Dossier "Education and Technology in Mexico and Latin America: Outlook and Challenges"

ARTICLE

Challenges and perspectives for the open education movement in the distance education environment: a diagnostic study in a SINED[1] project

María Soledad Ramírez Montoya

solramirez@tecvirtual.mx
Tenured Researcher, Research Chair in Innovation in Technology and Education,
Monterrey Institute of Technology and Higher Education, Mexico

Recommended citation

RUSC VOL. 10 No 2 | Universitat Oberta de Catalunya and University of New England | Barcelona, July 2013 | ISSN 1698-580X

414

Abstract

The aim of this article is to present an analysis of challenges and perspectives through a project supported by the Mexican National System of Distance Education (SINED) and based on a successful case called the Regional Open Latin American Community for Social and Educational Research (CLARISE). The CLARISE for Distance Education project (2012-2013) seeks to generate knowledge on teaching models in accordance with distance education needs and a competency-based training approach, by means of networking activities that progress through three phases (diagnosis, training, implementation). This article focuses on the first phase. Having conducted a diagnostic survey of 40 participants from 9 Mexican institutions, it presents a descriptive exploratory study into 4 areas: identification data, the open education movement, distance education and innovation competencies, and networks. The purpose of the study was to devise the actions that would need to be carried out as a research group in the field of distance education. The challenges were identified in three areas: (a) institutional policies for open access; (b) knowledge management and communication; and (c) cultures of collaboration. The perspectives could be opened up by: (a) facilitator training for competency development; (b) innovative models with open access systems; and (c) mobilisation through innovation networks.

Keywords

open education movement, innovation, distance education, educational challenges, open access, digital competencies

Retos y perspectivas en el movimiento educativo abierto de educación a distancia: estudio diagnóstico en un proyecto SINED

Resumen

El objetivo de este artículo es presentar un análisis de retos y perspectivas a través de un proyecto apoyado por el Sistema Nacional de Educación a Distancia (SINED) y que tiene sus antecedentes en un caso de éxito de la Comunidad Latinoamericana Abierta Regional de Investigación Social y Educativa (CLARISE). El proyecto CLARISE para la educación a distancia (2012-2013) busca generar conocimiento en torno a modelos de enseñanza acordes con las necesidades de la modalidad a distancia y el enfoque de formación en competencias, a través de las actividades de una red, en tres etapas (diagnóstico, formación, implementación). Este artículo se enfoca en la primera etapa, donde se presenta un estudio exploratorio-descriptivo, con un diagnóstico de cuarenta participantes de nueve instituciones mexicanas, que indagó en cuatro dominios: datos de identificación, movimiento educativo abierto, competencias en educación a distancia e innovación y redes. Todo para proyectar las acciones que realizar como grupo de investigación en el ámbito de la educación a distancia. Los retos se vislumbran en tres niveles: (a) políticas institucionales para el acceso abierto, (b) gestión y comunicación del conocimiento y (c) cultura de colaboración. Las perspectivas se abren a través de: (a) formación de facilitadores para el desarrollo de competencias, (b) modelos innovadores con sistemas de acceso abierto y (c) movilización a través de redes e innovación.

Palabras clave

movimiento educativo abierto, innovación, educación a distancia, retos educativos, acceso abierto, competencias digitales

© *María Soledad Ramírez Montoya*

Introduction

Educational offerings in distance education mode have increased in higher education institutions in Mexico, and are made available through a variety of programmes: support courses for face-to-face learning, blended learning programmes, fully distance learning programmes supported by technological platforms and resources, and continuing education programmes. In parallel to the growth in distance education, governments, international organisations such as the Organisation for Economic Co-operation and Development (OECD, 2007) and the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2002-2012), and education institutions have promoted various initiatives to produce, disseminate and share digital materials known as open educational resources (OERs) that support academic and research activities. While OERs are materials that can be used to support educational processes, there is still very little awareness of them among the educational community in Latin America, particularly in Mexico.

In the Latin American environment, the development of networked projects to mobilise educational practices was considered necessary. Thus, under the CLARA Communities 2011 (COMCLARA 2011) programme, an international project was approved in 2011 to create the research community called the Regional Open Latin American Community for Social and Educational Research (CLARISE, https://sites.google.com/site/redclarise/), which, in its initial stage, involved 27 researchers from 5 countries: Argentina, Costa Rica, Uruguay, Colombia and Mexico. The organisation and coordination of this community was undertaken in Mexico, thus placing it at the forefront of the open movement in the Latin American region. The CLARISE case is considered a successful example because of the activities that were carried out in the Latin American sphere and effectively extended to Europe, specifically in the Ibero-American sphere.

