

# Cultural and Organizational Drivers of Open Educational Content

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**T**he purpose of this essay is to consider the cultural and organizational issues behind the creation of open educational content. In it I argue that there are many benefits to the individual, to the educational institution, and to society at large from open educational content and, further, that such educational content has to be part of a wider context of open resources across the research, education, and cultural domains.

## **The Open Context**

The word *open* is much used as a prefix to describe an environment or process that is owned by an often diverse community of creators but available to all, usually for free. These days the concept thrives because the Internet provides an invaluable vehicle for the ready distribution of information and knowledge and the tools to manage and exploit that information. The Internet is a prime example of public benefaction; it greatly enhances the reach of information to all levels of society and countries of the world. It is not new, however; the public library movement of the 19th century was based on the “open” ethos, as were various open universities and, arguably, state-provided education, whether for children or adults. In all cases there was seen to be a clear benefit to society through ready access to educational and cultural resources.

Open educational content can help maintain a long tradition facilitated initially by public libraries and benefactors and now by the Internet and the World Wide Web. Lecturers and teachers and, indeed, anyone with expert knowledge and the skills and willingness to pass on that knowledge can now do so. The *Wikipedia* is a prime example of such open educational content albeit one where the quality of the content is

variable. But first, what do we mean by *open educational content*? And how does it relate to the plethora of other *open*-prefixed terms such as *open source software*, *open standards*, *open access*, and *open science*?

## Open Source Software

Open source software is probably the most well established of these concepts; the term *shareware* is sometimes used to describe some examples of open source software. Open source software is software that is made available by the authors freely, or at a very modest cost, to anyone. The software may be small, specialist applications or software tools, or large and significant products such as the Linux operating system or the Moodle learning management system. Open source software seldom comes with much support, although this is sometimes available from third-party providers, and the potential user will need adequate expertise and other resources to deploy and customize the software to meet their particular needs.

To those with the expertise, open source software can often form the basis of a bespoke solution because the source code is available in a way that the code for third-party software often is not. It may be the only affordable solution to small organizations. Thus smaller colleges and schools will often deploy mature open source software offerings where commercial solutions are too expensive. Open source software, therefore, complements commercially provided software by widening choice. Few would doubt that open source software, intelligently chosen and deployed, offers real benefits to education and society at large.

## Open Standards

Open standards tend to be less visible to the practitioner. Within the world of information technology (IT), these are openly available, published standards, usually technical, for defining and managing processes and, of most interest where information is concerned, ways of exchanging data and information. Such standards can also cover operational and managerial procedures. Although some commercial software vendors would prefer a world where the user is “locked into” a particular system, open standards do provide an environment in which both open source and commercial software can prosper.

Open standards are, of course, absolutely essential in the real, not just the virtual, world; they define everything from railroad gauges (why 4' 8½"?) to electricity plugs, often at the national level. It is frequently quipped that the good things about standards is that there are so many

to choose from. Defining, agreeing to, and establishing open standards is often a slow process. Nonetheless, the world would be a less convenient place without them. And in the IT world, few would doubt the benefit of open standards and, indeed, their use and development is often strongly encouraged and insisted upon by funding bodies in the education and research environment.

## Open Access

Open access is a movement that started in the research area largely predicated on the argument that the outputs of publicly funded research (usually papers in scholarly journals) should be publicly (and usually freely) available.<sup>1</sup> The open access debate is mired in disputes with the scholarly publishing industry. The arguments for and against are not straightforward, largely due to the reward and recognition of research being heavily based on publications in prestigious journals. However, it is the research community and individual researchers who produce the research/outputs, and they should be less willing to hand over to publishers their rights to such a valuable resource when there is seldom a direct financial reward.

Proponents of open access make many, to my mind, powerful arguments in support of making their research outputs (in papers) available on the Internet, either on the web or in a repository, and either as the sole copy or more usually as a copy of the version published in a journal. Their papers are therefore more widely available to fellow researchers and, of particular importance to many, this is probably the only way the general public and much of the developing world can access them. There is also value in researchers making their peer reviews available. Further, in fast moving disciplines, such as particle physics where open access publishing is well established, the scholarly publishing process is far too slow to be an effective method of distribution.

The open access concept for research outputs is now being applied to research data, the argument being that better access to properly managed and preserved data will greatly enhance the research process. In some disciplines, such as the social sciences, this is long accepted; for example, access to population (census) data over a long time period is essential. But many disciplines can benefit from open data. However, the costs of storing data and describing the data in such a way that they can be found and used easily (known as *metadata*) can be considerable.<sup>2</sup> And while the benefit to a research discipline could also be considerable, the benefit to individual researchers is often less obvious; they are not usually rewarded for their data contributions.

