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How can OpenCourseWare improve teaching?

Lessons learned from MIT

As of late 2007, the Massachusetts Institute of Technology (MIT) has made the content of over 1800 of its undergraduate and graduate courses freely available online on its OpenCourseWare website^{1,2}. Anyone with an Internet connection has access to lecture notes, assignments, exams – sometimes even videos of the lectures. What's more, anyone can reuse or remix the material for their own purposes. When MIT first proposed the program in 2000, it was still very unusual for academic institutions to openly share information online. This was a time before Open Access publications - whatever information was available was hard to find or hidden behind paid subscriptions³.

Currently more than one hundred higher education institutions worldwide participate in the OpenCourseWare consortium⁴, but MIT is still the front runner: They have put more course materials online than any other university, and because the program has been running for several years we can look at some of the bottlenecks and achievements of MIT's OpenCourseWare to evaluate whether it's beneficial for other universities and lecturers to make their course materials available through such a program.

Who has access to what information?

It's not unusual these days for a course coordinator to run a course website with the syllabus and assignments. They might even post class notes after the respective lectures. These websites are meant purely for students who are enrolled in the course, and are sometimes only accessible to registered students⁵. If the material is posted on a public website, anyone can find it and see what the course is about. But these random website visitors are not actively encouraged to look at the class material -- they stumble on it by accident. And if they are lecturers themselves, they are certainly not allowed to just grab these syllabi and lecture notes from the web and use them in their own classes.

Now here is where OpenCourseWare is different: all course materials are posted on a centralized website, meant for anyone to find⁶. But it goes further than that: all material is distributed under a Creative Commons license, which allows other educators to take entire lectures or fragments of courses and use them in their own classes, as long as they properly credit the original creators and share their "remixed" materials under the same license⁷.

Who owns the material?

Even though anyone is free to use the materials published on OpenCourseWare, the copyright is retained by the lecturer, MIT or contributing students (in the case of completed assignments)⁸. Of course that means that the course documents can't contain otherwise copyrighted material. While it is often permitted (under the US fair use policy) to use images from books or movies in a classroom setting, it is certainly *not* legally allowed to republish them online⁹. These copyright issues formed the main bottleneck that MIT encountered in running OpenCourseWare¹⁰: Permission from copyright owners had to be asked before anything could be put online, and university lectures that used slides with images from a textbook, cartoon examples, or fragments of movies had to be stripped of these copyright infringing materials.

Who uses OpenCourseWare?

Other than students enrolled in the courses at MIT, the OpenCourseWare lectures are accessed by self-learners (people who are curious about a topic or preparing to go back to school), by students who are taking similar courses at other institutions, or by lecturers from other courses or other institutions¹¹. About half of the educators who visit OpenCourseWare adapt the material for use in their own classroom. This raises the question: why should lecturers bother to help their colleagues and teach students who are not even in their class? What are the benefits for faculty in publishing their entire course content for the world to see?

Does OpenCourseWare affect class attendance?

Before considering the benefits of putting course material online, let's rule out one obvious potential drawback. When MIT first announced their plans for OpenCourseWare, many of their lecturers feared that students would no longer come to class if all the material was available on the web. However, in the past few years of using OpenCourseWare attendance has not dropped¹². This might be a result of stricter guidelines for students: many course syllabi found on OpenCourseWare assign part of the final grade based on class attendance¹³.

Open House 24/7

At first glance it might seem counterintuitive for an elite academic institution to give their teaching materials away for free. But, as MIT is quick to point out, OpenCourseWare is no replacement for an MIT education: it doesn't grant degrees and doesn't allow access to its faculty².

In a way, OpenCourseWare is a continuous Open House. While most institutions let high school students visit for a few days a year, or let the public in on special public lectures, MIT's virtual doors are always open. And the transparency successfully attracts students, too: in 2005, one third of freshman students said they were influenced by OpenCourseWare in their choice for MIT¹¹.

At a regular Open House, universities lure students with lunches, gift bags, and top-notch research and recreational facilities. MIT's OpenCourseWare attracts students with the content of their courses and the quality of the lecturers. They even made a short promotional video for animated professor Walter Lewin's Physics 8.01 course. The video has been watched over 120,000 times in three months on YouTube, collecting comments such as "*This professor seems awesome. Who knew physics could be so fun?*" and "*I should have applied at MIT... Dr. Walter Lewin is great!*"¹⁴ Lewin is MIT's token lively lecturer, but the more conventional lecturers of Introduction to Biology 7.012 have also received great praise¹⁵.