An interest emerged from this experience in promoting the topic of the open education movement in the distance education environment, and that was how academics from nine Mexican institutions came to participate in the national call for applications issued by the Mexican National System of Distance Education (SINED) for the institutionalisation of the SINED's electronic networks (SINED-cn-02/12). This resulted in the approval of the CLARISE for Distance Education project, which would be developed in the 2012-2013 period.

The aim of the SINED-CLARISE for Distance Education project is to generate knowledge on teaching models in accordance with distance education needs and a competency-based training approach, by creating integrated projects in which researchers and lecturers specialising in distance education can pool their know-how and experiences. At the same time, the aim is to create a collaborative area that serves as a platform for research into and the development of the open education movement's capacities in order to foster the use of knowledge (academic and scientific outputs) that is openly accessible on the Internet, and to support the improvement of educational practices in distance education institutions.

The specific aim of this article is to analyse the challenges and perspectives identified in the first stage of the project, based on a diagnostic survey of the participants, in order to devise the actions that would need to be carried out as a research group in the field of distance education. The article

RUSC VOL. 10 No 2 | Universitat Oberta de Catalunya and University of New England | Barcelona, July 2013 | ISSN 1698-580X

416

is divided into five sections: a description of the context, the theoretical framework, the method, the results and the discussion.

1. Context

The SINED-CLARISE for Distance Education project is based on a successful case called CLARISE (Figure 1). CLARISE emerged in 2011, with the collaboration of research lecturers involved in the national Internet-based networks of their respective countries. The aim is to attend to the Latin American regional need to unite efforts by creating collaboration and learning networks in order to raise the visibility of and provide open access to the cultural, scientific and academic outputs of Latin American authors and institutions, which are freely available to everyone. The main research topic is the open education movement in general, and OERs in particular.

Figure 1. CLARISE website (https://sites.google.com/site/redclarise/)

The CLARISE network is working on studies that report on the application of OERs, cultures of collaboration and open educational practices (OEPs). Of particular note among its activities is the open education movement's webinar, which had 255 participants from 12 Latin American and European countries. Several associated networks have been crucial to CLARISE's development, such as the CLARA Network (Red CLARA), the ALICE2 Latin America Interconnnected with Europe Project (Proyecto ALICE2), the Corporation of Universities for Internet Development (CUDI), the National Academic Network for Advanced Technology (RENATA), the Argentinean National Research Network (INNOVA RED) and the Uruguayan Academic Network (RAU2). The network's activities have been disseminated through various publications (Burgos & Ramírez, 2011; Glasserman, 2012; Nappa & Pandiella, 2012; Peré, 2011; Ramírez, 2012a; Ramírez & Burgos, 2011 [coords], 2012; Salazar, Rodríguez & Campos, 2012; Waisman & Olivares, 2011) and participating institutions' newsletters and websites.

With the experience gained and results obtained from this Latin American network, a decision was taken to participate in an affiliated network to bring distance education innovations together; that was how, in 2012, SINED supported the creation of CLARISE for Distance Education (Figure 2). Nine institutions participated in the initial project:

- Guanajuato Official Normal School of Higher Education (ENSOG)
- Chihuahua Institute of Technology (ITCh)
- Sonora Institute of Technology (ITSON)
- Monterrey Institute of Technology and Higher Education (Monterrey Tec)
- Autonomous University of Baja California (UABC)
- Autonomous University of the State of Mexico (UAEM)
- Autonomous University of Yucatán (UADY)
- University of Montemorelos (UM)
- Autonomous University of Guadalajara (UAG)

The Chalco Institute of Technology and Higher Education (TESCHA) joined later, but, for the purposes of this article, the data refer to the initial nine institutions that took part in the diagnostic survey.

Figure 2. CLARISE for Distance Education website (https://sites.google.com/site/sinedclarise/).

The project seeks to generate knowledge on the use of OERs in technology-mediated environments and to support practice innovation, specifically in distance education. In addition, collaboration among researchers and academics via an online network is considered to be an innovative way of working that seeks to make full use of the potential of information and communication technologies (ICTs) and the Internet for sharing experiences and knowledge. Thus, the first question addressed in this article is: What challenges and perspectives can be identified for the open education movement in the distance education environment?

