sharing as OER pertain to the processes involved and are based broadly on the production/workflow process, which includes initial authoring, HTML authoring, presentation and packaging, and hosting of resources.

Publishing Process

Except for the MedEdPORTAL model of publishing, the workflow processes for converting teaching materials as OER are similar across the initiatives explored for this chapter. The process begins with sourcing materials for conversion and ends with hosting of resources on repositories for open access. Although not all initiatives have an explicitly written workflow model, the OSTRICH Content, Openness, Reuse and Repurposing, Evidence (CORRE) 2.0 and the Open.Michigan dScribe processes mapped out in Figures 12.1 and 12.2 encapsulate the standard process implicit in all initiatives.

Figure 12.1: OSTRICH CORRE 2.0 OER publishing workflow process[13]

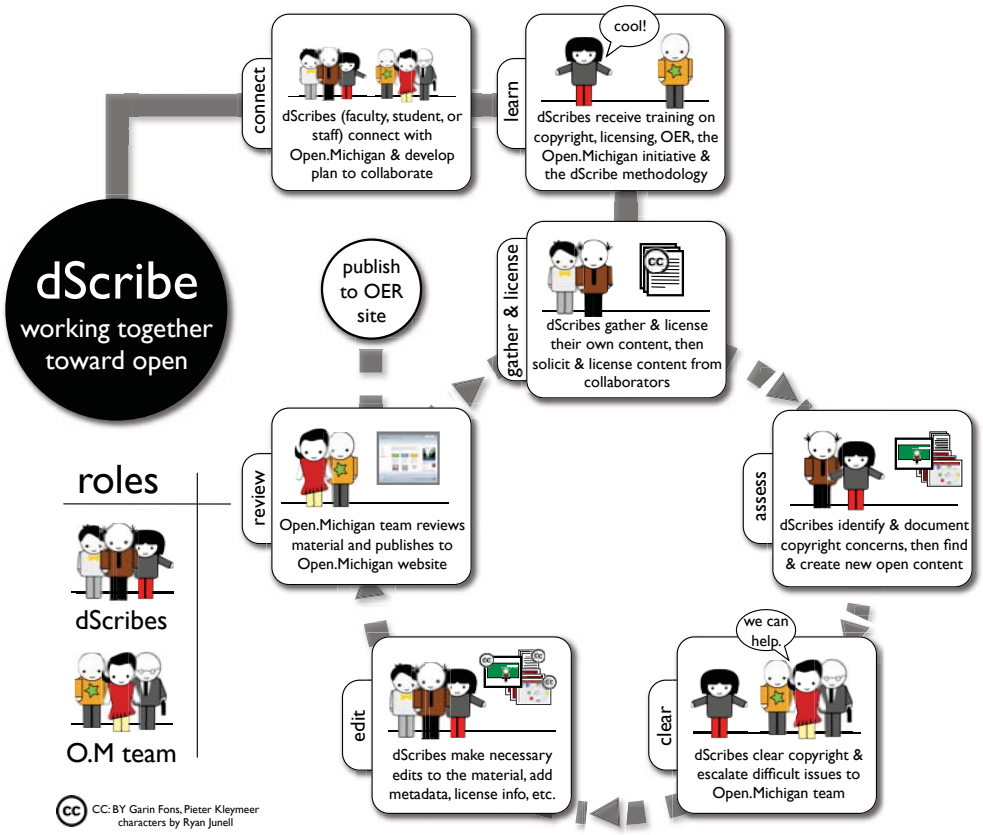


CORRE was first developed for the OTTER project and modified to version 2.0 for the OSTRICH project, to include processes of creating OER from scratch. Figure 12.1 shows that an important objective of sharing teaching resources as OER is reuse and repurposing by others. CORRE 2.0 uses this objective to inform the workflow process, as thinking about the end product and how best to share it shapes the authoring, licensing and packaging of the resources. Tracking use is

also important to evaluate whether materials are being used and to determine how they can be made more visible if download appears to be limited.

