

Distance Education in North America: An Update

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Over the past decade, the Web has dramatically changed distance education in North America, greatly increasing the number and diversity of institutions involved in distance education, creating new institutions and models for institutional collaboration, and mainstreaming many facets of distance education into the fabric of traditional institutions. In the process, North American institutions, like their counterparts elsewhere around the globe, have begun to create a new pedagogy that uses the continually evolving new technologies to address the needs of a knowledge society.

Growth

One consequence of the rapid diversification of distance education because of the Web has been the creation of new professional communities. Institutions that had no history of involvement in previous kinds of open and distance education were not drawn to the existing professional institutions. Instead, they tended to create new professional communities. One of those communities is the Sloan Consortium, which grew out of the Asynchronous Learning Networks initiative of the Alfred P. Sloan Foundation. For the past decade, the Sloan Foundation has provided more than \$40 million in grants to institutions to stimulate use of Internet-based technologies to create access to education for both adult and traditional students. This work stimulated the creation of the Sloan Consortium. Through the Sloan Consortium (<http://sloan-c.org/>), the Foundation has sponsored annual conferences, a journal, the dissemination of best practices, and an annual survey of the impact of online learning in the United States.

The 2005 report, Growing by Degrees, illustrated the growing impact of online learning. It notes that, in 2004-05, enrollments in online courses grew over the previous year by 18.2% -- more than ten times the rate that the National Center for Educational Statistics projected for growth in the general postsecondary student population. Overall online enrollments increased from 1.98 million in 2003 to 2.35 million in 2004.

Not all of this increase reflects new distant students. Some degree—perhaps a significant degree—of the increase in online enrollments reflects rapid acceptance of online learning within the campus-based programs of traditional colleges and universities. The 2005 survey discovered that 63 percent of institutions that offer traditional classroom-based undergraduate courses also offer some online undergraduate courses; at the graduate level, 65 percent of institutions that offer classroom-based courses offer some online graduate courses.

However, the 2005 Sloan survey also suggests that an increasing number of colleges and universities are offering complete programs online, for both traditional and nontraditional students. Forty-four percent of institutions that offer campus-based master's degrees also offer at least one master's degree online. This is even more significant among two-year institutions—community colleges—in which part-time students constitute a large part of the traditional student population. Among these institutions, 72 percent identified online learning as part of their long-term institutional strategy in 2004-05 – an increase from 58 percent in the previous year.

The survey also suggests that online distance education is at the end of its initial start-up period. Asked “Is online education critical to the long-term strategy of my institution,” 58.4% of the institutions surveyed answered, “Yes.” The majority of

institutions also reported that online education has become critical to their long-term strategies. The response was highest among institutions that offer master's and doctoral degrees and institutions that offer associate degrees. The majority of traditional liberal arts colleges have yet to embrace online education.

New Organizational Relationships

While online learning is bringing many new institutions into distance education, it is also fostering new relationships among institutions. Education in the United States is organized at the level of the individual states. Several states have created new relationships among institutions designed around the use of online distance education to ensure that all residents have equitable access to important programs. Examples include Kentucky Virtual University (<http://www.kyvu.org/>) , the State University of New York's SUNY Learning Network (<http://sln.suny.edu/>) , which provides a common online delivery infrastructure for the 63 SUNY institutions; and UMASS Online (<http://www.umassonline.net/>) , which supports statewide and national delivery of degree programs offered by the member institutions of the University of Massachusetts System.

Other kinds of innovation are also appearing. One example is the Great Plains Interactive Distance Learning Alliance (Great Plains IDEA -- <http://www.gpidea.org>) , a collaboration among eleven major state universities that are both comprehensive research institutions and public institutions committed to service to their states. The alliance is an academic collaborative focused on "human services" disciplines and designed to allow these institutions to share students by allowing students admitted to one member institution to take courses online from other member institutions. Thus far, the initiative

has resulted in online degree programs in such diverse areas as community and economic development, gerontology, youth development, and family financial planning.

