

Appendix F

University of Bolton Case Study: Part 2

Author: Dr R.G. Jackson

**IPR in International e-Learning Programmes
Case Study from The University of Bolton**

**Part 2. The Open Courseware Debate
In International Higher Education**

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Dr. R. G. Jackson

The University of Bolton
Deane Road
Bolton
BL3 5AB

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1 INTRODUCTION

It has almost come to be expected now that any university, having or aspiring to an international reputation, should exhibit some form of learning materials on the World-Wide Web. Such materials are increasingly being viewed by senior managers as a form of advertising as to the quality of the educational environment in terms of the professional standards of the materials produced, the pedagogical quality and academic excellence, to be experienced at the institution.

Within the UK HE system of funding, international students resident for study in the UK generate about twice the level of income as that of EU students. Consequently, impressing international students with the view to them travelling to the UK is not viewed as a peripheral activity. (Note that EU distance-learning students generate more income than international students because of the HEFCE contribution.) The English speaking world has an advantage when producing courseware in that English is currently the dominant international language for higher education and many foreign students wish to become proficient in their use of the language.

The quality of courseware on view may become a contributor to the status of a university. An entrepreneurial, international publisher may decide to produce a student guide to distance-learning programmes at universities around the world. In a similar manner to the allocation of ratings on the student educational experience by the Quality Assurance Agency (QAA) and the awarding of grades from the Research Assessment Exercise (RAE), yet another league table could emerge.

The purpose of this part of the report is to consider whether courseware should or should not be made freely available to anyone having access to the internet. The clouding of the issue of openness has occurred because the financing from public funds is not what it was. Most of the governments of the developed countries have adopted some form of mixed-economy model for their general economic strategy. Accordingly, the funding of higher education is no longer seen as a state owned and funded monopoly. The world-wide expansion of students going into tertiary education has, because of the economic implications to societies, rendered a degree education that of a commodity to be traded with profit or loss as any other.

It has become the economic strategy of governments to under-fund universities. Universities UK has charted the decrease in funding per student from £8k pa in 1989/90 to £5k pa in 1997/98 (down 38% in real terms) see reference 19. The UUK leaflet *DfES Announcement of Spending Review 2004* (see reference 19a) states that the increased funding announced in the March 2004 Budget will enable student growth without **reduction** (i.e. no restoration) in the funding per student in real terms. There is to be a 9% growth in research funding in real terms over the 3 year review period to 2007/08. The additional uncertainties over top-up fees make it difficult for institutions to forecast any operating surplus. With this climate universities have adopted an aggressive stance toward income generation from whatever source they can in order to develop, and in some instances even to maintain, the resource base for both teaching and research.

Formerly, senior academic posts in universities were held by eminent researchers able to sustain research groups by their ability to attract funding for their field. It has now become commonplace to see positions at the directorate level whose prime responsibility is to generate income from wherever possible for the general funds of the institution. This has always been the style, to a greater or lesser extent, of universities in the US. The competitive nature of the US culture has naturally led to this

outcome. Universities in the UK are following a similar path. The percentage of university staff in non-academic related posts is increasing. Universities are now expected to have a business plan which includes supporting the generation of wealth in the local area by

- providing technical expertise,
- assisting in the incubation of business start-ups,
- engaging in entrepreneurial activity and
- providing continuing professional development,

all in addition to the core business of teaching students.

Within this context the concept of open access courseware has become a very sensitive issue to university senior managers. The following sections describe some of the developments and the arguments as to whether charging for courseware is likely to emerge as the standard practice internationally.

2 THE MIT APPROACH

In any discussion on the topic of free courseware the developments achieved by the Massachusetts Institute of Technology (reference 12) have to be examined because of the potential impact of their approach on the wider community.

In an interview in 2001, Phillip Long (reference 11) indicated the origins of the MIT initiative on open courseware. The introductory paragraph of the article states:

The open source software development approach makes the source code of software freely and easily available to almost anyone. Ideally, under the open source approach, a large community of capable individuals contributes to improvements in that source code, while a quality control system manages the interactions.

The MIT initiative has two themes:

- A** To develop an open-source architecture, OKI *Open Knowledge Initiative*. (See Kumar et al, reference 10 for a fuller description). Initially Stanford University became involved, having begun work on a similar initiative themselves, but it quickly broadened to about a dozen partners.
- B** To develop teaching materials, OCW *OpenCourseWare*. The project was funded initially by two major grants from the Mellon Foundation and the Hewlett Foundation totalling \$11 million. The original projection was to adapt 2,000 courses (modules) over 6-7 years at an estimated cost of \$100 million. At the time of writing there are about 900 modules available. The completed 2,000 is targeted for 2008. This major project is bound to impact on others trying to enter the field of commercial courseware production.

