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Academic networks for research and innovation: experiences of Open Educational Movement's in a Latin-American context

María Soledad Ramírez Montoya¹

¹*Instituto Tecnológico y de Estudios Superiores de Monterrey (MÉXICO)*
solramirez@itesm.mx

Abstract

In this paper are presented some educational experiences towards an open educational practice; the main purpose consists of analyzing the roll of networks through studies and cases, where technologies have demonstrated to be an important tool as a way to enhance educational research to promote the knowledge in Open Educational Movement's. It is discussed that when people work collaboratively to achieve a goal, it is possible to foster individuals' strengths, accomplish the research proposed objectives, and transfer goals to other directions. The main purpose of the paper consists on displaying three study cases: (a) Innovation Chair on Technology and Education (CIITE- Institutional education and research network, <http://www.ruv.itesm.mx/convenio/catedra/>), (b) University Corporation for the Development of Internet (CUDI-Mexican education and research network, <http://www.cudi.edu.mx/>), and (c) Open Latin-American Community of social and educational research (CLARISE, Latin-American network for the Open Educational Movement <https://sites.google.com/site/redclarise/>), where research professors and students from five Latin-American countries are working on this subject. We discuss the effectiveness of networks for knowledge generation about Open Educational Movement's, as well as the challenges to enhance collaborative work through networks as a mean to contribute to institutions' social capital growth.

Keywords

Open practice, networks, research, community, transference, mobilization, knowledge.

INTRODUCTION: OPEN EDUCATIONAL MOVEMENT

Open Content Software, flexible licensing standards, and creation, and procurement of open resources for higher education, were important antecedents in the emergence of open educational resources movement, known as OER or REA in Spanish (Recursos de Educación Abiertos). Schmidt (2007), states that sharing educational resources is not entirely new in the context of education, what is new is the ease with which, thanks to technology, these resources can be generated and distributed to mass audiences via the Internet; in addition, legal security of open content licenses, such as Creative Commons Mexico (2008) sponsor authors and users.

Today there are numerous initiatives of OER, the study of the Organization for Economic Co-operation and Development OECD, *Giving Knowledge for Free: the emergence of Open Educational Resources*, counted more than 3,000 courses available in OER, in more than 300 universities around the world (D'Antoni, 2008). In Mexico, one of these initiatives is OER Temoa repository, which is a public portal with a database of multilingual content that allows users to find a selection of OER by using a meta data base built and reviewed by experts. Mortera & Ramirez (2009) mention that this repository was greatly enriched with open educational resources as a result of the research project "Knowledge Hub for basic education", financed by the Internet Development Universities Corporation (CUDI), and the National Council of Science and Technology (CONACYT), where six higher education institutions participated, with 178 basic education teachers, during identification, indexation and application of open educational resources en learning environments of pre-school, elementary school, and middle school.

Some research related to open educational resources has been conducted by Rodriguez and Steel (2003), whom studied a continuous development model for professional development (CPD) to promote ownership of ICT resources and pedagogical content knowledge in teachers. Larson & Murray (2008), described the initiative MIT BLOSSOMS, which consisted in the development of a free repository of video modules, created by teachers to promote mixed-learning, using open resources for Math or Science teaching. Wilson (2008), made a comparative study of the use of OER through the project OpenLearn in a college from UK and one from the south of Africa. Another study related to this matter, was done by Lee, Lin & Bonk (2007), about translating OER conversation OOPS System from MIT into Chinese language.

The Open Educational Movement appeared at the beginning of last decade, with the premise of sharing information to decrease the gap between communities with access to information and communities without access. This way, universities such as Massachusetts Institute of Technology (MIT) appeared in USA, and they offered their study programs through Internet with open content, named OpenCourseware. As a result, the open movement was created, being Open Educational Resources (OER) one of its manifestations, characterized to offer digitalized materials in an open and free way to teachers, students and autodidactic people to use and re-use in teaching, learning, and research (UNESCO, 2002).

Due to participations in knowledge's democratization, the Open Educational Movement is a project which has been developed and analyzed, mainly in European countries and in USA, but not in emergent countries like México and Latin American countries, where the development is so recent. However, due to the importance to our country of having materials, courses, and quality resources, it was considered as relevant to work in this subject matter, and this has been understood by academics and researchers who have focused their studies on the follow up of the experiences in the free access use, re-use and transference of knowledge.

Context and Impact of Open Educational Movement's in academic and research networks

This section shows practical cases of academic networks in Latin-American. Characteristics from context, objective of network, and work strategies using ICTs are described, and they are closed with scopes and challenges for knowledge construction.