## Open Science

A final, even more ambitious, concept is open science. Under this model, researchers share their research findings while actually carrying out the research. Thus, they are in effect exposing their experiment or other research activity to review and comment and advice from their peers in real time. This could prove to be a very effective and efficient process but requires considerable intellectual bravery. The Internet makes open science possible, and this is an extension of a growing trend for collaborative research described by terms such as *virtual organizations*, *collaboratories*, and *virtual research environments*.

## Open Educational Content

It is within this context of growing openness, particularly of online data and information, that the learning and teaching community should consider open educational content. The resources I have in mind are handouts and course notes that are produced primarily for use by a class; these are resources of little commercial value, compared to textbooks or more sophisticated learning materials, which can be expected to generate income. It follows, therefore, that any teachers considering making their materials readily available in an open access manner will have already determined that they have little economic value, either to themselves or their employer. This raises two considerations: Do universities and colleges regard such learning materials as conferring some competitive advantage? And, similarly, do individual teachers regard their course material as needing to be protected as a resource unique to them and as constituting a significant advantage in pursuit of their career aspirations?

There will be examples where such teaching materials do confer advantage to teacher or institution, but I would argue this is not normally the case. Such material is designed to support a particular course at a particular institution but seldom contains content that is not readily available already on the web, and few potential students will consider the quality of such course material an important criterion in deciding which university or college to attend (indeed they cannot, as such material is not usually available to them).

A number of political and policy drivers could encourage a culture of open access for learning resources. Making such resources openly available can be an important marketing tool and helps inform potential students about the quality of the academic experience they can expect from that institution.

The employing institution may have a policy to encourage or even mandate open access for such material. This will not usually be a comprehensive policy, but some universities do expect a significant proportion of handouts and course notes to be made available on the web. The MIT OpenCourseWare initiative is an obvious example, and more recently the UK Open University has built a similar library of resources called OpenLearn (see the essay by Professor Andy Lane in this volume). Even when the institution as a whole does not adopt an open access policy, many individual departments or faculties do so. Another significant driver for many teachers is the altruistic desire to share their knowledge with society, which can now be very effectively met through posting material on the web (either their own website or their employer's site), blogs, wikis, and other Web 2.0 technologies.

It is also possible to provide links between such content and online textbooks, journals, and other reading list materials. Such links are greatly facilitated in an open content environment and can provide considerable convenience for the student over current, largely library-based practice.

However, even when teachers or institutions accept that there is little or no commercial value in such resources, it does not follow that they will wish to make them openly available. It requires a great deal of work to prepare the content in such a way that it will be useful outside the class and that it will reflect well on the author and, where appropriate, the employing or hosting institution.

## **Issues for Universities and Colleges**

These different drivers lead to different approaches and hence different "collections" of materials for users to enjoy: an institutional library or repository or a less structured and controlled user-owned Web 2.0 environment. Both are to be welcomed in that they provide free scholarly and academic material to students, potential students, lifelong learners, and society at large. This is particularly valuable to those who, for whatever reason, cannot easily benefit from higher education, especially those in the developing world. On the other hand, we must not forget that this widens the digital divide.

There are a number of reasons why a university or college may wish to make some of their learning resources openly available. Their mission may include a public-good responsibility to help educate the community other than through formal learning; many institutions regard this as a valid and useful objective within a wider role of knowledge transfer and community engagement. They may see open access to learning resources as

a valuable “shop window” for attracting students and to help them understand the nature of the learning experience in higher (postcompulsory) education. It may simply be a natural extension of their open access policy for research outputs, or a relatively easy way of further exploiting their existing repository.

Many institutions will not yet be considering open access. There is an important role for policy makers and strategic thinkers in higher education to encourage this debate and help bring the issue to the attention of senior institutional management. Even if the reasons above do not motivate them, they will wish to consider where they stand in relation to other institutions locally, nationally, and internationally. They will wish to consider whether they are fully exploiting their investment in their institutional repository, and if they do not have a repository, whether they need one; they may also need to develop a policy on who owns the course material and who (the author or the employer) holds the rights to exploit and disseminate such resources. The benefits of open access can be gained regardless of who owns and exploits the rights, but in many institutions there is no clear policy. For institutions, having a clear and unambiguous policy concerning rights is more important than the specifics of the actual approach that they adopt.

