Assignment 3

The Movement Towards Open Courseware

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Introduction

The demand for distance education continues to increase at a rapid rate. In Fall 2005 almost 3.2 million students took at least one higher education course online, a 35 percent increase over the 2.3 million students enrolling in online courses in Fall 2004 (Allen & Seaman, 2006). At the author’s local institution, 26 percent of total enrollments for Fall 2006 were for online courses compared with 20 percent of total enrollments in Fall 2005. With this demand comes the need for quality online course materials. Moving a traditional seat-based course to the Web involves much more than simply taking lecture notes and placing them online. Web course developers must take into consideration the appropriate delivery methods of the course materials as well as methods for assessing course outcomes. When designed and taught using pedagogically appropriate methods, Web-based courses will rival and many times surpass their seat-based counterparts in both course quality and in learning outcomes (Vroeginday, 2005; McLaren, 2004; Shachar & Neumann, 2003.)

But is it necessary for the materials used to teach Web-based courses to remain available only to students that register for these courses? When students register for an online course they are not only paying for the ability to interact with the content but also the ability to interact with the instructor and with fellow students. Registered students are paying for the myriad student support services that can include counseling and advising, access to library materials and services, access to professional and peer tutoring, access to services for students with special needs, career planning and placement, student clubs and functions, campus-based activities accessible only to students with an identification card issued by the institution, and many more. Formal enrollment in a course also places the final grade for that course into the student’s record which is then applied towards the requirements needed for
the awarding of a formal certificate or degree. The interaction with the content of a course is only one aspect for the formal enrollment in a college course.

The Massachusetts Institute of Technology (MIT) recognized a need for open access to Web-based course content. They recognized that the Web could be used to make content available to those who simply wanted the knowledge contained within the course rather than the total package of services available to formally enrolled students. Thus was born the idea of open courseware, or the sharing of academic content without cost and with minimal obligation.

This paper will examine the open courseware movement, from it’s beginnings at MIT in 1999 to the current state of open courseware as a global repository of course materials available from a number of higher education institutions. Ideas for implementing an open courseware initiative at local institutions will also be examined, including the initial steps for contacting faculty, installation of freely available management software, and development of policies and procedures.

**What is Open Courseware**

Open courseware is the educational content taken from credit-based higher education courses and made freely available to the general public. The content is made available using special software that first aggregates the content and then creates a navigable method for accessing the content over the Internet. The course content can be as simple as a course syllabus or as all-inclusive as lecture materials, supplemental readings, video presentations, book lists, pictures, images, instructor biographies, examinations with answers, assignments, and more. Most open courseware content will include at a minimum a course syllabus detailing the presentation of content and expected course outcomes as well as a suggested
reading list. The amount of content made available in any one course is usually decided by the faculty member and academic chair, and is usually based on formal institutional policy dealing specifically with open courseware.

MIT goes further in their definition of open courseware, stating that users may create derivative works by editing, translating, adding to, or combining them with other resources (Margulies, 2004). However, the use of MIT open courseware materials also obliges users to restrict their use to non-commercial educational purposes. Users must also attribute all materials to the originating institution or author, and republished materials must continue to be freely offered to others.

The most common uses of open courseware by students are to supplement the content of similar courses being taken at other institutions and as a method of study by self-learners unaffiliated with an educational institution. Open courseware is also used by faculty and course developers to supplement existing course materials when creating or updating course content.

**History**

The movement towards open courseware is credited to an initiative started by MIT in 1999. MIT Provost Robert A. Brown formed a committee composed of faculty, students, and administrators to provide guidance on how MIT should position itself for the upcoming demand for distance learning courses and programs. The resulting committee recommendations formed the basis for the MIT OpenCourseWare initiative, or OCW. MIT currently has over 1,500 courses in their OCW library representing 34 academic departments and all 5 MIT schools. The OCW goal is to have course materials from all courses being available by 2008.
The MIT OpenCourseWare site had over 20 million unique visits within a two-and-a-half year period beginning October 2003 (Kirkpatrick, 2006). In the month of February 2006 alone the site averaged over 36,000 visits each day.