Innovation Chair on Technology and Education (CIITE- Institutional education and research network)

The Chair started operating on July 2007. It's main objective is to contribute through several activities and researches to create scientific knowledge innovation on technology and education: from its theoretical basis to the analysis of concrete experiences on several environments, the evaluation of social impact and proposals that can be carried out to improve the training requirements and the quality on education.

Take part of this Chair: 16 researcher professors (7 of them PhD), 16 PhD's students and 116 master's students, geographically located in different regions around the world, mainly in Latin America. One of the main research topics relies on the open educational movement. The previous works started as an internal network with a project named Knowledge Hub in ITESM (fig. 1).



Fig. 1: Chair's Portal, <http://www.ruv.itesm.mx/convenio/catedra>

The operation strategies of this group happen mainly through two interaction nodes: on site and distance learning. In the on-site node, teachers have meetings to propose common objectives, projects, evaluation indicators, and conceptual training through the exchange of presentations about researches carried out, meanwhile in the distance learning node, the research-professors and postgraduate's dissertator students work on remote research projects (regarding to qualifications projects or financed researches).

University Corporation for the Development of Internet (CUDI-Mexican education and research network)

CUDI is a Mexican education and research network organized as a non-profitable corporation of universities and research centers, created in April 1999.

In this network participates: 240 mexican universities and the thematic communities about education, health, grids, digital libraries, earth sciences, laboratories, ecology, astronomy, mathematics, and business (fig. 2).



Fig. 2: CUDI's Portal, <http://www.cudi.edu.mx/>

One of the main research topics is referenced to the open educational movement, focused on Open Educational Resources. The first inter-institutional team appeared in 2009, with six higher education institutes: *Instituto Tecnológico de Estudios Superiores de Monterrey -ITESM-*, *Oficina Regional de la UNESCO*, *Universidad de Morelos -UM-*, *Escuela Normal "Miguel F. Martínez"*, *Universidad Regiomontana -UR-*, and *Instituto de Investigación e Innovación Educativa -IIEPE-*, which worked with basic education teachers to promote the use of open educational resources. Then, in 2010, a second group with a project of six higher education Mexican institutions integrated: ITESM, UM, *Instituto Tecnológico de Sonora -ITSON-*, *Universidad Autónoma de Yucatán -UADY-*, *Universidad de Guadalajara -UdG-*, *Universidad Autónoma Metropolitana -UAM-*, and *Universidad Autónoma de Guadalajara -UAG-*, which worked in the making of training OER for educational researchers was integrated. In 2011, a third group with five institutions (UdG, ITESM, UM, UAG and Instituto Tecnológico de Chihuahua -ITCH-). It had as objective, sharing its OER through a metarepository as result of the gathered experience from three projects (financed by the Internet Development Universities Corporation – CUDI- and the National Council of Science and Technology – CONACYT-), and to issue publications in magazines and books (Burgos & Ramírez, 2011; Mortera & Burgos, 2010; Ramírez & Burgos, 2010 – Coords.-).

Latin-American Community of Educational and Social Research (CLARISE)

Regional Open Latin American Community of Educational and Social Research (CLARISE): external network to promote the knowledge in the Open Educational Movement's area. CLARISE was created in 2011, having as background researcher teachers connected to national networks of their countries and has as objective to attend the Latin American regional necessity of contributing with efforts through the making of learning and collaboration networks to give visibility and free access to the cultural production, scientific production, and academic production of authors and institutions in Latin America for consultation of worldwide society. The main research topic is referenced to the open educational movement, focused to Open Educational Resources.

This background helped to extend the network towards Latin-American regions, and this way, in 2011 an international project was approved during the COMCLARA 2011 announcement to create the research community, named CLARISE (web page <https://sites.google.com/site/redclarise/>), which was formed by

27 researchers from five countries: Argentina, Costa Rica, Uruguay, Colombia and México. The participating institutions are listed by country as follows:

Argentina:

Universidad de Palermo
Universidad Nacional de Córdoba
Universidad Nacional de San Juan
Univ. Nacional de Mar del Plata

Colombia:

Universidad de La Sabana
Universidad de Santo Tomás (Bucaramanga)

Costa Rica:

Universidad de Costa Rica
Cisco Systems

Uruguay:

Universidad de la República

Mexico:

Instituto Tecnológico y de Estudios Superiores de Monterrey

Figure 3: CLARISE Portal, <https://sites.google.com/site/redclarise/>



CLARISE has the support of Latin American Cooperation Network of Advanced Networks (CLARA) in the COMCLARA 2011 program and in the ALICE2 Project. RedCLARA, the Latin American advanced network for science, research, education, and innovation, links the national academic networks of 13 regional countries to the advanced networks in Europe, North America, Asia, and Oceania.