The CORRE workflow is process-oriented, in that it maps the key processes for converting teaching materials into OER. The U-M dScribe workflow is process- and role-oriented, as outlined in Figure 12.2. CORRE outlines the production process without specifying the implementers, but the dScribe process is explicit about who the role players are for each activity in the production process, and what their specific functions are.

Figure 12.2: Open.Michigan OER publishing workflow[14]



Whilst it follows the generic process of content gathering, copyright clearance, transformation of materials, review and publication, the dScribe process is quite unique in that existing student–lecturer relationships are maximised through collaboration in the OER production process, thereby including students in the production of the resources with which they will engage during their learning. The process also streamlines the Open.Michigan team's responsibilities, which, because of the involvement of dScribes, are reduced to support on any copyright challenges experienced by dScribes, quality assurance and publishing of resources. The Open.Michigan team makes use of OERca to complement the dScribe process. OERca is a content and decision management system that assists dScribes to track and manage the content clearance process, and to submit copyright clearance questions to the Open.Michigan team for review.

Training, which is embedded in the dScribe process, is integral to some of the other initiatives as well. In addition to dScribes training, Open.Michigan trains support staff to ensure a standard approach to OER development across schools and departments engaged in OER activities. MedEdPORTAL advocates training that is tailored to the needs of faculty, when they need it. Mentor training is effective, as authors who have published OER successfully can cascade skills to novices. The OSTRICH project included the Leicester team training content developers from Bath and Derby on content development issues. Training is useful for streamlining the process and can save production time if content developers know what is expected of them from the outset.

The explicitness of the CORRE 2.0 and dScribe workflow processes is useful in determining the level of input for emerging projects and in mapping out project management methodologies against identified processes. Of course, there are cost implications for each process model. The dScribe process could be a more cost-effective model, because making use of students as co-collaborators could reduce the cost of copyright clearance and sourcing OER to replace copyrighted materials. At the same time, student exposure to OER during the production process promotes their awareness and use of OER.

The OER production process for BERLiN, the UCT CHED student guide, UG CHS and the Saide Teacher Education Series resembles that of CORRE 2.0, whilst that at UCT FHS is modelled on the dScribe process. Post-graduate students play the dScribe role at UCT FHS. UG CHS is aware of the dScribe process but is not using it for converting teaching materials, as technical staff members are addressing copyright clearance matters.

The MedEdPORTAL workflow process is different in that completed resources are peer reviewed upon submission. When material is approved by the peer reviewers, MedEdPORTAL hosts it on the website. The peer reviewers provide recommendations to the author on how content can be improved, and authors likely use resources in their institution to effect changes for enhancing their work.

Authoring and Metadata Generation

In terms of authoring, faculty are typically responsible for the initial copy, which is usually handed over to technical teams for HTML authoring — this is the case with UCT FHS, UG CHS and Nottingham. The University of Nottingham has chosen a simple HTML editor, *ExE*, which enables non-technical developers to "build web ready learning resources relatively easily" and also facilitates "incorporation of multiple media types and the production of thematically linked resources" to enable lecturers to eventually author their own materials (Beggan et al., 2010). This takes the load off the technical support team significantly and also empowers lecturers.

Once authoring has been completed, materials need to be presented and packaged in a way that makes them accessible. Discoverability is an important aspect of accessibility. For a resource to be used by others to achieve the goal of sharing, it has to be discovered through search engines and the university repository. A key element of improving discoverability is the generation of metadata for a resource. Metadata are information describing the characteristics of a resource. Metadata can consist of the title of the resource, its author, what type of resource it is and an explanation of what the resource is about. These descriptions are used to create

metatags, which enable search engines to retrieve the resource when keywords are used to search for it.

