GAME CHANGERS

EDUCATION and INFORMATION TECHNOLOGIES

Edited by **DIANA G. OBLINGER**

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Game Changers: Education and Information Technologies

This book is available in its entirety on the EDUCAUSE website, at educause.edu/books.

ISBN 978-1-933046-00-6

FROM THE EDITOR

I would like to thank the many people who made this book possible, particularly Gregory Dobbin for managing the project and Karen Mateer for her research.

—Diana G. Oblinger

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Game Changers: Education and Information Technologies is published by EDUCAUSE, with generous support from Ellucian.

Cover and interior design by Michael Brady Design (michaelbradydesign.com).

CASE STUDY 15

The Saylor.org Model

Jennifer Shoop

Introduction

SAYLOR.ORG IS AN OPEN-ACCESS ONLINE-LEARNING PLATFORM that provides self-paced college-level courseware to the public free of charge. The site is funded and maintained by The Saylor Foundation, a 501(c)(3) nonprofit institution.

For the past two years, we have focused on building a suite of 241 courses across twelve high-enrollment disciplines. We have recruited over two hundred instructors to design each of our areas of study and their constituent courses so that they are grounded in tried-and-true pedagogical experience; tied to clear, measurable learning outcomes; comprised of top-quality educational resources; and geared toward independent learners.

We believe that our open courseware project is game changing in its scalability: because our courses are designed to be autodidactic and self-paced and all course content is cost-free and open-access, we can serve any English-speaking learner in the world with Internet access and a desire to learn.

Rationale for Our Approach

Each year, more than 200,000 qualified U.S. students are unable to attend postsecondary institutions due to the prohibitive cost of education.[1] Access to education on a global scale is even bleaker. We believe that education should be a right rather than a privilege, and that advances in technology have given us the tools to lower and even circumvent the barriers of access and affordability that have hindered many from pursuing postsecondary education.

Guided by this vision, we have aggregated, vetted, and supplemented existing online educational content to create open-access, web-based courseware tied to learning outcomes and supported by formative and summative

assignments and assessments. Our specific implementation plan was structured by several key discoveries.

The Future of Education Is Online

In the United States alone, around 4.3 million college students—over 20 percent of all college students—were engaged in distance learning in 2007,[2] and if metrics from high schools can serve as a rough proxy, it bears noting that blended education in secondary schools has doubled every year in the last three years.[3] In short, education is moving online, and we are rapidly learning to harness Web 2.0 technologies in order to administer education more widely and effectively to a variety of constituencies.

These estimates discount the substantial population of qualified students unable to afford college education who could be served by cost-free alternatives. Bolstered by the staggering traffic that open courseware sites such as MIT and Khan Academy receive, we believe that this population (and the public at large) is demanding cost-free, open-access educational resources.[4]

Looking outside the United States, we learned that more people lack access to safe drinking water than lack access to the Internet.[5] To have an impact on a global scale, we need to place open content online so that it can be accessed by anyone anywhere with an Internet connection.

A Wealth of Open Content Exists, But Is Disaggregated, Decontextualized, and Difficult to Assess in Terms of Quality

Existing content is "siloed," diffuse, and difficult to "actuate." We approached this problem in four ways:

- By training our instructors to locate and vet open content, an up-front investment that has paid off manifold in helping us avoid re-creating the wheel;
- By designing our course development process so that the framing and "stitching together" of resources is "baked into" the course structure;
- By permitting our professors to link to copyrighted content where no open content exists; and
- By dedicating staff to seek permission to host copyrighted content.

There Is Not Enough Existing Open Content to Cover the Majority of Our Elected Courses

In order to quantify and work around this problem, we made three strategic decisions:

- We begin all courseware development with highly detailed syllabi, or "course blueprints." By first identifying the learning taxonomies that a student must master, we can identify and quantify gaps in content.
- We permit our consultants to link to external sites.
- We commission the development of content only where none exists.

Overview of Our Model

Our course development process has been iteratively designed around the observations just outlined as well as best practices gleaned elsewhere.

The first step of our design process involves the recruitment and training of college instructors. Our online training module teaches professors to find, vet, and organize open content in a structured, intuitive format modeled upon the traditional college course. This module primes professors in the OER space, acquaints them with tools for finding open content, introduces them to templates and formatting guidelines, and provides basic instructional design training. Guided by this training, our professors conduct a deep search for open content. They canvass the web for openly licensed materials and, where none exist, link to open-access content. They then conceptualize a course by laying out a detailed "blueprint," or set of course-specific, outcome-aligned learning taxonomies. Finally, they pair the blueprint with the open resources discovered earlier and create new content to paper over gaps, including a standard final exam and various formative and summative assessments and assignments. The course is then subjected to extensive editorial review prior to entering a peer-review process, in which three other professors weigh in on the quality and scope of the course and its materials.

Once a course has been edited and uploaded, we have a dedicated permissions team reach out to the individuals who retain copyright to the "open-access" content to which the course points. We encourage copyright holders to adopt an open license or grant us permission to host the content locally.