The impact on teaching

The pressure of having one's course put in the limelight and the need to remove copyrighted material from slides or handouts means that lecturers have had to re-evaluate all their course material before submitting it to OpenCourseWare. According to MIT's statistics, 32% of faculty who participated in OpenCourseWare have said that it improved the quality of their teaching materials¹¹. Because MIT uses OpenCourseWare for all its courses, lecturers can also see what their colleagues are teaching, and they have used some of that material to review in their own class¹¹. This makes courses less isolated, leading to a more coherent overall university education.

Conclusion

While the implementation of OpenCourseWare asks for extra work from its faculty in preparing high quality legally distributable course materials, this works as an incentive to produce better teaching materials. As a result, making course materials available online can not only raise an institution's visibility, but also its quality¹⁶.

Footnotes and sources

- ¹ MIT OpenCourseWare – Our History <http://ocw.mit.edu/OcwWeb/web/about/history/index.htm> (Retrieved on April 4, 2008)
- ² Official video for the MIT OpenCourseWare 1800 event (celebrating the 1800th course online): “Unlocking Knowledge, Empowering Minds: A Milestone Celebration” <http://www.youtube.com/watch?v=tbQ-FeoEvTI> (Retrieved on April 4, 2008)
- ³ The phrase “Open Access” originates from the Budapest Open Access Initiative, officially dated February 2002, and initiated at a conference in December 2001: <http://www.soros.org/openaccess/read.shtml> (Retrieved on April 4 2008)
- ⁴ Retrieved from OpenCourseWare Consortium <http://www.ocwconsortium.org> on April 4, 2008
- ⁵ eg. the Blackboard site for THE500
- ⁶ MIT’s courses are listed on <http://ocw.mit.edu/> Worldwide institutions using OpenCourseWare can be found at <http://www.ocwconsortium.org>
- ⁷ More information at the Creative Commons website: <http://creativecommons.org/> and MIT’s Creative Commons license: <http://ocw.mit.edu/OcwWeb/web/terms/terms/index.htm#cc> (Retrieved April 4, 2008)
- ⁸ Retrieved from <http://ocw.mit.edu/OcwWeb/web/help/faq3/index.htm> on April 4, 2008
- ⁹ Under US law classroom teaching falls under “fair use” of copyrighted materials, but redistribution does not. See here for an explanation of fair use: <http://www.copyright.com/ccc/viewPage.do?pageCode=cr10-n#fairuse> Canada does not use fair use, which you can read about in this blog post by Dr. Michael Geist, a proponent of fair use in the Canadian copyright system: <http://www.michaelgeist.ca/content/view/1637/125/>
- ¹⁰ More information on OpenCourseWare and copyright can be found in these notes taken by an attendant of a presentation on OpenCourseWare at the North East Regional Computing Program (NERCOMP) conference (March 10-12 2008, Providence, Rhode Island): <http://ficial.wordpress.com/2008/03/14/nercomp-session-copyright-in-opencourseware/>
- ¹¹ Found in “2005 Program Evaluation Findings Report MIT OpenCourseWare (June 5, 2006) available at http://ocw.mit.edu/ans7870/global/05_Prog_Eval_Report_Final.pdf
- ¹² Retrieved from http://p2pfoundation.net/Open_Courseware_Initiative on April 4 2008
- ¹³ Retrieved from <http://ocw.mit.edu> on April 4 2008
- ¹⁴ Walter Lewin’s promotional video on YouTube: <http://www.youtube.com/watch?v=7Zc9Nuoe2Ow> (retrieved on April 4 2008)
- ¹⁵ OpenCourseWare site for Introduction to Biology 7.012: <http://ocw.mit.edu/OcwWeb/Biology/7-012Fall-2004/CourseHome/index.htm> Discussion forum for the course: <http://mit.ols.usu.edu/courses/showforum?ForumID=179> and the first lecture by Dr. Robert Weinberg on YouTube: http://www.youtube.com/watch?v=_m4Gvu90Ydw
- ¹⁶ The OpenCourseWare Consortium has information for institutions who want to make their materials accessible through OpenCourseWare: http://www.ocwconsortium.org/index.php?option=com_content&task=view&id=13&Itemid=27