Metadata generation practice varies with the different initiatives. The author of the current edition of the UCT CHED student guide did not generate metadata or package the guide, as these functions were handed over to another department in the university. At UG CHS, UCT FHS and MedEdPORTAL, metadata generation is the author's responsibility. For MedEdPORTAL, after the author's submission, MedEdPORTAL staff catalogues and formats the metadata for consistency. The University of Nottingham has a metadata and cataloguing team that generates metadata for resources. Saide metadata is developed by the librarian, technical experts and content experts. The Saide respondents reported that there are challenges with metadata generation if a resource is too large, so it typically has to be "chunked" into discrete parts. However, metadata for each part must provide the context for and links to the other parts to make learning more meaningful, otherwise chunking becomes a hindrance to learning if the different parts of a resource are disconnected and do not reflect a coherent learning pathway. At Open.Michigan, the publications manager, and in some instances any person who uploads content, assigns metadata.

Discoverability of resources can also be enhanced through the use of different filters. For example, the University of Nottingham's U-Now site has an advanced search facility that provides filters by author, faculty, school and media type.

Packaging Materials

Packaging of materials has implications for access to the resource. For most resources, packaging is a straightforward process which includes putting resources on the Web in various formats (for example, PDF, PowerPoint, Word or video). The Saide experience of repackaging existing multimedia-based materials for digital download within a context of changing technology provides important insights on how complicated the process can be. The Teacher Education Series comprises multiple video and audio files. When Saide started converting these resources to OER, the video and audio files were in old formats so the technical expert at Saide had to find a media house with facilities to convert VHS tape to DVD and then to a format that could be used on a website. The same process was followed for audio files — the original cassettes had to be converted to CD. Added to the struggle between old and new formats was how to keep sense and maintain coherence after a change in format. Some of the larger files were chunked into topics as discrete, stand-alone resources. In the case of video, this necessitated creation of stills to contextualise the video if it had been chunked.

The studied initiatives also highlight necessary considerations regarding file size in resource packaging. Saide's file size restriction on the Teacher Education Series resources was 15 megabytes or lower, and MedEdPORTAL has an upload restriction of 500 megabytes. For files over 500 megabytes, MedEdPORTAL saves the resource to CD or DVD and posts it to the requestor anywhere around the world within a week of the request. Saide also provides an option to send materials to users upon request.

In consideration of those with connectivity and bandwidth challenges, UCT FHS provides its materials in low and high definition. File formats include PDF and Word so that the material is easily available for adaptation and reuse. The CHED

student guide project shows that using graphics takes up less file space than using photographs. The materials should also be packaged in such a way that they can be accessed online and downloaded in whatever format the user wants. At UG CHS, materials are packaged on CD and distributed to students for use.

Resource Hosting

Release of OER involves hosting resources on local servers and institutional repositories. Table 12.2 shows locations of resources for the initiatives that were studied.

Table 12.2: Hosting of OER

Initiative	Location of completed OER
UCT FHS	• Faculty website: www.healthedu.uct.ac.za/workareas/healthoer (links to UCT OpenContent directory) • UCT OpenContent directory: http://opencontent.uct.ac.za • Vula site: https://vula.uct.ac.za/portal (where resources can be accessed by students as part of learning materials if being used for teaching) • OER Africa's African Health OER Network website: www.oerafrica.org/healthoer/FindOER/tabid/1862/Default.aspx • The University of Michigan Open.Michigan site: http://open.umich.edu/education/med/oernetwork
UCT CHED student guide	• UCT OpenContent directory: http://opencontent.uct.ac.za/Health-Sciences
UG CHS	• Distributed to students on CD • Hosted on a local area network server for the CHS • Hosted on the African Health Network • Hosted on the Open.Michigan site
OSTRICH	• Project repository: http://ostrich.bath.ac.uk • Jorum: http://jorum.ac.uk
Open.Michigan	• Available at Open.Michigan site: http://open.umich.edu • Link available on OER Africa website
University of Nottingham	• Institutional repository: www.nottingham.ac.uk/open/opennottingham.aspx • Link to repository on OER Africa website • Jorum: http://jorum.ac.uk • MERLOT: www.merlot.org • RSS feed makes content available in: » Open CourseWare Consortium: www.ocwconsortium.org » Xpert: www.nottingham.ac.uk/xpert » OER Commons: www.oercommons.org » Folksemantic: www.folksemantic.com
MedEdPORTAL	• MedEdPORTAL website: www.mededportal.org
Saide	• OER Africa website

Table 12.2 shows that faculty-based projects have multiple dissemination avenues. This is likely to increase their discoverability and thereby share resources more meaningfully.