2. Theoretical framework

Distance education and competency development. The impact of incorporating technologies into learning environments is undeniable, and several emergent changes can be identified in ways of learning and, ultimately, in ways of teaching. Distance education emerged in response to the considerable rise in demand for places in higher education, due to the growth in the numbers of people gaining qualifications at lower educational levels and the need to make teaching-learning models more flexible. In distance education, many higher education institutions are now offering courses, bachelor's degrees and postgraduate studies (Guthrie & McCracken, 2010; ANUIES, 2001). Cabero (2008) noted that distance education had gone from being a mode with little social acceptance to an option with great potential, to which considerable effort and financial resources were being devoted.

Certain strategies can undoubtedly help to strengthen education systems, particularly in distance education, such as: creating a culture that is open to ICTs by means of training; creating national and Latin American inter-institutional collaboration networks; and forming regional multidisciplinary teams of researchers to contribute knowledge on the topic, for the purposes of developing new policies (Facundo, 2002). Likewise, when faced with the demands of the knowledge society, it is important to bear in mind that education systems need to change to ensure the effective inclusion of human resources in a complex society. From the perspective of complex thinking, competency-based training is one of the approaches that education seeks to express (Tobón, 2006).

In order to understand the teaching-learning process, it is essential to identify the competencies that its protagonists – teachers and students – should either have or develop. Although work has been done on selecting and defining teaching competencies for many years (Sugumar, 2009), the task cannot be considered simple or complete. However, the works by Zabalza (2003) and Perrenoud (2004), to name but a few of the authors who have proposed categories for describing teaching practice, do indeed provide the basis for a guide of competencies that characterise the profession. Some of these competencies are a knowledge of the curriculum and its content, the ability to communicate and interact with students, and the development of instructional designs or plans.

Regarding students' competencies, the Tuning América Latina project – involving 19 universities across Latin America – defines 27 general competencies (Tuning América Latina, 2008) that students at higher education institutions should develop in the course of their education, some of which are the ability to abstract, analyse and summarise; the ability to apply know-how in practice; the ability to plan and organise time; the ability to communicate in writing; the ability to do research; the ability to learn and keep abreast of new developments; the ability to look for, process and analyse information from a variety of sources; the ability to identify, frame and solve problems; the ability to work in teams; and the ability to work independently.

In distance education, teachers' and students' competencies come together in an integrated learning model or integrating project where online media serve as the platform for raising and solving problems (Medina-Rivilla, Domínguez-Garrido & Sánchez-Romero, 2008; Guohong, Ning, Wenxian & Wenlong, 2012). This is how the know-how, skills and attitudes of the actors in the education process are 'mobilised' to transform the learners' environment.

Open education movement and the development of OEPs. One of the branches of the open education movement focuses on the production, dissemination and reuse of OERs. In 2002, UNESCO coined the concept of OERs. The William and Flora Hewlett Foundation defines them as "teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge" (Atkins, Brown & Hammond, 2007, p. 4; Tuomi, 2013; Gurell, Kuo & Walker, 2010).

Today, projects for the creation, use and transformation of OERs are being promoted all over the world, as is the development of repositories and catalogues for their storage and classification. Some of the best-known examples are OpenCourseWare (OCW) from the Massachusetts Institute of Technology (MIT), Rice University, Carnegie Mellon University (CMU) and Yale University in the United States; China Open Resources for Education (CORE); the Japanese OCW Consortium; and the Paris Tech OCW project (OECD, 2007). In Mexico, Monterrey Tec stands out as an institution that has developed several projects, including the creation of the Temoa OER portal, the publication of academic content on MIT-OCW, the creation of the repository called DAR (Develop, Learn and Reuse), which stores studies and OERs, and the publication of e-books, among other initiatives (Burgos & Ramírez, 2011). Also worthy of note are the efforts made by the UAEM and the National Autonomous University of Mexico (UNAM) to disseminate knowledge via the Redalyc network and the SciELO online library (Aguado, Rogel, Becerril & Baca, 2009).