Open courseware material could be considered as effectively the equivalent of having freely accessible e-books written specifically for a learner rather than a knowledge browser. The concept is in some respects analogous to the ethos of the public library movement.

3 INTERNATIONAL LEGISLATION

Whether an institution or commercial organisation decides to produce open courseware or other e-learning materials will, to some extent, be influenced by the international legislation currently in force. The following paragraphs give an overview of the international agreements on IPR. A brief description of international legislation can be found at the Global Internet Policy Initiative (GIPI) site listed as reference 7.

3.1 World Intellectual Property Organization (WIPO) (reference 20)

Originally founded in 1893 became a specialised agency of the United Nations in 1974. A list of relevant international treaties is maintained at their web site under the heading *CLEA; Collection of Laws for Electronic Access* reference 3.

3.2 World Trade Organization (WTO) (reference 21)

The stated goal is given at the web site:

The World Trade Organization (WTO) is the only global international organization dealing with the rules of trade between nations. At its heart are the WTO agreements, negotiated and signed by the bulk of the world's trading nations and ratified in their parliaments. The goal is to help producers of goods and services, exporters, and importers conduct their business.

There are currently 147 members and about 30 observers who are potential future members (reference 21a).

3.3 Trade-Related Aspects of Intellectual Property Rights (TRIPS)

Established by the WTO, (reference 18) is probably the most significant international agreement on IPR. Any nation that wishes to become a member of the WTO must ensure that its national laws uphold the TRIPS agreement. The TRIPS was developed largely from two previous pieces of legislation;

- A** The Paris Convention (see reference 17) of 1883 and its subsequent revisions and amendments for the *Protection of Industrial Property* and also
- B** The Berne Convention of 1971 (see reference 2) and its revisions and amendments for the *Protection of Literary and Artistic Works*.

Although the international legislation may be well in place, enforcement against infringement offences may not be straightforward. Once an infringement of copyright has been uncovered the following issues need to be considered:

1. Is the country where the infringement originated a member of, or an aspiring member of the WTO? If not, does the infringement break the national law of the country of origin of the infringement?
2. Is the outcome of the case likely to be favourable?
3. Is the cost of litigation likely to be beyond the value of the return?
4. Is the time-scale for any subsequent restriction order likely to be beyond the time when the material becomes obsolete or in need of review?

It is these latter issues that have led many small to medium sized enterprises (SMEs) to choose secrecy rather than to patent their intellectual property. A comparable problem faces the personal computer software, music and video industries. Litigation here has so far only been against commercial pirating leading to high-profile trials.

4 CULTURE AND COPYRIGHT

There are a number of cultural issues that affect attitudes toward copyright. The pirating of software has become a major issue over the past three decades. In some parts of the world illegal copying has become a cottage industry. The difficulty in locating and prosecuting individuals has shaped the originators' approaches to security, traceability and marketing.

4.1 Upholding Legislation

In any society there will be some national stance adopted concerning copyright which is defined by its statutes. The sub-cultural values that exist within any society may militate against these. For example,

- The laws may be too poorly defined for a court conviction to be possible.
- Corruption may exist so that cases do not reach court.
- Prosecution may be left entirely to individuals who do not have the resources to bring an action.
- Locating the suspected offender(s) may not be considered a priority by the police force.
- Poor individuals or small groups may see the stealing of copyrighted materials from wealthy institutions as morally just.

Most UK university legal offices are not structured to proactively seek recompense from third parties infringing their IPR especially when international law is involved. For this reason other methods of protecting courseware IPR are used. Some comments on this are:

- A specialist national legal office could be established with the expertise and financial resource for pursuing such cases. However, despite the efficiencies of having specialists this would still not be cost-effective and might present the UK education system internationally as being parsimonious.
- If an overseas university was found to be plagiarising materials, rather than proceeding with litigation, it might be possible to agree on a licence (perhaps at nominal cost) so that the materials could still be used with all logos and permissions prominently displayed. In this way the providing university advances its own *brand* in the overseas market place.

Finally, from the defensive perspective, Brunel University is one of the first UK universities to appoint a staff member whose responsibility is to ensure that the university adheres to software licensing agreements (see THES 3.9.04).

