

Measuring our Impact: the Open.Michigan Initiative
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Abstract

The Open.Michigan initiative has been producing and promoting high quality Open Educational Resources (OER) from the University of Michigan (U-M) and its partner institutions since early 2008. As the initiative refines its global education mission, it is imperative that we understand the value the initiative adds to U-M and to the global learning community. In order to ensure sustainability and effective growth, Open.Michigan is currently developing a strategic plan and assembling a set of metrics to evaluate its efforts associated with this plan. These efforts will ensure Open.Michigan continues to adapt to an evolving educational landscape and continues to anticipate the needs of our community members. Over the last three years of Open.Michigan's operation, it has gathered and analyzed a limited set of data for specific activities and goals. The current evaluation project aims to comprehensively examine the activities of Open.Michigan and determine its overall impact at U-M and in open education. It marks the start of a continual evaluation of Open.Michigan's activities into the future.

Keywords

open educational resources, evaluation, strategy, impact, performance indicators

Introduction

As the Open.Michigan initiative refines its global education mission, it is imperative that we understand the value we add to U-M and to the global learning community. This paper outlines our progress toward illustrating the impact of Open.Michigan through the development of a strategic vision for the initiative and our roadmap to enacting this vision by researching, planning and implementing a set of goals and objectives. It also highlights examples of growth and activities at Open.Michigan over the past three years. The outcomes from this effort will help Open.Michigan continue to strengthen accountability within our own institution and across the open education movement. They will also provide other institutions with valuable data and insight onto how open knowledge sharing contributes to broader educational opportunities and collaboration across the world.

Since its start in 2008, the Open.Michigan team has launched a website and a wiki, and published hundreds of Open Educational Resources (OER) that include courses, open textbooks, image collections, tutorials, and other materials. We have collaborated with eleven schools and colleges and two U-M campuses to publish learning resources from across the university. We have also participated in national and international collaborations with institutions and organizations, contributing to the growth of the open education movement in academic institutions across the world, including the Hewlett Foundation, Creative Commons and MIT's OpenCourseWare program.

Our current staff includes three full time employees: an operations manager, an open education coordinator, and a project manager for our international collaborations, including the African Health OER Network. The Open.Michigan team is also made up of several employees who dedicate a portion of their time and expertise to our projects, including three software developers and a publications manager. In addition to these regular staff members, Open.Michigan employs several part-time and student employees to work on specific projects and activities. Our current part-time staff includes one open education specialist, three part time publications assistants, and two research assistants.

Evaluation Research Design

The Open.Michigan team started a large-scale evaluation project in Fall 2010. Anticipated to stretch across nine months, this project encompasses five phases of evaluation. These phases are not discrete steps that end at specific times, but instead comprise an iterative process. The research team for this project has been actively involved in phases one through four since its launch.

Phase One: September-ongoing

- Define the mission and objectives of Open.Michigan

Phase Two: September-November 2010

- Conduct environmental scan of other Evaluations in Open Education

Phase Three: November 2010-January 2011

- Complete inventory and review of internal documents
- Develop analyses such as PEST (Political, Economic, Social, and Technological) and SWOT (Strengths, Weaknesses, Opportunities, and Threats)

Phase Four: December 2010-February 2011

- Formulate and implement strategy
- Develop survey tools

Phase Five: March-May 2011

- Distribute survey
- Analyze data and synthesize results

Data Collection and Methodology

Open.Michigan participates in a variety of research, design and engagement projects. Our website (<http://open.umich.edu>) hosts our published OER and other resources whereas our wiki (<http://open.umich.edu/wiki>) provides documentation for our processes, resources, and workflows. Much of our previous data and evaluation efforts were informally culled from these existing resources.

Through a combination of existing and new qualitative (including surveys, interviews and user feedback) and quantitative (including web analytics, published resources) data, we aim to measure Open.Michigan's impact on the University of Michigan campus and on the broader open education landscape, as well as its progress toward overall objectives and mission. Our new evaluation project will continue to build on these resources and derive new data from a targeted use of Google Analytics and other evaluative tools.