However, despite the efforts made, the use of OERs in educational practice is still in its early stages. Some of the reasons for this are the lack of development of technology-use competencies (OECD, 2007; Ochoa & Duval, 2009; Minguillón, 2010; Lane & McAndrew, 2010); the constraints of OERs due to the language, content and cultural traits of their producers, who are based mostly in English-speaking institutions (Amiel, 2013; D'Antoni, 2007, 2009; Baaren & Vries, 2010; Davis, 2010); and mistrust stemming from the lack of licensing arrangements to ensure that copyright is respected (Atkins et al., 2007; D'Antoni, 2007; Davis, Carr, Hey et al., 2010). In this context, the Open Educational Quality Initiative (OPAL) has suggested that efforts should be focused on the development of OEPs, and describes them as "a set of activities around instructional design and implementation of events and processes intended to support learning" (OPAL, 2011, p. 13).

Consistent with these initiatives, the open education movement is conceived as open access educational activities that are conducive to a range of educational practices: the use of OERs available on the Internet; the production of materials with open licenses; the selection of OERs via repositories and links that serve as OER catalogue infomediaries; the dissemination of practices in academic, governmental and institutional environments, etc.; and mobilisation towards educational practices (Ramírez, 2012b). Likewise, participation in communities of inquiry and practice is considered an indispensable strategy for sharing and disseminating knowledge and experiences on innovative pedagogical practices.

3. Method

The SINED-CLARISE for Distance Education project is based on the research-action method, where work is done on the topic of the open education movement in the distance education environment with a competency-based training approach. The project is being carried out in three main phases: a) inter-institutional diagnosis; b) human resources training; and c) implementation of open education movement research projects. Collaborative construction is fostered throughout the project, with the support of SINED distance education nodes.

This article reports on the first phase. Having conducted a diagnostic survey of the participants from the nine institutions involved in the initial project, it presents a descriptive exploratory study. The aim of the inter-institutional diagnostic survey was to identify the participants' knowledge of the open education movement, focusing on the production, dissemination and use of OERs, and the development of OEPs.

The questionnaire used in the diagnostic survey contained 30 open and closed questions exploring 4 areas: a) identification data for the participants and for OER application; b) the open education movement; c) distance education and innovation competencies; and d) networks. The sample population consisted of 42 initial project participants, who were invited to answer the survey. The total number of respondents was 40.

4. Results

Presented below are the results obtained for the four areas explored in the diagnostic survey.

Identification data of the participants and of OER application

The ages of the participants in the SINED-CLARISE for Distance Education project were homogenously distributed (Figure 3) across four relatively balanced segments. In terms of academic qualifications, 14 held doctorates, 13 held master's degrees and 7 held bachelor's degrees. In terms of roles, most were research lecturers (67%), followed by administrators (22%) and students (11%).

Figure 3. Ages of the participants in the SINED-CLARISE for Distance Education project

40-49 years (10)
> 50 years (6)
< 30 years (9)
30-39 years (11)

RUSC VOL. 10 No 2 | Universitat Oberta de Catalunya and University of New England | Barcelona, July 2013 | ISSN 1698-580X

421
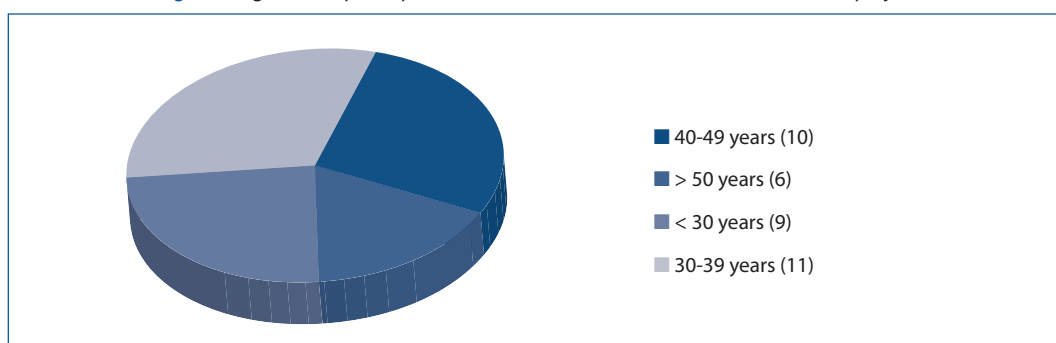
Two-thirds of the participants belonged to public institutions, and one third to private institutions. The educational levels to which they intended to apply OERs (Figure 4) were distributed across bachelor's degrees (higher education, 33%), postgraduate studies (higher education, 28%), continuing education (training, 11%) and others (extracurricular training courses, 28%).

