

OER strategies and best practices as success factors in Open Access initiatives in higher education

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Abstract

The open access movement encourages for the free dissemination of scientific production, that is, content that derives from the research process. These initiatives expanded into educational material, under new pedagogical approaches that promote that both teachers and students share, use and reuse educational resources with other groups and communities.

Deriving from the open access initiatives, the OER movement involves the promotion of technology as a means to develop improvements in learning, under the principle that states that "existing knowledge in the world is a public good" (Rios, 2011), and that technologies such as WWW provide a valuable resource for sharing, using and reusing that knowledge. This "democratic distribution of knowledge" represents a valuable opportunity for developing countries to have access to materials, courses, repositories, strategies and actions to expand educational coverage, in the spirit of moving towards the creation and global integration of the knowledge society.

The *open access* (OA) and *open educational resources* (OER) movements are intimately linked with *sharing*, which is the essence of education. Particularly, OER strategies rely on principles for enabling sharing of knowledge in an ethical, efficient and sustainable way; and urge teachers to be initiated in publishing academic products, in similar ways as of their research colleagues.

In this presentation I will show the results of a study where higher education institutions, interested in national and international competitiveness, were analyzed to assess the value it brings to their open access strategy to have clear definitions and established policies and programs around open educational resources (OER). I will also characterize some of their best practices involving open access and OER initiatives.

As a result of this study, I revised an intervention strategy under execution for UNAM to achieve an institutional position on OER and thus add value to its open access initiative.

Keywords

Open access, open educational resources, higher education institutions, strategies, best practices.

Open access in universities involves a cultural change, which requires integrating the use of technology, aggressive publishing policies and improved access to institutional repositories, in the same line of thinking that technology can reinforce both academic, strategic and regulatory issues, for instance: equity, accessibility, copyright, intellectual property, international and

domestic barriers to knowledge, use of new technologies, diversity, inclusion, among others. Therefore, it is required that higher education institutions develop programs that naturally combine their strategies with its international insertion initiatives, considering its capacity for action and creativity to strengthen the institution itself, increasing its projection.

Wider dissemination of the different contributions of universities via Internet has facilitated the comparison of its academic and scientific production and its position in the international arena. It is also important to notice that although most of the universities show their results through Internet and traditional means, many have not institutionalized a project to disseminate its production under the paradigm of open access, covering not only research but also teaching.

Also, still today, much of the digital content for teaching and learning in higher education institutions are behind a password within a Learning Management System (LMS), thus the strategy behind deciding to start an OER initiative means a lot to move towards the vision of sharing materials, methods and tools, resulting in an increased number of educational resources that expand opportunities for both students and teachers, not only in our local communities but also worldwide.

Internationally, there are different approaches for the adoption of open access policies in higher education institutions, and they are mostly developed around the publication of scientific and humanistic production in refereed journals. However, the substantive function that gives reason for these universities is, precisely, teaching, where it seems to be a lack of clarity for the definition of open access policies in the production and use of online educational resources.

Different effects that reflect the value of both open access and educational resources approaches for a higher education institution can be studied through the impact of the projection of its Internet publications and the strength of its academic online products and internal norms. I used this premise as a basis for studying how OER strategies and best practices can contribute to the success of an institutional open access initiative.

First of all, I narrowed my research to Latin-American higher education institutions that publish Spanish content on line. I also checked if these institutions have repositories that enable their communities to deposit academic materials. In this context, I gathered information over 45 institutions, and found a very interesting fact: less than 10% have adhered to the Berlin Declaration on Open Access, but nearly 20% have institutional open access declarations. Most of them are public institutions.

In most cases, there is no clear linkage between OER initiatives and their corresponding institutional open access policy, but external web metrics suggest that a higher education institution with both types of programs (open access and OER) increases its online impact. This is the case of some of the most successful institutions that were studied (in alphabetical order):

- ⑩ Instituto Tecnológico y de Estudios Superiores de Monterrey (Mexico)
- ⑩ Pontificia Universidad Javeriana (Colombia)
- ⑩ Universidad Autónoma del Estado de México (Mexico)

- ⑩ Universidad Autónoma de Nuevo León (Mexico)
- ⑩ Universidad de Chile (Chile)
- ⑩ Universidad de los Andes (Venezuela)
- ⑩ Universidad de Guadalajara (Mexico)
- ⑩ Universidad Estatal a Distancia (Costa Rica)
- ⑩ Universidad Nacional Autónoma de México (UNAM, Mexico)
- ⑩ Universidad Nacional de Colombia (Colombia)
- ⑩ Universidad Nacional de la Plata (Argentina)
- ⑩ Universidad Veracruzana (Mexico)

Some of the best practices on OA/OER in leading higher education institutions

The following best practices on OA/OER can be identified in leading higher education institutions within the group that was studied.