4.2 Variation in Legislation

Apart from the likelihood of minor variations in the legal definitions around the world there can be philosophical differences. For example, most national legislation concerning copyright acknowledges the concept of *moral rights* (reference 9) as stated in the Berne Convention. These rights exist to protect the reputation of the author particularly for literary, dramatic, musical or other artistic works. The author has the right to have their name included when the work is being publicised. Alternatively, they

can object to having their work treated in a derogatory way or mutilated so as to affect their reputation. Moral rights are not acknowledged as such in the laws of the USA. However, it was argued by the Senate in 1988 that other statutes in USA legislation do provide such protection. There have been various Case Law trials to test the extent of this cover (reference 13).

Generally, as stated in 3.3 above, any nation that is a member of the WTO agrees to be bound by its rules and must amend its national laws to in order to conform with all trade conventions. The exception is that of the concept of moral rights. This accommodates the USA.

4.3 The Teach Act (USA)

Under USA law, classroom educators enjoy the freedom to use copyrighted material provided certain criteria are met. However, these rights did not cover distance learning applications. The Technology Education And Copyright Harmonization (TEACH) Act of 2002 has extended most of the copyright freedoms to cover distance learning. A summary of this legislation is given at reference 1.

4.4 Variation in Attitude Amongst Academic Staff and Authors

In the early days of e-learning many academics voiced concerns that jobs would be at risk if contact with students was subjugated to *learning facilitators* using materials produced by academic or other authors. The concept of greater efficiency and the associated concerns of poorer student experience were first raised in the 60s with the introduction of learning machines. However, the learning machines did not fulfil their early promise and opposition subsided. Opposition to e-learning seems less prominent now than initially and many see its use internationally as being a very positive thing promoting international relations, contributing to world peace and economic development. Some authors are very protective of their works and want the full weight of the law to cover anything that they are involved in producing whether for financial return or for personal stature. Other authors take a more philanthropic or publicist's approach in that they are glad to have something on view so that all can join in and share the knowledge or participate in the debate. Interestingly, there is some anecdotal evidence that authors in the pre-1992 UK institutions are more protective of their work than those from the former polytechnic sector. This may be due to the cultural traditions associated with the authoring of learned texts. It may be that in the international context some cultures may be happier to contribute to open courseware whereas others are more commercially orientated.

4.5 Open Authoring

Jan Newmarch (reference 14) points out that there are many standard modules taught at under-graduate level (and even some at post graduate) around the world that cover almost identical content. An open courseware approach would mean that an institution located anywhere in the world could adopt standard, high-quality material or use links to include sections of such material within locally produced modules. A further benefit to the open approach is that suggestions for improvement (peer reviewing) would be received from international fellow academics so that quality and currency is always under review. This is a major theme in the MIT project, (see article by Charles M Vest of MIT in THES 5.11.04). The Development Gateway site, reference 16, lists some links to web resources about the promotion and development of open source and free software.

An early successful application of this contributory approach is the operating system Linux. This is a free Unix-type operating system originally created by Linus Torvalds. Suggested improvements to the system are generated world-wide and a committee sifts these for incorporation. The source code for Linux is freely available to everyone, *open source*. The operating system itself is free although vendors sell various user-friendly adaptations. However, it should be realised that the Linux initiative is for a different field of application to that of courseware. If someone takes the operating system and modifies it for a specific application, which subsequently causes damage, the modifier is responsible. However, for a knowledge-based system such as courseware errors in the material are the responsibility of the provider. To reduce the risk of litigation and to maintain the quality of provision, a controlled site is preferable with a peer-reviewing system.

It is important to realise that even if an author or institution decides to offer their material freely it should still contain a copyright statement. Otherwise an unscrupulous vendor could steal the work and include it in their own, copyrighted material. This would then become protected for commercial benefit even against the original author! Apart from the traditional form of copyright various others are available having greater or lesser freedoms. These are sometimes referred to as *open source licences* (see reference 15 and reference 5 for a UK version). The organisation Creative Commons (reference 5) offers a flexible copyright for creative work. The licence can be tailored as desired by the author, songwriter, musician, film-maker or educator. This enables more open access but within the limits as specified. Web sites are available for publishing such work on a not-for-profit basis.

5 THE DEVELOPING WORLD

There is no doubt that there is a major inequality in the benefits obtained from world resources between the established nations of the West and the underdeveloped nations of the rest of the world. In the UK, access to the internet was one of the early policies implemented by "New Labour" when coming to office. Information technology and access to the *information super highway* were seen as important for the development of the disadvantaged. All schools were given money to install computer networked facilities, as were drop-in centres for retraining the unemployed. This has become a common approach to educational development and training around the world.