Document study: Since its pilot phase, the Open.Michigan team has been meticulously documenting workflows and processes and providing these resources on its wiki for others to use and adapt in their particular settings. Most presentation materials, reports, and publications are also documented on this site. We incorporated these materials into the evaluation of the activities Open.Michigan has engaged in over the past three years that illustrate the efforts and impact of the initiative on the U-M community. We also analyzed internal documentation of research, processes, and policy development undertaken by various members of the Open.Michigan team and consultants over the past three years.

Web analytics: Three years of data were gathered and analyzed from the initiative's website using Google Analytics. Analysis included statistics such as site visits, unique users, access points, referring sites and geographic distribution of users. Open.Michigan distributes its video content through a variety of channels including YouTube, Blip.tv, and the Internet Archive. These data were also included in the analysis. Our website first recorded visitors on March 18, 2008 and we have gathered analytics from this date on. A drawback to this analysis is the inclusion of "home" traffic on the website from Open.Michigan staff using the site in daily activities or for tests as the site evolves. We have been able to purge this traffic from subsequent analytics reports but our retrospective data could not be scoped in this way.

Surveys: Planned for launch in March 2011, we have developed a series of surveys aimed at gathering information about the motivations for resource use and sharing in academic settings in addition to the awareness of and support for OER. In preparation for these surveys we have also analyzed the U-M CTools (i.e., Sakai Classroom Learning Environment) survey results from 2007-2010 that featured five faculty questions and three student questions about OCW and Open.Michigan. Three broad surveys will target students, faculty, and staff across U-M. Two surveys will assess how direct participation with Open.Michigan to produce OER has affected teaching and learning practices among U-M faculty and students. Finally, we will launch a general survey on our website, targeting independent learners and those accessing our resources outside of the U-M community.

OER Evaluation Environmental Scan: We conducted an environmental scan of current OER and OpenCourseWare (OCW) research and evaluation efforts and activities in a variety of settings. Academic, institutional and governmental efforts were examined in the scan. The majority of evaluations examined utilized both qualitative and quantitative methods, relying largely on questionnaires, surveys, and to a lesser extent interviews for qualitative data, and focusing almost entirely on web analytics and other Internet usage statistics to establish a corpus of quantitative data. Research included documents such as "A Review of the Open Educational Resources (OER) Movement: Achievements, Challenges, and New Opportunities" (Atkins, et. al., 2007) and MIT's "2005 Program Evaluations Finding Report" (2006). This scan both informed our process for designing an evaluation plan for Open.Michigan and helped us to determine the state of evaluation in open education.

Target Audience

Those who create OER and support open knowledge sharing at the University of Michigan include every member of the university community, from faculty, librarians, and instructional designers to students involved in course projects. We publish materials from research projects, courses, and learning tools as OER. In addition to this, we train each individual involved with Open.Michigan to be able to recognize, use, and create openly licensed content in his or her daily work. Our process for publishing OER (<http://open.umich.edu/dScribe>) is participatory and we believe this enriches teaching and learning at U-M.

As we began to formulate our evaluation and strategic planning processes, we focused on collecting information from producers of OER on campus (those individuals and schools who have collaborated with Open.Michigan directly) and on members of our immediate community who use our OER. Understanding the ways in which these two groups use OER produced at U-M to enhance their traditional learning experiences help determine how Open.Michigan scopes and achieves our objectives. We are also targeting self-learners to determine the ways in which OER produced by the University of Michigan has an impact on the informal and non-traditional education.

Guiding Objectives

Documenting the growth of Open.Michigan, developing a strategic vision and work plan and evaluating our impact all help Open.Michigan determine the fit of our organization's goals and publication methods with the needs of our local teaching and learning community.

Understanding how and in what ways our resources are valuable to those who access and interact with them enables us to proactively and strategically respond to open learning trends in higher education. Through this evaluation, we aim to answer several questions regarding our content and its value, including:

- How and why is our OER being used?
- Who is using our OER?
- What value does OER bring to U-M?
- In what contexts are people using our OER?