Institutions must also consider the business case. Although the marginal costs of mounting learning resources may be small in terms of hardware and software, these costs will increase over time and could become significant. The major costs, however, fall to the teacher in producing high-quality material. There are also costs in quality control: poorly produced or inaccurate material will reflect badly on the institution. And in many subjects the material will need to be kept up to date.

## Issues for the Teacher and Author

A lot of existing course material, perhaps the majority, is not in a suitable form for making it openly available. It was written, often in a hurry, for internal consumption only. Few teachers would wish to expose such material to their peers, let alone make it more widely available.

Most handouts and similar courseware also contain some third-party materials taken from publications or other copyrighted resources.<sup>3</sup> To make it publicly available would require obtaining permission from the rights holder, time consuming at best and sometimes impossible, either because it is not possible to discover who the owners are (these are known as *orphan works*) or how to contact them, or because they will not reply. In some cases the author will seek financial compensation and this may well

preclude the possibility of making the resource openly available. Clearing third-party rights for text materials can be expensive and time consuming; it becomes even more so for nontext materials such as photographs, moving images, and sound and can be prohibitive where performing rights (plays, dance, and so forth) are concerned.

## Issues for Policy Makers Worldwide

Despite these difficulties, there is a growing interest in many countries, from national education policy and funding bodies, to encourage and facilitate the creation of an open layer of scholarly and academic content made up of research outputs and data and learning and teaching materials. This is increasingly seen more in terms of encouraging universities and colleges to build and populate repositories, and less in terms of building large central libraries of learning materials. The challenge now is to join these institutional repositories not just within a country but internationally.

Such a layer of organized and quality-assured content has enormous value: it can be reused (or *repurposed*, in the jargon) by other teachers; it supplements and complements the more formal material provided to students; it provides students with resources to enable them to learn at their own pace with some freedom from time and place; it lifts the knowledge base of society as a whole. As such, it is a vision worth striving for and it helps maintain the relevance of formal education in the modern Internet age. But it is not the only model.

Web 2.0 technologies provide a more organic, and many would argue more exciting, environment for learning. The content can be, and often is, made open to all, including students and the general public. It is not mediated by an educational organization and, in many cases, is not mediated at all. This clearly places an onus on the readers to apply critical reasoning to what they read, but that is an increasingly necessary skill in using the web.

The other significant sources of open educational content on the Internet are websites (whether designed with a pedagogic intention or otherwise) and Web 2.0 technologies such as wikis, blogs, and shared multimedia resources (Flickr, YouTube, and so forth). While these are not unstructured, they are not designed or populated with education as the sole, or even main, driver, and, as a rule, they are not quality controlled. However, Web 2.0 offers a dynamic, organic, and exciting environment that empowers both teachers and learners, whether undertaking formal education or not, to contribute educationally valuable, and equally educa-

tionally misleading, content in the open domain. As such it is a valid, and on the whole valuable, part of the open content spectrum.

Although much of the content under the heading of Web 2.0 technologies, or the simple deposit of web pages, happens outside the control of formal learning, it should not be assumed that there is not a role here for the educational institution, and certainly not that the teacher is a passive contributor. Universities and colleges can, and do, embrace Web 2.0 technologies as an essential part of the learner support infrastructure; it is a powerful communication tool for peer-to-peer and student-to-teacher interaction. It is less common, however, for the institution or teacher to manage, in the sense of *organize* or *preserve*, this material. It thus can only be found, if made openly available at all, through generic search engines such as Google.

We thus have, potentially, two equally useful open content environments—one well managed and structured with quality control but expensive to create and maintain, the other more random in the reach of the content but almost free. These approaches should be thought of as complementary but obviously require different actions from institutions and teachers in order to be exploited.

## Summary

There are a number of reasons why teachers and their universities or colleges might wish to add to the corpus of open content that will eventually contribute to a worldwide layer of scholarly and educational content:

- It is a marketing opportunity to attract students and to provide potential students with some insight into the higher (that is, postcompulsory) education experience, thus helping to widen access, improve retention, and reduce dropout rates.
- It adds to the body of reusable content to support the curriculum, particularly helpful for foundation courses (and remedial training).
- It provides a mechanism for recognizing one aspect of good teaching and potentially rewarding good teaching.
- It acts as a “shop window” and will be perceived, rightly in my view, as an indicator of the quality of education, not just at the individual institution but in the country as a whole; as such, it encourages more overseas students.
- In many cases it will support the ethos and mission of the institution, particularly if reaching educationally disadvantaged students and promoting distance and flexible learning are important.