The operation's strategies of this group are done mainly through two interaction nodes: site and distance learning. By the on-site node, teachers of each institution (by country) have meetings to propose common objectives, projects, evaluation indicators and activities which will be performed on base to the work plan. By the distance-learning node, the research professors are connected through the main network CLARA (through network of each country) to work in the conceptual training and the operation of network activities, with the objective of filling objectives and indicators described in CLARISE.

CLARISE have had work sessions using videoconferences and skipe (CLARISE, 2011a y CLARISE 2011b). The aim of it is the integration and strengthening of the research professors group by the integration of the Practice Community.

The group activities deal with what was stipulated in their work plan:

1. Elaboration of projects to be proposed to an international financing organism. CLARISE works on the proposal formulation of projects financed by a third party, where one of its main purposes is to increase knowledge about open educational resources and link academics and students from Latin-America and other continents.
2. Intensive usage of CLARA network. CLARISE network uses videoconferences with the community's work group to plan and follow network activities; also, offers a virtual seminar through videoconferences and e-forums for members and external academics and students interested in the movement. Besides, it is based on CLARS technologies to make an exploratory study, using polls to diagnose the actual knowledge around Open Educational Movement.
3. Community consolidation. CLARISA exhibits his work through various media (congresses, conferences, institutional news, news through the countries' networks, events, etc.), and invites academics, other networks, colleagues, and national universities to join the international Community.
4. Community visibility. CLARISE disseminates its activities and knowledge that is generated through article publications of the work of the community in refereed journals and which are open (there is a list inside the portal with the available journals). It also makes presentations at conferences on what is done in the community and there is the idea of developing an open format e-book.

Research and innovation: learned lessons

Some innovative educational experiences towards an educational open practice are:

1. The application of OER, integrated with e-learning in graduate courses through the use of OER with the creation of anthologies equivalent to textbooks (Ramírez, 2010a). They have also integrated with traditional education systems through the application of OER in the context of the work of students (Burgos and Ramírez, 2010).
2. The creation and production of OER along with six other Mexican institutions for the development of educational researchers (Ramírez, 2010b).
3. The creation of OER by the graduate students that designed educational cases for K-12 and higher education, as well as open objectives for the formation of teachers in a knowledge based society (Ramírez and Valenzuela, 2010).
4. The creation of an open textbook (Ramírez and Burgos, 2010), resulting from case studies/investigations, where 120 graduate students implemented OER in their learning environments and documented the impact on their learning.
5. ITESM has developed an institutional repository of OER and mobile learning resources on educational research which is available through a website (<http://catedra.ruv.itesm.mx/>), where these resources are open, free and licensed for use, reuse and distribution.
6. The universities have been training their own faculty and undergraduate and graduate students, and also have been training faculty from other educational institutions (K-12 to college years);
7. Finally, has conducted research on all these experiences in several aspects such as: use of technology, legal issues about open educational materials, training for using and producing OER and sharing best practices (www.temoa.info/node/42989).
8. Training practices through open technologies where more than 20 academics of 12 Latin-American and European countries participated.

9. Growth of academic efforts through national networks (CUDI) and Latin-American (CLARISE) that pays off on the increase of knowledge about the Open Educational Movement.
10. Mobilization of educational practices through the exchange of academic collaboration between different countries.

A lesson learnt as good educational practice is to promote among the academic community a culture of *prosumers* that, according its definition, is about people whom produce something (product/ service) for their own consumption (Kotler, 1986). In this case it is educators that produce OER for their own consumption and educational needs. Also some recommendations that could be offered to decision makers to foster new learning environments to prepare educators in a knowledge-based society are to:

- Support and recognize the relevance of OER initiatives at the institutional level (involvement of decision makers and staff).
- Promote a new culture and educational practice to acquire the skills required to exploit fully the use of OER, for example, digital literacy and information literacy.
- Promote a community-based system of open sharing of educational best practices, with the intention of facilitating the effective reuse of OER and learning of significant experiences in the use of OER in teaching and learning activities.
- Clarify and define licensing schemes and mechanisms for the protection of copyright and intellectual property to foster openness of OER, foster its use and ownership of OER.

The network work meetings cross the democratization in the knowledge society. The purpose is that by means of collaboration between professional's and researcher's communities, supported in the use of ICTs, the knowledge is shared between a major number of people, postulating this way by a reduction of scientific breach between countries. The fact of providing the access to the shared knowledge, will contribute in the training of able human beings to learn in an independent way and along all life. In the network's center is the simple and powerful idea about the fact of the knowledge can be built and re-built (according to each context), and that the technology in general and the World Wide Web, in particular, have an extraordinary opportunity to share, use and build the knowledge.

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