We also aim to uncover how we can more effectively disseminate and publish the OER we create and identify ways we can encourage and foster communication and community building around OER resources, both on the U-M campus and in digital learning spaces. From the start, Open.Michigan has developed processes and infrastructure to support a cultural shift at U-M that encourages sharing knowledge. First, however, we had to take a step back and determine how these processes fit into our institutional goals. We began by developing a roadmap for Open.Michigan and its supporters to use effectively to measure our progress toward these goals.

Our Progress

Open.Michigan's vision: While the Open.Michigan team has always emphasized supporting a culture of sharing at the University of Michigan, until recently these goals were never explicitly documented. As investment in open access, open publishing (including Open.Michigan), and open data initiatives gain momentum at U-M, our team realizes the need to evaluate not only our

progress and our growth at U-M but also our impact. In tandem with this effort is the need to share our mission and operationalize our goals with our campus community in order to share our story and connect with the large, distributed U-M community.

After an internal evaluation of our efforts, research, collaborations, and activities, the Open.Michigan team drafted a strategic vision that illustrates our mission and our goals. As we continue to gather and analyze data for our evaluation efforts, we move closer to scoping our objectives, outputs and outcomes in the context of this vision. What follows is an excerpt from our strategic vision document that includes our mission:

“Open.Michigan is founded on the principle that public universities have a responsibility to share the knowledge and resources they create with the public they serve. The mission of Open.Michigan is to *enable University of Michigan faculty, students, staff and others to share their educational resources and research with the world*. Most of the activity in service of this mission is directly related to OER production and publishing in some form, but there is also an underlying effort to encourage knowledge sharing and foster a participatory learning environment.” (Kleymeer, 2011)

By explicitly stating our mission and our vision, we offer guiding principles for those who work together with us as participants in creating OER, colleagues fostering open knowledge sharing and partners in growing OER efforts on a global scale.

Open.Michigan's goals and objectives: Two goals emerged from our vision document: Open.Michigan strives to 1) sustain a thriving culture of sharing knowledge at U-M; and 2) provide comprehensive public access to all of U-M's scholarly output. These goals are directed inward, to our local U-M community and externally, to the broader open education movement. As we continue to refine our strategic plan we are identifying concrete goals and objectives and aligning our metrics to these goals.

Measurable activities that relate to these two goals include: building communities of OER producers and users, providing consulting and outreach services to facilitate OER production, and the development of processes and software to support OER production and publishing. Table 1 illustrates examples of how we have mapped our known indicators to the goals and activities that have emerged from our strategic planning process. This table features internally focused activities at Open.Michigan, but a similar table could be constructed that showcases our external collaborative and publishing efforts.

Table 1: Strategies, Objectives and Indicators of Open.Michigan’s Performance

Strategy (Goals)	Objectives (Activities)	Indicators (Outputs and Outcomes)
Sustain thriving culture of sharing knowledge at U-M	<ul style="list-style-type: none"> • Build community of OER producers and users 	<ul style="list-style-type: none"> • dScribe participants (students) • dScribe participants (faculty) • Presentations to U-M community • Guest lectures in courses taught at U-M • Courses taught on open education • Client participation in project-based courses • Partnerships • U-M community members using OER • Participating colleges and schools • Access of OER • Use of OER
Provide comprehensive public access to all scholarly output at U-M	<ul style="list-style-type: none"> • Provide consulting and outreach services to facilitate OER • Develop processes and software to support OER production and publishing • Produce and publish learning resources and tools as OER 	<ul style="list-style-type: none"> • Published U-M OER • Workshops • Training presentations • Project collaborations • Papers published • Collaborations • DIY resources • Software development • Publishing platform • Policy development and guides • Research