The open courseware initiative has received significant grant funding from such philanthropic institutions as The William and Flora Hewlett Foundation and the Andrew W. Mellon Foundation, as well as technology companies such as Ab Initio.

**Current Status of Open Courseware**

The number of institutions creating openly available course content continues to expand both nationally as well as internationally. Utah State University won a $915,000 grant from The William and Flora Hewlett Foundation to fund development of an open source software package for open courseware development and access. The development efforts resulted in the creation of the eduCommons OpenCourseWare management system that supports Utah State University’s open courseware initiative. eduCommons is open source and freely available to other institutions needing an open courseware course management system.

Carnegie Mellon University has created the Open Learning Initiative which currently has eleven courses freely available online. The Open Learning Initiative offers courses in a wide variety of subjects including engineering, statistics, and causal reasoning.

The Bloomberg School of Public Health at Johns Hopkins University has the OCW project, offering 49 courses in health and environment. Other institutions with open courseware courses available includes the University of Michigan School of Information, Tufts University, Foothill-DeAnza Community College District (Los Altos, California) and Harvard University Law School’s Berkman Center for Internet and Society. There are many
other institutions that have either started initiatives to make course content freely available or that are now offering open courseware.

The initiative has expanded internationally as well. Japan recently established the Japan OCW Alliance (now the Japan Opencourseware Consortium) and hosted the International Conference on Opencourseware 2006 in Kyoto Japan in April 2006 (JOCW, 2007). Six Japanese universities were founding members. China has developed the China Open Resources for Education (CORE, 2007) that closely follows the MIT model of open courseware. Other countries with open courseware initiatives include Austria, Canada, Columbia, France, Korea, Mexico, Netherlands, Portugal, Saudi Arabia, South Africa, Spain, Thailand, United Kingdom, Venezuela, and Viet Nam (Open Courseware Consortium, 2007).

**Benefits of an Institutional Open Courseware Initiative**

The arguments for the adoption of open courseware are convincing, and they need to be. Institutional administrators as well as faculty may see such an initiative as nothing more than the wholesale giving away of knowledge. They may wonder why prospective students would want to come to campus when course content is being given away. They may also wonder how much of a drain on faculty time this will cause. The question will also arise dealing with the potential drain on distance learning course revenues, as well as how to deal with the potentially damaging issues of copyright, intellectual property, and fair use.

It is important that both administrators and faculty understand the many benefits that a well-planned and adequately-funded open courseware initiative can bring to institutions (Margulies, 2004). A successfully implemented initiative will allow educators to draw on existing content to supplement a range of courses. Students registered for credit-based courses can use the open courseware content to enhance existing course materials. Non-
student self-learners can use the open courseware content to increase personal knowledge that may possibly lead to enrollment in credit-based courses and programs.

Freely available access to course content can also be a valuable resource for community college districts. The implementation of an open courseware initiative provides easy access to educational materials, thus fulfilling the mission of most community colleges of providing access to educational opportunities for district residents. Open courseware can also be a showcase for innovative and exemplary courses, assisting other faculty in the improvement of similar courses as well as an effective recruiting tool by academic departments. Lastly, the availability of open courseware can provide easy access to quality course materials that can be used to enhance existing course materials, provide visibility for innovative work, as well as embracing an atmosphere of collegiality among colleagues.

**Open Courseware Software**

Credit-based online courses offered at higher education institutions will typically use a course management system (CMS) such as Web/Blackboard, Angel, Moodle or a locally developed system to manage course development, teaching, and administration. It has become quite difficult to create properly designed online courses using simple Web sites and 3rd party add-in software due to the complexity of multiple forms of media content as well as the seamless tracking of asynchronous interaction methods between students and instructor. Stringent requirements by regional accrediting agencies must also be adhered to by using established CMS systems for course development and delivery. Course content that is migrated to an open courseware system must remain easily navigable and coherently delivered for it to useful to end users. Finally, each course migrated to an open courseware environment must be tracked and maintained so the content remains usable, something that
becomes quite a task in itself when the potential for courses being migrated can number in
the hundreds or even thousands depending on the size of the institution. Consider that MIT
alone has over 1,500 courses in their OCI archives, while the author’s local institution has the
potential for adding well over 100 online courses.