In an article in Development Gateway (reference 6) on intellectual property rights and ICT for development, John Daly raises the following issues:

- Should national policies encourage the promoting of non-proprietary versus proprietary software?
- Are public subsidies appropriate for the development of free and open-source software?
- Are stronger IPR controls needed in order to protect the musical and other artistic rights of the developing countries for international e-commerce?
- Would a more closed approach to IPR help the developing countries to promote their own innovation and economic development?
- How is the protection of the IPR of an individual or an institution to be reconciled with basic human rights?

The Report of the UK Commission on Intellectual Property Rights describes these issues in more detail, reference 4. The home page states:

The Commission was set up by the British government to look at how intellectual property rights might work better for poor people and developing countries. The first Commission meeting was in London on the 8th-9th May 2001, and the final report was published on 12th September 2002.

The Report also provides useful supporting material.

Finally, Professor Christopher Colclough, recently voiced a serious concern of many developing countries (reference 22). Students from developing countries attending degree courses in the developed world at full cost to their own country are being enticed to stay in the developed country after graduating. Overseas students should not be viewed as a source of brain power for the West, nor should western governments see bringing international students from the developing countries as a business opportunity.

6 OPEN OR RESTRICTED ACCESS COURSEWARE - SOME OF THE ISSUES

The philosophical debate which is at the heart of free disclosure of learning materials is:

If the essence of a university is that of a repository for intellectual material discovered, researched and sifted by scholars for dissemination to society for the common good and, if this is paid for by public funds, why should a charge be made?

There are a number of issues that can be raised concerning the publication of free courseware. Some of these are highlighted below. However, this list is not exhaustive.

6.1 Is the Development of Courseware Cost-effective?

It has been estimated that the academic staff time needed to devise courseware for the equivalent of a one-hour traditional lecture is of the order fifteen hours. (It can be considerably more if interactivity or animation are involved). A traditional lecture at an equivalent level would require about four hours of preparation time, indicating that the academic staff time required to prepare courseware is of the order four times that of conventional lectures. This does not include the costs of IT support staff, IT hardware or any specialist licences that need to be obtained for embedded demonstrations. The size of the budget for the MIT project is confirmation of these costs.

In view of the colossal outlay, the question to be asked is whether this is the best use of large quantities of educational resource.

6.2 Is the Courseware the Qualification?

The question that often comes to the minds of university managers is:

If the materials for a complete degree course are published as open courseware, some 'back-street', overseas agency could market "equivalent" degrees locally, falsely claiming endorsement by the originating institution. They might even issue certificates purporting to come from the originating institution.

The answer, of course, is that the degree qualification is issued only by the originating institution. Equivalent degrees awarded elsewhere based on using the same material would not have the same value and if copies of certificates were issued, they would be forgery. However, remote students might use the courseware as a general resource for building a portfolio of their experiences, albeit without any official assessment.

6.3 Why Bother to Attend the Institution if the Materials can be had for Free?

This question might be asked by someone wishing to do some continuing professional development but not wanting a qualification.

The answer, of course, is that the full educational experience includes the lecturer, interaction with other students and all the university facilities.

There is evidence that some students expect to pay less for distance learning modules than for being on campus because they are not enjoying the full experience. It has been argued by some students that if a course is delivered both remotely and via the

internet, with the courseware open for anyone to view, then the remote fees should only be enough to cover administration, tutor contact and assessment.

6.4 Is Free Courseware going to Constrict the Industry?

Clearly, if an institution funded the production of a definitive set of modules to a high standard which were then made freely available on the web, no other profit making organisation could compete. This raises the following questions:

- Would resources continue to be available to keep the freely available material current?
- Is there a commercial market for an even better set of modules?
- Would commercial vendors wish to invest in some product knowing that a free version might appear?

Renato Iannella of IPR Systems (see reference 8) argues for the management of digital rights as a new approach rather than adopting a policy of 'enforcement or avoidance'.

Generally, the question to be considered is whether the production of open courseware is in the best interests of the education of students in the long term.

6.5 Is Litigation an Option?

In view of the comments made in section 4.1, to bring about a successful prosecution against illegally distributed, non-open courseware may not be viable. The problem is similar to that of implementing prosecution for the illegal photocopying of textbooks. If it is felt that prosecution is not viable is there any point in having restricted access software?

6.6 Litigation Against the Provider

It is not uncommon for providers of course materials to unwittingly include copyrighted or other IPR materials in their productions. Commonly, when this occurs and infringement is notified to the courseware provider amendments are made and the offending item(s) removed from the published material. (Accidental infringement should not result in litigation). Such removal may of course mean some inconvenience to the students while suitable alternative material can be substituted.