The use of the Internet is encouraging U.S. institutions to collaborate with colleagues internationally. An example is the Worldwide Universities Network (WUN -- <http://www.wun.ac.uk/>), a consortium of research universities that have begun to share resources and programs through online distance education. Originally, WUN included five U.S. institutions (University of California-San Diego, University of Illinois, Pennsylvania State University, University of Wisconsin-Madison, and University of Washington) and six institutions in the United Kingdom (Universities of Bristol, Leeds, Manchester, Sheffield, Southampton, and York). Additional universities have since joined from Europe and China. WUN has encouraged institutions to share access to complementary online programs. For instance, Leeds, Penn state, and Southampton all offer online Master's Degrees in Geographic Information Systems. Through WUN, arrangements were made to allow students from one of these institutions to take online classes from the others and to apply them to the student's degree program.

Transformation as a Trend

Over the past few years, it has become clear that online learning is having a transforming effect on American higher education. This can be seen in part by the rapid expansion in the number and type of institution delivering programs to nontraditional students through online distance education. However, even more dramatic is the impact of online learning on traditional campuses, where online learning is becoming a common feature in residential courses. "Hybrid" courses that combine online and face-to-face

elements and “blended” degrees that combine online and campus-based courses are the current front line of innovation.

The result of this diffusion of online learning is that the traditional distinctions between “distance education” and “resident education.” As geographic proximity ceases to be a defining factor in the relationship between an institution and its students, this line will continue to blur.

Two other factors will continue to stimulate this transformation. One is the emergence of a distinctive online education pedagogy that emphasizes active student engagement in researching content, analyzing information, and applying the results to problems, often in collaboration with other students. This pedagogy encourages the creation of new and more diverse learning communities. A second factor is the rapidly changing economy, which has put significant pressure on the need to give current working adults access to educational programs that will help them remain competitive. This latter factor is especially apparent in community colleges and in the growth of online professional master’s degrees and postbaccalaureate certificate programs among comprehensive research universities.

Technological Innovation

Transformation is also being driven by new technology applications that can be used as easily to enhance a campus-based class as they can a distance education class. The use of BLOGS and Wikis allow students and faculty members both settings to create new kinds of learning communities. Podcasts allow faculty members to keep students take advantage of campus visitors, conference discussions, and so forth.

The combination of these changes in organizational structure, institutional sharing, and new technologies is moving an increasing number of U.S. institutions to give serious consideration to what has already emerged internationally: the development and sharing of open educational resources (OER). The remainder of this paper will report on several U.S. institutional initiatives in OER that may signal a new trend.

OER Overview

There is no question that the topic of Open Educational Resources is gaining significant profile in the United States. This is reflected in the growing number of open courseware and OER projects being launched at colleges and universities, foundation-supported projects, journal articles, blog postings, and conferences. This trend follows on the heels of increasing acceptance and use of open-source software in higher education.

While dozens of colleges and universities in the United States are involved with OER projects, a relatively small number are commonly referenced, including the Massachusetts Institute of Technology (<http://ocw.mit.edu/>), Rice University (<http://cnx.rice.edu/>), Utah State University (<http://ocw.usu.edu/>), Carnegie Mellon University (<http://www.cmu.edu/oli/>), Johns Hopkins (<http://ocw.jhsph.edu/>), Notre Dame (<http://ocw.nd.edu/>), Tufts University (<http://ocw.tufts.edu/>), and a few others. These institutions currently have made available 1,911 full courses, with MIT alone accounting for 81% of these offerings and the top three institutions accounting for 94% of the total. In addition to the 1999 courses posted at Rice University's, Connexions, there are 3786 individually identified modules, which are course components.

Although most of the other open courseware initiatives cited in this paper provide reasonably robust searching capabilities that allows the user to easily identify and

disaggregate content, Connexions is designed to support a community of contributors, allowing users “Editing-In-Place” permission to modify content and making contact information for content authors readily available. In the early stages of development it is clear that there are two distinct philosophies relative to flow of information. Some initiatives are designed for involvement and contribution from a wide community, while most are designed for one way sharing from the university to either faculty designing courses or learners interested in supplemental materials or self-learning. This division affects the nature of the software supporting the project, content licensing decisions, sustainability and funding modes.

In a recent report David Wiley (2006)ⁱ looked at different OER program models and sustainability. He used the MIT Open Courseware project, Rice University Connexions, and Utah State University Open Courseware project as archetypes for comparative purposes. This report and many of the other articles published in the Open Education 2006 proceedings, serve as a kind of standard of current thought for early adopters and a bellwether for the next round of adopters in the United States, reflecting a growing maturity and understanding of OER and sustainability relating to topics such as overall program model, the types of resources developed and the media used, nature of how content is reused, and the nature of the intended end users, potential funding models, and impact of national policy.