- Finally, by being free to all and empowering students, it provides an enormous benefit to society at large, whether regional, national, or worldwide.

Building open educational content is not, however, without significant cost:

- It is expensive and time consuming to prepare good-quality, open access content and requires different skills from preparing normal text-based, printed handouts and course notes.
- It is usually necessary to prepare the resource for online dissemination and then, if required, make it available in print form (perhaps as a book); this is easier than doing it vice versa.
- The content must be designed to support a suitable pedagogic approach, which may be and almost certainly is very different from a traditional teaching methodology.
- Third-party rights must be cleared; this is often difficult and seldom speedy.
- In effect, the teacher and the institution become a “publisher,” and they may not have these skills.
- Describing and cataloging (usually through appropriate metadata) are also not easy and can require specialist skills (often, but not exclusively, held by librarians); without this, the material can be hard to find. And if it cannot be found, then what is the point of making it open?
- A platform for storing and delivering the content is required: perhaps a repository or perhaps a learning management system.
- Finally, in addition to the problems of cost and the requirement of different skills for participants, there remains the challenge of finding a sustainable business model and sustaining the necessary culture change by recognizing and rewarding high-quality and valuable (not synonymous with well-used) content.<sup>4</sup>

## Endnotes

1. Neil Jacobs (Ed.), *Open Access: Key Strategic, Technical and Economic Aspects* (Oxford: Chandos Publishing, 2007). See also *Open Access*, a Joint Information Systems Committee (JISC) briefing paper, September 1, 2006, which also has a valuable bibliography, [http://www.jisc.ac.uk/publications/publications/pub\\_openaccess\\_v2.aspx](http://www.jisc.ac.uk/publications/publications/pub_openaccess_v2.aspx).

2. Neil Beagrie, Julia Chruszcz, and Brian Lavoie, *Keeping Research Data Safe*, a Joint Information Systems Committee (JISC) report, May 12, 2008, <http://www.jisc.ac.uk/publications/publications/keepingresearchdatasafe.aspx>.
3. Carol Fripp and Dennis Macnamara, "Copyright Management in the World of Learning Objects," a paper presented at EDUCAUSE in Australasia, Sydney, Australia, 2003, <http://www.aesharenet.com.au/aesharenet/pdf/147educausepdf.pdf>.
4. Further information and analyses of open educational content issues can be found in Guntram Geser, "Open Educational Practices and Resources: The OLCOS Roadmap 2012," *Revista de Universidad y Sociedad del Conocimiento* 4, no. 1, 2007, <http://www.uoc.edu/rusc/4/1/dt/eng/geser.pdf>, and in Andrew Charlesworth, Nicky Ferguson, Seb Schmoller, Neil Smith, and Rob Tice, *Sharing eLearning Content: A Synthesis and Commentary, Final Report*, a Joint Information Systems Committee (JISC) project report, September 2007, <http://ie-repository.jisc.ac.uk/46>.

## Bibliography

- Beagrie, Neil, Julia Chruszcz, and Brian Lavoie, *Keeping Research Data Safe*, a Joint Information Systems Committee (JISC) report, May 12, 2008. <http://www.jisc.ac.uk/publications/publications/keepingresearchdatasafe.aspx>.
- Charlesworth, Andrew, Nicky Ferguson, Seb Schmoller, Neil Smith, and Rob Tice. *Sharing eLearning Content: A Synthesis and Commentary, Final Report*, a Joint Information Systems Committee (JISC) project report, September 2007. <http://ie-repository.jisc.ac.uk/46>.
- Fripp, Carol, and Dennis Macnamara. "Copyright Management in the World of Learning Objects," a paper presented at EDUCAUSE in Australasia, Sydney, Australia, 2003. <http://www.aesharenet.com.au/aesharenet/pdf/147educausepdf.pdf>.
- Geser, Guntram. "Open Educational Practices and Resources: The OLCOS Roadmap 2012." *Revista de Universidad y Sociedad del Conocimiento* 4, no. 1 (2007). <http://www.uoc.edu/rusc/4/1/dt/eng/geser.pdf>.
- Jacobs, Neil (Ed.). *Open Access: Key Strategic, Technical and Economic Aspects*. Oxford: Chandos Publishing, 2007.
- Joint Information Systems Committee. *Open Access*, a JISC briefing paper, September 1, 2006. [http://www.jisc.ac.uk/publications/publications/pub\\_openaccess\\_v2.aspx](http://www.jisc.ac.uk/publications/publications/pub_openaccess_v2.aspx).