Evidence of Effectiveness

Because of our open-access approach, we are hindered in the amount of data we can collect. At present, our strongest evidence is anecdotal. In two recent exchanges, we received the following unsolicited feedback:

> [Saylor.org] is so helpful and [I] wish more people knew about it. I think there should be a way to tell different professors and institutions, 'Hey, go to saylor.org and you literally have a cyber teacher.'[6]

> I am a Malaysian who holds an engineering degree. I am interested in philosophy and history but couldn't study from the Internet without guidance because the information out there is simply too much. I tried to look for master courses [in which] to enroll but I don't have a huge sum of money reserved for education. Even if I [could] get a loan from the bank, most of the master courses require a relevant first degree. I am thankful that I found Saylor.org, which gave me a guideline on what to study, and open[ed] up . . . whole new channels of great sources.[7]

Challenges Encountered

We have encountered four major challenges in the process of developing our courseware and promoting its use:

Combating Link Rot

We struggle with the stability of our course materials. Because we link to a variety of external sites, we are constantly patrolling our site for link rot and requesting that our consultants find or create replacement materials. This is costly and frustrating, as entire courses can "go down" over night. We combat this issue through our permission initiative and the funding of replacement content, but it remains a challenge.

Developing Assessments

We grapple with the following assessment-related issues:

1. How do we develop sophisticated assessments to be administered in an online, unproctored setting? What sorts of "checks" do we need to put in place?
2. How do we handle assessment in courses tied to critical reading and writing skill development while maintaining our commitment to being scalable and cost-free?
3. How do we reach all interested learners, even those in low-bandwidth areas, while developing more sophisticated assessments? Adaptive assessments are costly to create and may be restricted to students with secure Internet access.

Driving Use and Adoption

We learned that in developing countries, librarians are the best contacts for disseminating open content and promoting open courseware. However, identifying and communicating with these individuals is difficult. Within the United States, we are still green in our efforts to identify and reach out to students unable to afford college.

This challenge is tied to issues of credibility: students want to know they can trust our materials and want to receive a credential to demonstrate course completion. We are cultivating partnerships with accredited institutions and have seen some traction among the founding institutions in OER University (OER-U). We plan to be early issuers within the Mozilla badges system, which could change the way in which institutions recognize and transfer credit, especially (initially) in prior learning assessment and recognition (PLAR) programs. We are still a long way, however, from securing a broad base of users.

Applicability/Replicability to Other Institutions or Programs

Our program is applicable/replicable to other institutions in three key ways.

Saylor Courseware Can Be Incorporated into Other Programs/Recognized for Transfer Credit

Our courses can be used in a variety of ways, but we see particular promise in working with organizations willing to issue transfer credit for Saylor courses. Initial talks with members of the OER University appear promising, but we also foresee that our courses could be of profound use to community colleges, which are seeing unprecedented demand while also coping with cost-cutting measures. On a smaller scale, we publish all of our content under an open license (CC BY 3.0) so that it can be adapted and remixed for use elsewhere.

The Saylor.org Platform Can Publish Courses for Institutions without a Public-Facing Learning Management System

We are pleased to publish courses from other organizations on our site. We have already adapted and published many of the Washington State Board for Community and Technical Colleges' "Open Course Library" courses, which were previously hosted in a proprietary LMS inaccessible to the public.

Our Course Development Model Can Be Useful to Other Institutions with Similar Online Courseware Plans

We have shared our development model with other programs, and several of those (including the Washington State Board for Community and Technical Colleges) have borrowed from our model and adapted various elements to suit their own needs.

Web-Based Supplement

We encourage readers to view our "Connecting the Dots" video (http://www.youtube.com/watch?v=yZzPZY5pSUg), which provides a virtual tour of our site as well as an overview of our course-development process and plans for the future.

Notes

1. Open College Textbook Act of 2009, S. 1714, 111th Cong. (2009–10) (introduced by Sen. Richard Durbin, September 24, 2009).
2. U.S. Department of Education, *The Condition of Education 2011* (NCES 2011-033), Indicator 43 (National Center for Education Statistics, 2011).
3. According to a recent iNACOL webinar, blended postsecondary education has risen from 8 percent in 2008 to 16 percent in 2009 and 30 percent in 2010.
4. Consider, for example, the tremendous popularity of the open-access Artificial Intelligence course that two Stanford professors are offering. Some reports indicate as many as 70,000 signed up to take the course.
5. The International Telecommunication Union's annual "Facts and Figures" report indicated that one-third of the world's 7 billion population (roughly 2.3 billion individuals) have access to the Internet (see International Telecommunication Union, *The World in 2011: ICT Facts and Figures* [October 25, 2011], http://www.itu.int/ITU-D/ict/facts/2011/material/ICTFactsFigures2011.pdf); meanwhile, according to the U.S. Centers for Disease Control and Prevention, 1.1 billion people still lack access to safe drinking water (see U.S. Centers for Disease Control and Prevention, *Safe Water System: A Low-Cost Technology for Safe Drinking Water* [March 2006], http://www.cdc.gov/safewater/publications_pages/fact_sheets/WW4.pdf.
6. Anonymous student, e-mail message to Saylor Foundation, November 5, 2011.
7. Anonymous student, e-mail message to Saylor Foundation, November 8, 2011.

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