As with many relatively recent phenomena, common knowledge among institutions and professionals in the United States regarding the OER movement is somewhat limited to a community of interest that is growing in size and sophistication. In addition to college- and university-based OER projects a constellation of support,

consortia, and information-dissemination projects are growing, which also reflects a growing sense of importance and interest in the OER movement. The substantive presence of organizations and resources such as the Open Courseware Consortium (<http://www.ocwconsortium.org/index.html>) , OER Commons (<http://www.oercommons.org/>) , OpenCourse (<http://opencourse.org>) , the William and Flora Hewlett Foundation OER (<http://www.hewlett.org/Programs/Education/OER/>) , and Creative Commons Education (<http://creativecommons.org/education/>) is lowering the risk barrier for U.S. colleges and universities to participate in the OER movement by providing better understanding and support.

Institutional Involvement, Mission, and Licensing

A number of institutions have taken leadership as early contributors to the open educational resources movement. Although institutions such as MIT, Rice, Johns Hopkins, University of California-Irvine, Tufts, Carnegie Mellon, Notre Dame, and Utah State University, cite common themes for why they are involved with open courseware initiatives, they have operationalized their programs differently. Some of the differences that were outlined in David Wyles' (2006) overview of some open courseware projects, included scale of operations and goals, intended audience, and available funding. Some of the commonalities include a conviction that the open dissemination of knowledge and information is inherently good and an important contribution to stakeholders outside of the home institution. This theme was applied to humanity quite broadly and also to specific communities such as scholars in developing economies, health care administrators, life-long learners, and self-learners. In all cases there is an underlying assumption that their open courseware project was predicated on principles of free and

open distribution of content, which will reduce access barriers across organizations, cultures, and geography.

Features such as content quality and relevance, ease of access to the content, project sustainability, and ease of content use will certainly affect the successful implementation of project goals. Although each of these qualities is important and deserves treatment, in this paper we have decided to provide a brief overview of content licensing decisions as this decision will have long-term impact on the usefulness of the content, distribution patterns, and ultimately how successful the project will be in meeting its goals for open and free distribution. The usefulness of content will relate directly to how much freedom is accorded to the user of the content to adapt it and redistribute it given local needs and conditions. Given that most of the projects cited some global intent, local conditions where resources are to be used will vary widely in terms of language, distribution technology, intended outcomes, cultural acceptability, and economic reality. Given the global intellectual property regime currently in place, the nature of the license under which the content is distributed will have impact on the freedoms communicated to content users.

Of the eight projects reviewed, all used a Creative Commons based license. Three types of licenses were adopted across the group of programs. One program adopted the *Attribution* license, which reserves the fewest rights, six projects adopted the *Attribution - NonCommercial – ShareAlike* license, while one project adopted the *Attribution-NonCommercial-NoDerivs* license, which, of the licenses adopted by the group, is the most restrictive. The Tufts OpenCourseWare project modified the base

license and retitled it the *Tufts Open Courseware License 1.0*. An overview of the licenses adopted is provided below in *Table 1. OCW Project and Adopted License*.

Open Courseware Project	Creative Commons License
Rice University, Connexions	Attribution
MIT OpenCourseWare	Attribution - NonCommercial – ShareAlike
Johns Hopkins, JHSPHOPENCOURSEWARE	Attribution - NonCommercial – ShareAlike
Tufts University OpenCourseWare	Attribution - NonCommercial – ShareAlike
Carnegie Mellon, Open Learning Initiative (OLI)	Attribution - NonCommercial – ShareAlike
Notre Dame OpenCourseWare	Attribution - NonCommercial – ShareAlike
Utah State OpenCourseWare	Attribution - NonCommercial – ShareAlike
UC Irvine OpenCourseWare	Attribution-NonCommercial-No Derivatives

Table 1. OCW Project and Adopted License

The license adopted by Connexions provides the freedom for the user to share the content, which includes the right to copy, distribute, display, and perform the work and to make derivative works provided that the user attributes the work in the manner specified by the author or licensor and makes clear to others the license terms of this work. The license adopted by a majority of the projects transfers the same rights to sharing and modification, but adds a restriction on commercial use such that the work may not be used for commercial purposes. UC-Irvine OpenCourseWare adopted a license that imposed a further restriction prohibiting derivative works so users may not transform or build upon the content that UC-Irvine has licensed and distributed.