Legal Issues

There are two major legal concerns in the presentation of teaching resources for sharing as OER: copyright and licensing. The copyright clearance process is regarded as more demanding in terms of time input, and two approaches to copyright clearance stand out:

1. *Dedicated approach:* For example, at U-M, the Open.Michigan team has developed a casebook[15] of illustrative examples of content classified according to type, compiled from the U-M OER clearing process and review of U.S. copyright case law. Each example carries an explanation of why content is copyrighted and gives a recommendation on a course of action, including removing the content and searching for a replacement, or retaining and attributing the original source. The copyright clearance process is therefore quite broad, and considers retention and attribution as well as replacement of copyrighted content. For replacement of copyrighted materials, Open.Michigan has compiled a resource with sites that are useful for sourcing OER, ranging from images, audio/video, content, textbooks, clip art/icons and other OER.[16] Saide also has a dedicated approach, and employs an editor who checks materials for copyright and writes letters seeking permission to use copyrighted content in OER. UCT FHS works with lecturers initially to ask them about the copyrighted materials, then dScribes seek permission to use the content. MedEdPORTAL staff editors prepare a memo with all potential copyright violations and give authors options to address these.
2. *Conservative approach:* This is aimed at protecting the institution from risk associated with infringing copyright law. Examples of this include the following:
    a. The Universities of Nottingham and Leicester have taken the position that, if the image is not central to the pedagogic message, it is best to remove it. The two institutions report that rights clearance is very costly, given the time required, and takes up quite a significant portion of the budget. With the goal of removing or reducing this overhead, The University of Nottingham created the Xpert Attribution Tool, which helps users to find Creative Commons or public-domain images and automatically incorporate license information into the image. Routinely embedding open licenses simplifies OER development, removes barriers to repurposing and publishing OER, and substantially increases the usability and accessibility of course materials. The tool is available at www.nottingham.ac.uk/xpert/attribution.
    b. UG CHS and UCT in the CHED student guide have used graphic artists to draw images to convey the message. Graphic artists at UG sit with the lecturer to get a clear idea of the pedagogic message,

then draw an image to capture this. CHED did not have issues with copyright, as it was adapting a departmental resource and from the beginning decided to incorporate images to enhance the student resource. These images are available under a Creative Commons license and can be reused by other people if needed.

The OSTRICH and BERLiN projects have highlighted important key lessons about the complexity of the copyright clearance process:

- If authors have not accurately or fully attributed sources in the original teaching materials, which is often the case when the material is designed for private classroom use, it can be time-consuming to trace original content and check its copyright status.
- Whilst the option to use existing OER is attractive, there may be incompatibilities that prevent reuse. For example some available OER may be licensed under more restrictive terms (such as a non-derivative license) and cannot be used in materials that will be published under more open terms (such as a share-alike license).
- When asking for permissions, authors may come across cases where contracts with authors for commercial publishing have changed, and some resources have been used from other existing resources, so tracking the history of intellectual property rights becomes a long and complex undertaking, which delays completion of materials. Further, copyright owners may not respond to requests, or there may be duration-of-use clauses which affect reuse (University of Bath, 2011; Beggan et al., 2010).

In all the case studies, work shared as OER is licensed using conditions from the six Creative Commons (CC) licenses (http://creativecommons.org/licenses). Each licensing condition enables authors to choose the use terms that they want to impose on their work. Almost all institutional initiatives amongst the cases, with the exception of Nottingham, allow authors to choose their own license. However, U-M does not accept non-derivative licenses, which restrict reuse in that the materials cannot be adapted. For the OTTER project, the University of Leicester also only allowed licenses that permit free reuse and repurposing. All resources on U-Now are licensed as CC Attribution-NonCommercial-ShareAlike (CC BY-NC-SA); authors are not able to choose other options. MedEdPORTAL reported that even though authors make their own choices, they are typically choosing the least restrictive licenses.