Figure 4. Education levels to which the participants intended to apply OERs
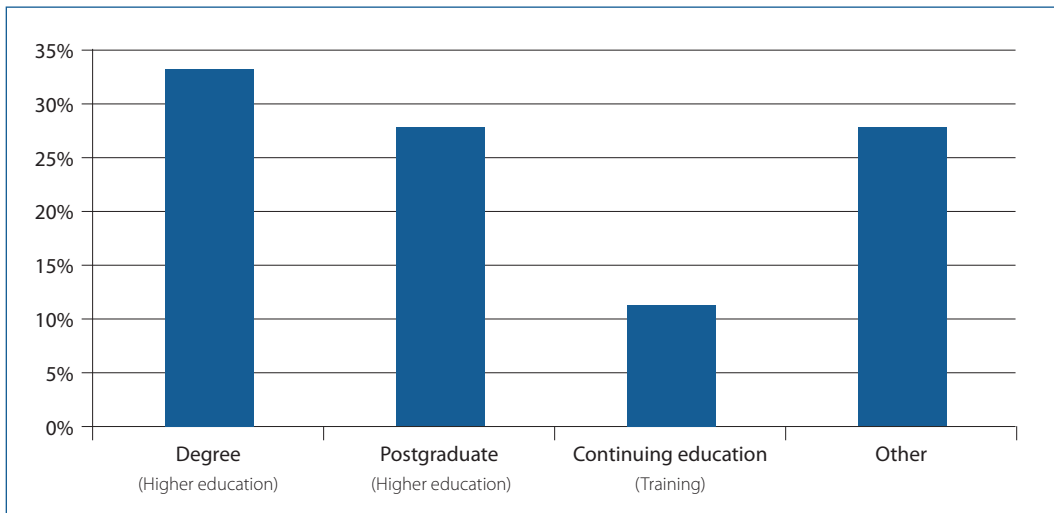
Open education movement

When the participants were asked about their level of OER expertise, the results showed that the distribution was homogenous (Figure 5) across those who considered themselves experts (31%), advanced (14%), intermediate (25%), beginners (22%) and, to a lesser extent, unaware of the topic (8%).

Figure 5. Perceived OER expertise

RUSC VOL. 10 No 2 | Universitat Oberta de Catalunya and University of New England | Barcelona, July 2013 | ISSN 1698-580X

422
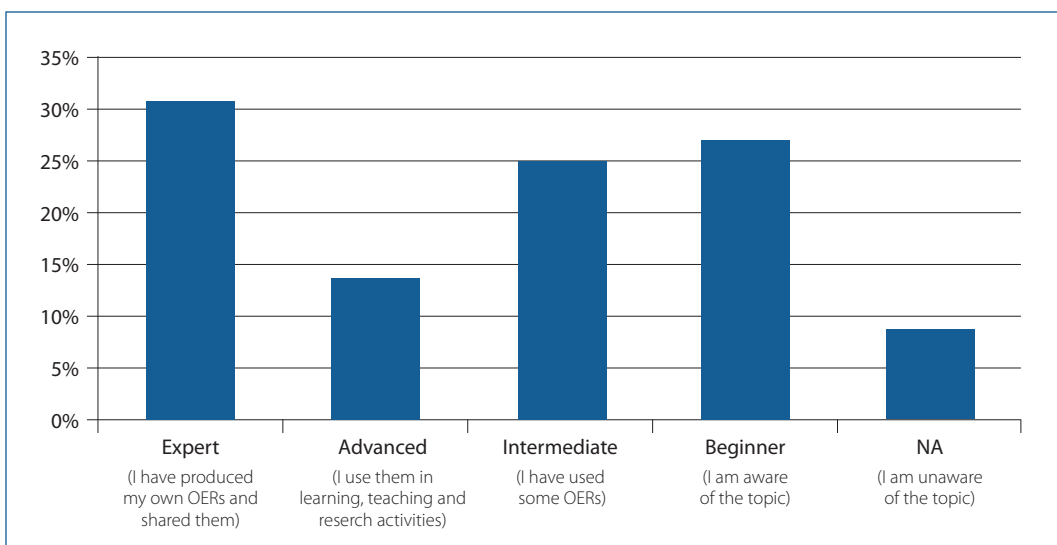
Some of the OEPs that the participants said that they had been involved in were OER documentation for courses, participation in CLARISE 2011 open education movement seminars, massive open online courses (MOOCs), mobile open educational resources (mOERs), repositories, nationally and internationally funded research networks and projects, as well as internships at the University of Nottingham, connected with repository harvesting and OER production and distribution, among others.