Shifting paradigms to openness

The most successful universities that were studied have clearly undertaken monumental efforts to promote a shift in the institutional attitude towards producing, using and reusing OERs, within the open access paradigm. Campaigns, brochures, conferences, norms, mandates, all are promoted for helping teachers and students to see education through lenses of openness. These include:

- a) Make the community familiar with concepts such as: open access, open licensing, open educational resources, open education. And, whenever possible, institutionalize these concepts in declarations, mandates or norms.
- b) Ensure that OER developers and consumers are aware of the requirements and rules around open licensing. This includes encouraging them to either produce original resources from scratch, or use open sources.
- c) The implication of the creation of material under open licenses must be communicated widely: every time any kind of material is created and licensed openly, that material becomes a potential input that can be used in an educational setting. Thus, reuse and adaptation of materials must be encouraged among faculty and students, but very importantly, by self-learners, under ethical conditions.
- d) In shifting paradigms to openness in educational resources, another important consideration is that online material should be used both for traditional and online programs within higher education institutions, that is, it should also be considered as valuable input for classroom instruction.

Representative steering committees

A steering committee helps to steer a project through from start to completion. In most of the successful higher education institutions that were studied, a steering committee made up of representatives of key figures within the university was in charge of conceiving the OER initiative. It is very important and useful to include members from faculty (teachers and researchers), students, administrators and open access policy directors; because all views will be helpful in ensuring that the OA/OER programs are correctly targeted.

These committees are also responsible for providing the institution with guidance regarding how it should position in the open access and OER environments. Having an adequate representation in the steering committee also facilitates legitimating norms, declaration, mandates and guiding principles that must be agreed to regulate OA/OER programs.

Institutional policies, standards and platforms

The most successful institutions develop not only extensive, but useful and practical policies and standards. Extraordinary examples can be found in the universities that were studied, including: open access declarations, policies for deposit of materials, OER design standards, faculty release agreements, institutional repositories, transparency and archiving guidelines.

Provision of authoring tools

An authoring toolkit is a very good complement for standards, norms and checklists. Each institution can select or even customize which tools and methodologies for authoring OER best suit its educational content strategy. This practice empowers teachers and facilitates successful creation of accessible OER that comply with the institutional framework.

This recommended practice is also applicable for tools and sites that help teachers to publish academic content online, without intervention from technical staff.

Communication of the OERs campaign

Less than 5% of the institutions that were studied have a direct access from the official web portal to OA/OER digital content. Furthermore, OER initiatives in bigger higher education institutions usually originate in different academic departments and result in several communication campaigns with crossed messages that tend to confuse end users.

OER initiatives must be carried out by multidisciplinary teams, and communication experts can widely contribute in checking how information is presented in user interfaces and in designing convincing and effective campaigns.

Best practices at UNAM

National Autonomous University of Mexico (UNAM) is one of Latin America's best-known and biggest universities, by the size of the community it serves and the quality and diversity of services provided. Students and faculty integrate an academic community of more than 350,000 people; they produce large amounts of information in digital format, and most of it has been published in the institutional Internet domain, unam.mx.

UNAM's commitment to openness, transparency and accountability has been made explicit in the manifesto for the "All UNAM Online" institutional program that aims to make all of our digital content available in our public domain to worldwide users, under an open access policy.

The "All UNAM Online" program represents a major challenge because of the size of the university and the cultural change that its implementation implies. To support our fundamental tasks, different projects have been developed to enhance how we get advantage of the benefits of Internet, to improve the institution's worldwide impact and the major role it plays in Mexico's higher education and research. Several university entities and academic departments participate in the program, and their members work hard to provide access to the collections and catalogs of the university, and to all the digital content that UNAM and its community want to share with the world.