Examples of Impact

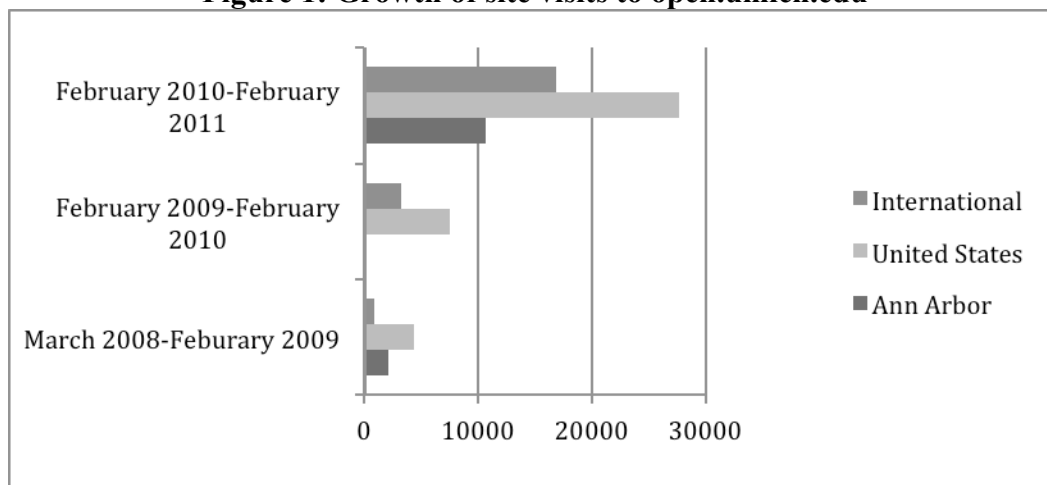
We have conducted analyses of previous data gathered by staff at Open.Michigan for various research, evaluation and publication needs and have analyzed much of our online site traffic and use (including resources hosted on our site and hosted elsewhere). We have discovered that while much of our traffic comes Google searches or direct traffic, considerable traffic is routed from referring sites such as ocwconsortium.org (accounting for 7.42% of our site visits from February 2010-February 2011). As participants in the open education movement, this traffic

illustrates a need for continual investment in OER at institutional levels and for support across universities and organizations. Below are a few examples of the data we have been analyzing and conclusions drawn from these analyses.

Use of Open.Michigan's OER: As we continue to develop our evaluation plan, in alignment with the goals and objectives for our strategic plan, we have also collected and analyzed data on our overall growth over the past three years. We focused our most recent data analysis on access to and use of our OER, based on web analytics. Visitors to our website have exponentially grown since our website was launched in April 2008. Since our site launch in 2008, we have seen exponential growth in site visits, especially over the last year (see Figure 1).

While 21% of our visitors over the last three years have been from Ann Arbor and the immediate area, 65% of our visitors are spread throughout Michigan and the United States and 35% of our visitors are from countries other than the United States. The top international visits include China, India, the United Kingdom, Canada, Brazil underscoring the potential impact of OER to reach far beyond the classrooms of the University of Michigan. This also illustrates the importance of offering materials with licenses that allow for adaptation, to enable users from other countries to translate these materials into their own languages for greater penetration and use. We have also received feedback from users outside U-M, including a comment on one of our videos stating, "Thank you for the great lecture. My teacher did not explain as clear as you did,"¹ indicating our materials have indeed supported student learning at other institutions.

Figure 1: Growth of site visits to open.umich.edu



Building Community: Open.Michigan participates in and supports campus and international communities in OER production, including a U-M OER legal and policy team, the African Health OER Network, the OpenCourseWare Consortium. To date, Open.Michigan staff members have actively participated in the teaching environment at the University of Michigan, acting as guest lecturers, project clients, event coordinators, and collaborators with U-M faculty and staff. In one instance, an Open.Michigan staff member designed and taught a U-M Flint course "Open

¹ Comment from devilmirror1 (2010) on publication of HMP 607: "Corporate Finance for Health Care Administrators," lecture 10 (Wheeler, 2008). Available from <http://www.youtube.com/watch?v=gVuFRuEOROc&feature=relmfu>