However, if the courseware is open then the problem is compounded. Suggested problems that might arise are:

- Once material has been released onto the web there is no means of recall and probably no absolutely reliable data on who has obtained copies. This potentially exposes the provider to legal damages by a creator whose copyright has been infringed. Furthermore, some agencies have recently started to archive old copies of web sites for future sociological use. This means that offending material could remain accessible.
- If there is no *gatekeeper* system for the courseware, removal of any offending material from an official 'library' site might not be possible and so compounding the potential damages described in the previous point.
- If the courseware is completely *open* (no control and made freely adaptable) then any copyrighted material belonging to a third party would, when erroneously published, appear to be no longer copyrighted and so could

arguably be adopted and adapted by anyone. This could lead to litigation against the courseware providers by the original creator for loss of copyright.

- In addition, the infringed copyright work of the creator might be modified and re-released exposing the unwitting original creator to libel charges or similar, which could subsequently be brought back against the courseware providers.
- Without control of the courseware on an official site the moral rights of any creator are removed.

As highlighted above, having an open access but copyrighted 'official' site provides the opportunity to withdraw any material that has infringed copyright. Then, since the latest release would be always on view at the branded site, the opportunity for the unscrupulous to try to continue the propagation of the flawed material is diminished, which may be sufficient to partly or wholly pacify the infringed creator.

Rather than following the open software approach of the Linux operating system, copyrighting open courseware in a manner similar to the *creative commons* initiative would provide some legal control over the adaptation of the courseware by the unscrupulous. (This should be done in all cases even with a philanthropic venture, see section 4.5.) However, the only way to be absolutely certain not to infringe another's copyright is to exclude all non-original material from the production. Even this may not always be straightforward and may involve a risk management approach. Challenges could always end up as a legal adjudication. It may be necessary to have a HEFCE sponsored legal *handbook* of international copyright legislation for open courseware authors so as to clarify some of the finer issues.

6.7 Is Terrorism an Issue?

In view of the rise in acts of international terrorism, are there some educational materials better not available via the web? If so, how would policing be carried out to ensure undesirable individuals (or nations) did not gain access? A recent example is the use of genetic engineering to develop a virus to attack a specific ethnic group.

7 SUMMARY AND CONCLUDING REMARKS

As the practice of offering open access courseware develops the issues raised above (and no doubt others still to emerge) will become more focussed in terms of their relative significance. The table below is a summary of most of the points developed above.

Finally, it is felt that a nationally recognised facility is probably the most efficient way to develop an open courseware programme for national and international use, in a similar manner to that of the establishment of the Open University, and perhaps partnered in some form with the British Council. Funding would come from national and international governments, industry and philanthropic trusts and benefactors. Contributing authors and institutions could be acknowledged so that moral rights and branding are not lost. Copyright infringement liability could be formally apportioned between parties. A central legal facility could be maintained for advice and any resulting litigation for or against the contributing partners.

FOR OPEN COURSEWARE	AGAINST OPEN COURSEWARE
A university might openly offer whole or part-modules from a selection of its courses as an international advertisement of its own status and that of the course to which the modules belong.	Creation and maintenance costs are high for good quality material. It is only sustainable if the income stream is preserved.
The releasing of open courseware into the international community may spur others on so as to produce a top quality world resource that would encourage economic growth, improve health care and improve international relations.	The early release of poor quality courseware might constrict the market for the commercial production of high quality material.
Large amounts of open courseware might encourage the formation of local universities in the developing countries and reduce their brain-drain.	Students would miss the experience of travelling to the host country.
Contributions could be accepted from a world-wide base of experts similar to the development of the Linux operating system. International peer-reviewing would ensure high standards and currency of material. This was one of the hopes of the MIT project.	International peer reviewing would be expensive to initiate and maintain for good quality course evolution. Policing might be necessary to ensure sensitive material likely to promote terrorism etc did not get published. But this could be difficult to organise.
International litigation might be virtually impossible to implement so why try to have non-open courseware?	Courseware could have concealed elements within it that reduce its value considerably without a formal contract with the host institution.
Litigation could be facilitated by further international agreements and executed only against commercial or other organisations out for profit. This might overcome the restrictions placed on individuals in the underdeveloped countries who break copyright law.	Partial relaxation of international IPR law might be detrimental to under-developed countries in that their own material might be acquired by more commercially powerful organisations and exploited without return.
Assistance could be given to the developing countries by making freely available degree courses of specific benefit such as healthcare, education and engineering. This could be done through philanthropic, privately funded projects or by the establishing of an international e-university supported by western governments as part of their foreign aid programmes.	International collaboration would be expensive to set up. International peer reviewing involving the end-users would be ideal but again expensive to initiate and maintain for course evolution.

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