Since the "All UNAM Online" program was launched on November, 2011, it has been clear that the main foundations of our online presence and impact rely on the academic products of both research and cultural dissemination functions. This is why we have been strongly working on the teaching arena, with the following application of best practices:

Top management support

As all project management approaches establish, top management support is critical for any OA/OER combined strategy that requires a sponsor that has influence both in the scopes of both research and teaching at the higher education institution. "All UNAM Online" is part of the highest authority's strategic project portfolio at the university, which has been extremely helpful for assuming openness of digital content as an institutional mandate.

Unique institutional Internet domain

The university community and the academic and administrative departments must recognize the value of having all their digital content published in sites within the institutional Internet domain. As in the case of unam.mx, whenever a teacher or researcher gets his or her academic production published online in an institutional website, the digital content immediately inherits the prestige of the Internet domain, which is valued for its quality by search engines and other Internet crawling tools.

It is a win-win situation. "Making educational content accessible beyond the walls of the original authoring institution can benefit everyone involved, including the reputation of the author and

the institution itself" (Caswell, Henson, Jensen and Wiley, 2008); this can also be applied to the use of the institutional Internet domain as well.

Building infomediaries

An infomediary (information+intermediary) is a web site that provides specialized information on behalf of producers and potential customers. Infomediaries gather, organize, and link to information and services that are being added online. They are a good alternative to the huge challenge of organizing high volumes of academic content that is produced by universities and their communities on a daily basis.

Online content surely is indexed by search engines, and Internet users retrieve educational resources using organic searches. For instance, several repositories report that 70-75% of their hits come from a search on Google or another search engine. But this does not prevent universities from keeping the effort of providing adequate Internet services that facilitate the location of academic information.

UNAM has built valuable infomediaries in recent years that contribute to their OA/OER program: www.unamenlinea.unam.mx for the "All UNAM Online" initiative, and www.rua.unam.mx for the OER institutional project.

Content indexing

To complement the best practice about infomediaries, it is essential that higher education institutions promote a culture of continuous improvement of their content that includes assuring that each service has appropriate special metadata embedded into web pages, plus validating and verifying all records from card catalogs in repositories and related services. As stated before in this paper, this practice is better achieved if an institutional interoperable online metadata standard is adopted, such as Dublin Core.

Also, a curricular classification is needed if we want to provide teachers and students with the appropriate information on who could benefit from using an existing OER. This is what we are strongly working at UNAM.

Production and identification of OER for syllabus coverage

OER are not only whole courses but also isolated or related pieces like videos, interactive material, podcasts, documents, apps, etc., but an important strategic approach is to have the syllabus as the overall goal to be reached by the production and the identification of OER. This is especially important when faculty members have freedom to choose which educational materials are to be produced, because syllabus mapping helps demonstrating the missing pieces.

The syllabus approach at UNAM is called the "Learning University Network" (www.rua.unam.mx), with the following principle: breaking down learning sequences over an increased emphasis on curricular modularity. The goal is to provide students with tools to study anytime, anyplace and in any increment of time, at their very self-pace, using the type of content

that is suitable to his/her personal learning style: audio, video, exercises, text, multimedia, and more. All these require shorter sequences which we hope can be used in several different learning contexts.

With the “Learning University Network”, teachers find different options to enrich their courses, and even better, they can make their very own suggestions on how to extend the RUA catalog, both with learning objects they have built, and with open online resources they have proven useful. Also, they can validate other teachers' selected materials, and share evaluation resources.

Reviewing and quality assurance

This is an extensive and continuous phase in every OER effort. If one recalls all the peer review and validation processes that take place in the research arena, and compare them to their equivalents in the production of OER, it is easy to understand why there are so many improvement opportunities in most of the following OER aspects:

- a) Review the OER content from the open licensing perspective, by copyright experts. This includes ensuring that the OER contains complete information on authors, copyright permissions and references.
- b) Review the instructional design of each material, and verify that it executes correctly, by professional testers and instructional designers. This includes checking that no execution error arises when using the OER, but also verifying that even videos are properly recorded and edited. This step could be one of the last opportunities for the institution to prevent publishing material under its name that fails in providing learning experiences that were appropriately designed and developed. Sometimes, validation and verification are facilitated when reviewing isolated pieces, rather than whole courses.