One possible option is now available is called eduCommons. eduCommons is an
open source content management system developed by Utah State University specifically to
manage open courseware systems. eduCommons was developed with a $915,000 grant from
the Hewlett Foundation (Young, 2005). The Hewlett Foundation grant also stipulated that
Utah State University assist others that want to use the software for similar open courseware
initiatives. The eduCommons software simplifies the process of creating and managing open
source content by the use of a three step process that integrates the three roles of Producer,
QA, and Publisher (Figure 1):

Figure 1: Developing course content using eduCommon software (Center for Open Sustainable Learning,
2007)

When the course developer logs in using the role of Producer, the course home page
is set up and designed with introductory text and any special departmental logos. The course
home page is then created, with introductory text and graphics added that are specific to the
course. The course materials are then prepared for import into the course by adding an
instructor introductory page, syllabus, and generic course schedule, and stripping out any
unnecessary html code. The entire course is then zipped and uploaded into the previously
created course home page. Once uploaded into the course home page, the course undergoes
final edits to verify copyrights, links, and media streams. The course is then moved, or
“pushed” to the next phase: QA.

In the QA role, the course is verified in a number of areas such as intellectual
property, accessibility, course design, and spelling and grammar. Once complete, the course
then moves to the final development area, the Publisher Role.

The Publisher Role is where each course undergoes a final review in all areas. Once
all areas have been reviewed and approved, the course is published to the course home page
and made accessible to the general public.

The eduCommons software makes two additional roles available to institutions:
Administrator and Viewer. The Administrator Role has total access to all areas and can
perform any function within each role. The Viewer Role is for viewing only and cannot
interact with any part of the course development process.

**Getting Started**

Getting started in the establishment of an open courseware initiative is not as difficult
as it may sound. One possible method for implementation has been suggested by the Center
for Open and Sustainable Learning (COSL, 2007) and represented in Figure 2.. The
implementation process involves finding administrative and faculty support, implementing
the course management software, developing policies and procedures, developing 3-5
courses, use these courses to market the initiative to other faculty, finding additional support
resources, and developing additional courses.

![Figure 2: Implementation strategy (Center for Open Sustainable Learning, 2007)](image-url)
The process begins with the discussion of an open courseware initiative with institutional administrators. The aim is to create an atmosphere of understanding for the purposes of such an initiative and how it can tie in with institutional goals. Faculty should then be brought into the discussion. Select faculty that would act as champions of the initiative and that would be early adopters of the system.

The next step involves selection and installation of a software system capable of handling the operations involved in creating and managing open courseware. Here it is important to include personnel on both the technical side as well as the educational side. Ideal candidates for the educational side would be Web-based course designer/developers or someone familiar with the unique pedagogy of the online course environment.

The development of policies and procedures for the operation of the initiative can begin during the software installation phase. Policies are needed to establish staffing needs and duties, the course publishing process, definitions and guidelines dealing with intellectual property and content licensing, procedures for technical support of course developers and course users, evaluation and measurement, and five year goals and objectives for the open courseware initiative.

Conclusion

The open courseware initiative started by MIT in 1999 and subsequently adopted by several other institutions worldwide, can have a significant effect on access to quality course materials by everyone rather than only those enrolled in the course. The benefits can include access by faculty to enhance course materials, access by students to supplement course materials, and access by self-learners for personal knowledge and understanding. The drawbacks include the amount of time involved in implementing and maintaining such a
system as well as creating a positive environment among faculty, chairs and administrators to make such a system work within your institution.

Although the establishment of an open courseware initiative at your local institution can be a daunting task, the rewards for your institution as well as the citizenry you serve can pay off handsomely in the sharing of knowledge, course design, and goodwill.
References