Pedagogy—A New Paradigm for Teaching and Learning". An example of Open.Michigan's sustained community engagement is our collaboration with the university's libraries. Open.Michigan frequently partners with staff in the MLibrary Copyright and MPublishing offices to coordinate events, workshops and facilitate educational outreach across campus and in the Michigan area. Some examples of collaborations with the U-M Library include co-hosting Copyright Camp (2010), hosting a CopyNight (November 2010), developing resources for librarian instructional sessions for international students visiting the U-M campus (Chemistry and Shapiro Undergraduate libraries), and participation as a client interviewee for iDesign content search and discovery contest (2011). The Dean of Libraries, Paul Courant, also publicly advocates for Open.Michigan and our efforts and has recorded a "Why Open Is Important" video with Open.Michigan (Hardin, 2010).

Facilitating OER Production: Open.Michigan's outreach and education programs teach U-M faculty, students, and staff about the value and benefits of using public copyright licenses and creating OER. Open.Michigan partners with faculty, students, and staff who wish to create OER versions of their scholarly materials, including courses, textbooks, and datasets. Open.Michigan provides consultation and resource production support for current projects and initiatives hosted by individuals or organizations across campus. In addition to our health collaborations within U-M, we also facilitate the African Health OER Network. In collaboration with OER Africa, Open.Michigan launched a web portal (<http://www.oerafrica.org/healthoer>) that includes over 150 locally-developed, comprehensive health OER. These modules cover a broad range of health science disciplines, including obstetrics and gynecology, microbiology, and community and public health. The African Health OER Network has conducted in-person OER production and advocacy workshops, facilitated regular teleconferences to connect participants at partner institutions, published several guides for producing OER, established an memorandum of understanding with MedEdPORTAL for sharing learning resources, and published a series of reports and case studies analyzing various health OER initiatives and policies at partner universities.

OER Production Resources: The Open.Michigan team also facilitates the process of creating OER beyond the University of Michigan. To support this we have developed resources, including tools and documents, to aid others in their efforts to develop programs like Open.Michigan at other universities, including developing our publishing platform on Drupal (that will soon be made available to the public under an open license) and participating in a fair use for OCW project that resulted in the "Code of Best Practices in Fair Use for OpenCourseWare" (A Committee of Practitioners of OpenCourseWare, 2009). Open.Michigan developed and continues to refine a distributed OER production process called "dScribe," which relies on student volunteers in U-M courses to collect, format, and publish learning materials as OER. To facilitate this work and support the OER production process, Open.Michigan developed and maintains software called OERca (Open.Michigan, 2010). OERca is a web-based content analysis application that can be used by individuals involved in clearing materials of copyright and other intellectual policy concerns so they may be published under open licenses as OER. This tool is available to the general public and has been incorporated into local OER efforts in California, Peru, South Africa, and Ghana. Over the last three years, 105 individuals from U-M and seven external institutions have requested an account and used OERca to publish OER. OERca has been used as a model for other metadata and material processing projects, most

notably the Institute of Museum and Library Services funded Copyright Review Management System, managed by MLibrary.

Future Progress

What we have measured thus far has indicated that we have indeed had an impact on the open education landscape but we still need to answer how we have affected academic activities at the University of Michigan. We are currently measuring the overall investment in OER at the University of Michigan, including resources (money, staff, administrative support) devoted to OER production and development. Open.Michigan must still determine in what contexts our resources are being used and how they may (or may not) affect the learning outcomes in our home community. Targeted surveys will determine the awareness, use, and support of OER at the University of Michigan and indicate overall trends in information sharing and collaboration on our campus among and between faculty, students, and staff. From data we have analyzed, we have identified the following three broad targets for the next three years:

- Increase support for OER production
- Expand and improve OER offerings
- Add value to content and services

By continuing to develop our strategic vision, outlining concrete goals and objectives to guide our team and our growing community of OER users and creators at the University of Michigan, we expect to be poised to address these targets in the upcoming years. As a university with over 58,000 enrolled students (U-M Facts and Figures, 2011) and 40,000 faculty, staff and university employees (Human Capital Report, 2010), Open.Michigan has already used this data to inform its next steps as an initiative that aims to support knowledge and resource sharing across this campus and across the world.

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