Information literacy

Universities have to help both students and teachers in learning how to search and filter information on the Internet. Problems of merely using search engines to find academic information on the web include "the lack of detail regarding copyright permissions for search engine results, the uneven quality of resources found on search engines, and how results may be too scattered and disparate" (Caswell, Henson, Jensen and Wiley, 2008).

UNAM has launched different training programs for students and teachers around improving their information literacy competencies. These include librarians that are training both traditional and digital library users in search tools and interfaces, and campaigns with attractive components such as a mobile app that proposes how to build search strategies and remembers how to construct APA references and citations.

Ethical production and use of OER

OER programs continuously deal with intellectual property issues. Too many teachers use excerpts from copyrighted material claiming that they have been doing so for years without

having received any complaints, under a certain notion of "Fair Use". Most of the time this works because these teachers' content is only provided to enrolled students within a Learning Management System that provides controlled conditions such as user authentication and blockages to search engines. Of course, this kind of resources is not suitable to be shared openly online.

There is an institutional campaign for preventing plagiarism currently undertaken by the highest authorities at UNAM. The design of this project started from a survey that helped to diagnose organizational culture around this issue. It is recognized that a cultural change around this is gradual.

Academic recognition

Faculty members widely benefit from contributing to the whole OER cycle. They can share their work, their teaching practices, and their research findings with others in the field, globally. Other scholars can use and reuse their material, and build upon quality components others have begun. But all these can merely be inspirational motives if the institution does not include all the activities a teacher can do around OER in the rules of programs for academic recognition.

UNAM incorporated digital content related activities in the academic recognition programs for teachers in 2014, and is presently working on complementary rules that help evaluators of academic reports involving digital content.

Personal web pages

We have already covered authoring tools and mentioned that tools that enable teachers to publish academic content are highly recommended. www.paginaspersonales.unam.mx is the institutional service that allows our teachers to easily integrate information into a template with their profile, interests, content they want to share with their students and the world, and where they can even start a blog.

Downloadable OER

With Internet connectivity issues being addressed by countries via their digital agendas, and the economical feasibility for students to have data mobile service, it is extremely important to consider that OER services provide with downloadable materials that people can enjoy anywhere, anytime. Infrastructure challenges make this practice a critical factor in the path to the democratization of knowledge.

Social media

Social media are excellent means of dissemination of the value of the materials that universities can share within their OA/OER initiatives. "All UNAM Online" has worked steadily in building virtual communities around Facebook and Twitter users, with excellent results. As part of this strategy, we have also promoted institutional guidelines for social media community management on institutional accounts.

Teachers' involvement

Before, we commented on the value of teachers' involvement in steering committees, but their participation is equally critical for OER production, identification, selection, filtering, evaluation, recommendation, use and reuse, namely, the whole OER cycle must be done with and around teachers.

We have been working at UNAM for the last couple of years with high-school teachers who are being trained to begin to use educational digital content (sites, tools and platforms) as part of their daily work in the classroom. Teachers also participate in the production and selection of educational resources that are recommended in the institutional open websites.

Technical staff training

This is one of the noblest practices that we have been working on at UNAM in the last years. Technical staff from different academic departments tends to solve the same problems without speaking to each other. It is a huge waste of time, money and effort. Communication channels and networking opportunities should be promoted for technical staff to share their very own best practices, along with updated training on standards, methodologies and tools that support OA/OER institutional strategy.

Final remarks

Unlike open access initiatives at higher education institutions, OER programs among the institutions that were analyzed in this study share very few characteristics. One could think that every institution starts from scratch, although each one deals with similar obstacles when trying to motivate its community to produce, use and reuse online content for teaching. Also, Latin-American higher education institutions could greatly benefit from the network collaboration model that has proved very useful in the English-speaking and European arenas.

As stated by Caswell, Henson, Jensen and Wiley (2008), OER have the potential to substantially improve the quality of life of learners around the world. For social transformation to occur in Latin-American countries, it is critical that OER in Spanish grow in quality and quantity. Sharing experiences, lessons learned and best practices is crucial for the success of open access and OER programs at higher education institutions.

It was established before that public institutions commitment to open access is noteworthy. In Latin-American countries, public universities also conduct a key role in the evolution of society. Since there is a connection between efficient Internet visibility, external evaluation, citation impact and effectiveness of open access publishing at these higher education institutions, well planned and executed OER programs along with open access policies become a critical component for improving global competitiveness of Latin-American universities.

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