The UCT CHED student guide is published under a CC Attribution-NonCommercial-ShareAlike license. The Saide Teacher Education Series is released under the least restrictive license, Attribution (CC BY), which allows others to distribute, adapt, remix and build upon the original work, even commercially, as long as they acknowledge the author of the original work. Most content being shared by UCT FHS is licensed using a non-derivative license, and the interviewed respondent attributed this to the fact that academics are not yet ready to share their content without restrictions. Nevertheless, the fact that they are sharing their content means others can still use these resources, even though they cannot legally repurpose them.

Pedagogical Issues

Pedagogical implications of open sharing are embedded in almost all aspects of the process of converting teaching materials. Learner engagement enhances the quality of the materials. That is why resources in the Teacher Education Series are enriched with video and audio clips, and the CHED student guide is extensively illustrated, to ensure that learners can understand and learn without the mediation of an instructor. However, rather than not share anything at all, as academics get used to the idea of open sharing and the accompanying requirements to make content more dynamic for easier self-directed learning, it will be useful for some time to share even simple text-based materials.

The most versatile OER will likely be dynamic and consider the context of use, but also cater for wider usage. The UCT CHED guide was transformed from a plain text-based, ring-bound resource written in English only, to a multilingual guide presented in three South African languages used predominantly in the region where UCT is located (Afrikaans, English and isiXhosa). In this way, the language barrier is diminished when students use the guide for self-directed learning. The resource can also be used beyond UCT. The aesthetics of the guide have been greatly improved. From simple black-and-white text, the guide now appears in colour and the predominantly text-based guide is infused with graphics to illustrate some of the messages. This is likely to engage students who use the guide for self-study and to enhance their understanding. Whilst the original resource was available to students in print-only format, the new guide is available online as well. This also means that whilst it is designed specifically for first-year UCT humanities students, and has specific information on how to use the UCT library, for example, first-year students from other faculties at UCT as well as elsewhere can make use of the guide for generic information on nutrition, study skills, writing skills and examination preparation. The print and online formats cater for students who have Internet access as well as those who do not.

The University of Nottingham respondent believed that resources like handbooks, which explain learning pathways, outline sequences of learning, direct users to additional resources and offer assessment tasks, are very valuable for self-directed learning, as the user can benefit from these without the need for an instructor. Self-directed learning is also enhanced if a description of how chunked materials relate to other parts is given, so that a user knows that a single resource is more meaningful in relation to its other parts.

Material available in editable formats and licensed for repurposing enables other academics to adapt it easily for their own use. Including the date when the resource was produced allows users to decide how current the resource is, whilst providing information on the level of study enables them to decide quickly whether or not the resource is relevant to them (Beggan et al., 2010).

The initiatives explored demonstrate ways by which the quality of a resource is determined:

1. *Author's responsibility:* For Nottingham, if the resource is actively being used in the university, it is considered good enough for sharing through the repository, as there are internal mechanisms for monitoring quality which any additional monitoring would only duplicate. The author would have made sure the resource is of good quality. UCT FHS content contributors

are also responsible for quality of content and need to approve its aesthetic appearance before it is posted on the website.

2. *Formal peer review:* At Open.Michigan, the author, education specialists and the publication manager are responsible for final quality assurance, and the resource is reviewed several times during its development. MedEdPORTAL has a pool of peer reviewers who review each submitted resource before publication. The OSTRICH project had a quality management framework embedded within it. In the development of the Saide material, there were extensive formal peer-review processes as well as rigorous editing processes by the publisher. The Saide librarian provided quality assurance for the uploading of the material onto the website.
3. *Informal peer review:* UG CHS relies on other lecturers to volunteer to review submitted content before it is released as OER.

Conclusion

The OER sharing models presented in this chapter illustrate how varied the options are for academics who want to publish their teaching materials and share them with others. Options include: learning from others who have gone through the experience; releasing as a faculty or department; pursuing an institution-wide initiative; converting commercially published materials; and using a network repository for lone content developers who have no institutional initiative to support them.