As the open courseware projects mature it will be worthwhile for institutions launching new open courseware projects to gauge the impact that licensing arrangements have on meeting project goals related to free and open use of content. Several communities within The Pennsylvania State University, including the Penn State World

Campus (<http://worldcampus.psu.edu>) are starting a dialog about launching open courseware projects and how the considerable experience in designing and developing online course content and courses can be leveraged systemically to help ensure dependability and usability of the content from a learning design perspective.

Early proposals and proofs of concept have lent toward adopting a license that places few restrictions on the user allowing for the creation and distribution of derivative works and commercial use. The impetus behind these leanings is the belief that a license that prohibits derivative works will unacceptably restrict the usefulness of the content in terms of localization while including a non-commercial restriction will place an unacceptable dampening affect on adoption of content in developing societies where sustainability is predicated on the development of micro enterprises or where distribution and labor costs have to be recuperated.

Opportunities, Challenges, and Motivations

The benefits and opportunities of open educational resources for open, flexible, and distance learning institutions will be in large measure predicated on the mission and core values of the institution and the goals of the OCW project. Many of the examples of US institutions with established or fledgling open educational resources projects are not traditional open education providers cut from the same fabric as institutions like the Open University UK (<http://www.open.ac.uk/>), The Open Polytechnic of New Zealand (<http://www.openpolytechnic.ac.nz/>), Indira Gandhi National Open University (<http://www.ignou.ac.in/>), and many others whose primary mission is to reduce access barriers to education including providing open admissions, flexible learning pathways, reduction of constraints based on time and geography, and affordability, while

maintaining high standards of academic quality. In the US context an organization such as the Penn State World Campus has a commitment to flexibility, which it can articulate through the use of information and communication technologies, but may not be in a position to enhance access through open admissions, flexible learning pathways through independent learning options, or low financial burden to prospective learners.

From the institutional perspective, there is some benefit to being an early participant in the open educational resources movement through recognition as being an innovator and displacing the notion that the institution's principal value as a teaching institution is tied-up in its course content, rather than its faculty, interaction, services, library resources, community in general, and reputation as a granter of certifications. As an organization that has a commitment to access and the development of human capacity, contributing courseware and learning materials for open and public use is one means of reaching institutional objectives. In addition, participating in the larger OCW community and making resources available with the appropriate license can potentially increase the quantity and quality of the materials available for your own use, enhancing quality and reducing design, development, and production costs.

Perhaps the most important potential opportunity for institutions is the impetus for developing an open internal dialog about open educational resources. Through this dialog the institutional players can reflectively develop a better understanding of how they view their role in a larger community, their institution's commitment to social wellbeing, their relationship to colleagues at other peer institutions in the US and in developing societies, the nature of competition in higher education, and the fundamental nature and value of information, knowledge, and the academy. To what extend this

dialog occurs is not known, but there is growing evidence that some institutions are engaging and moving forward with OCW projects.

The swelling numbers of online learning programs and courses, cited at the beginning of this paper, point to a large and growing amount of digital content potentially available for distribution under a license that promotes open access. The extent to which content is made freely available will be determined by institutional orientation relative to the freedom of knowledge and perceived business impact. The extent to which open educational content will be distributed and used, once made available, will be largely determined by the usefulness of the resources and the restrictions placed on use by formatting and licensing decisions. The dialog that is just starting at Penn State is at least starting from the premise that the more open the content, the more useful it will be, and the more worthwhile will be our investment.

Conclusion

The increasing diffusion of online distance education into the mainstream of U.S. colleges and universities is having a profound effect on the academic community, redefining access to education and influencing how institutions create learning communities among both students and faculty members, share faculty-created learning resources, and creating new opportunities for inter-institutional collaboration. The institutional community involved in online learning is increasingly rapidly, and the opportunities for collaboration between these institutions and their counterparts in other parts of the world is growing as well.

References

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