What is important is that the processes required before release are essentially the same for all models, and include content authoring, copyright clearance, licensing, packaging, quality review and hosting.

Based on this process analysis, features of both an ideal and a minimal OER release model for teaching resources are outlined in Table 12.3.

Table 12.3: Dual model of OER publication of teaching materials

Process	Ideal characteristics	Minimum characteristics
Sourcing content	• A dedicated unit is in place for supporting academics to publish their resources as OER. • Criteria for sourcing content are developed. • Content is converted for OER sharing. • Explicit process model. • Training of content developers.	• Champions of OER are available. • Any type of content can be converted and shared. • Content is shared as is, with no modification.
Copyright clearance	• Make use of dScribes or copyright clearance support team. • Replace all copyrighted content with OER content. AND/OR • Use graphic artists to replace copyrighted images. AND/OR • Ask for permission to use copyrighted resources.	• Author asks for permission. • Discard all copyrighted content, and replace with new content and images drawn by graphic artists.
Licensing	• Use the attribution license and any other license that allows reuse and repurposing. 	• Use an Attribution-NonCommercial-NoDerivs (i.e., no derivatives) license. 
Quality review	• Enable internal and external peer review of the resource.	• Authors review the quality of their own resources.
Packaging	• Multiple file formats to enable adaptation. • Consideration of file sizes for easier download. • Package for both online and offline use. • Chunk to reduce size. • Provide context of chunking and link to other parts of resource. • Generate metadata. • Package on CD and DVD for very large resources.	• Restricted file formats. • Large resources published as single resource. • Generate metadata.
Hosting	• Disseminate on multiple repositories and sites. • Multiple filters to promote discoverability. • Track usage. • Feedback facility built into resource.	• Publish on local area network server.

Whilst the ideal is resource intensive and may not be achieved by most, the acceptable model conveys a message that it is better to share basic resources than none at all, whilst simultaneously aspiring for the ideal.

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Notes

1. University of Ghana College of Health Sciences Health OER Project.
2. University of Cape Town Centre for Higher Education Development student guide, the Faculty of Health Sciences Health OER project, and the Saide Teacher Education Series project.
3. The BERLiN and OSTRICH projects, which incorporate projects at the University of Nottingham and the University of Leicester.
4. University of Michigan Open.Michigan and MedEdPORTAL.
5. Some of the projects described in this chapter worked on creating new resources as well as converting existing materials to share as OER. The focus of this chapter is conversion of existing materials.
6. The strategic plan is available at www.nottingham.ac.uk/about/values/universityvalues.aspx
7. See OTTER final external evaluation report: www2.le.ac.uk/departments/beyond-distance-research-alliance/projects/otter/documentation/OTTER%20FINALSUMMATIVE%20%20REPORT%20JUNE%202010-FINAL.pdf/view
8. Particularly the CORRE framework that was modified during OSTRICH — see Appendix A in the final OSTRICH evaluation report: www2.le.ac.uk/departments/beyond-distance-research-alliance/projects/ostrich/documents
9. Available as Appendix B in the final OSTRICH evaluation report: www2.le.ac.uk/departments/beyond-distance-research-alliance/projects/ostrich/documents
10. Available at http://opencontent.uct.ac.za/Centre-for-Higher-Education-Development/Studying-at-University-A-guide-for-first-year-students
11. www.mededportal.org/about
12. A major problem for teachers and students in developing countries had been that the price of the printed texts was unaffordable.
13. Sourced from the OSTRICH final project report: www2.le.ac.uk/departments/beyond-distance-research-alliance/projects/ostrich/documents
14. Sourced from Open.Michigan: https://open.umich.edu/wiki/images/3/31/DScribepublishingprocess-update.jpg
15. The casebook can be downloaded from https://open.umich.edu/wiki/Casebook
16. See http://open.umich.edu/sites/default/files/3659/PDFs/open-content-repositories.pdf for a complete list of sites.

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