The participants' perceived barriers to or constraints on the use of OERs were mostly a lack of awareness of them, a lack of recognition for using them and a lack of policies on them (Table 1).

Table 1. Perceived barriers to or constraints on the use of OERs

There is a mistrust of resources produced by others	11	33%
There is a lack of awareness in the institution about copyright issues with regard to using and/or sharing OERs	**20**	**61%**
I do not have time to look for suitable materials	7	21%
I do not have access to the Internet	3	9%
Specialist software is required to modify the resources	7	21%
The quality of OERs is not as high as that of the resources I use	2	6%
OERs cannot be adapted to the cultural characteristics of our institution	5	15%
The language of OERs makes them difficult to use in our institution	7	21%
The use of OERs is not recognised or encouraged by my institution	**21**	**64%**
Education professionals' lack of interest in innovating	**18**	**55%**
Lack of national and regional policies to support the creation and use of OERs	**22**	**67%**
Lack of institutional policies to support the production and use of OERs	**24**	**73%**
Lack of skills and know-how to produce and use OERs	**19**	**58%**

Distance education competencies

Some participants stated that their knowledge or experience of competency-based training was intermediate (50%), while others considered themselves experts and advanced (33%), and, to a lesser extent, beginners or unaware of the topic (17%).

Innovation and networks

The participants tended to conceptualise innovation as an action that brings something new to a system or organisation (50%), and as a tangible outcome of creativity and ideas (40%). They said that they had put innovations into practice in their institutions, which is evidenced by the various projects that, nationally and internationally, have set new paradigms for educational innovation. Their plans clearly stipulate their support for innovation initiatives, as well as for programmes that promote them. They also expressed a predisposition towards innovation, specifically in relation to keeping abreast of developments in ICT use.

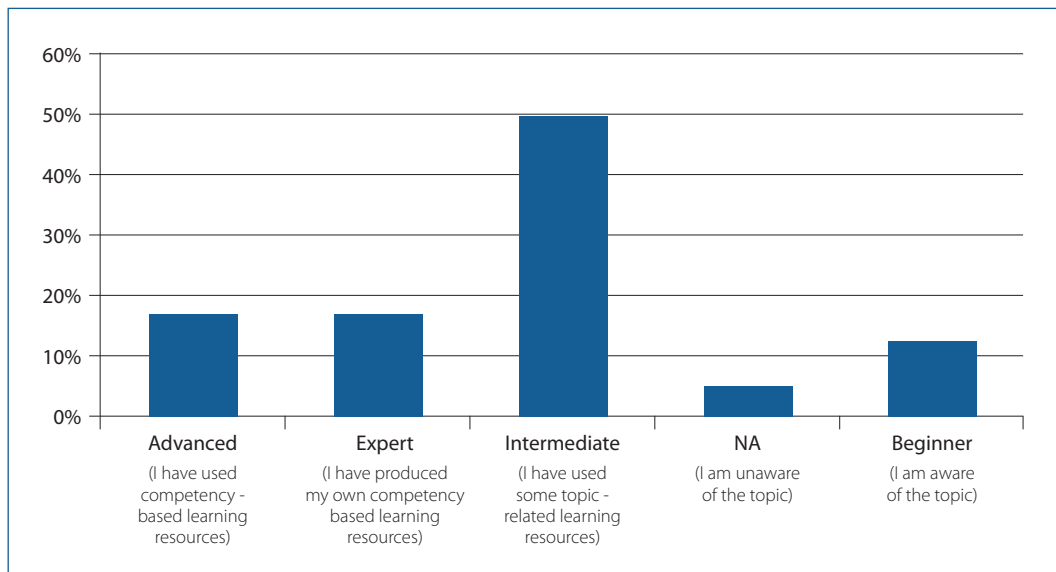Figure 6. Perceived knowledge/experience of competency-based training

Table 2. Interest in innovation expressed in institutional strategic plans

All of the institution's members of staff are involved in producing innovation	10	25%
Innovation is generated through specialist and/or research centres	6	15%
Innovation is defined in specific strategies, goals and targets	**16**	**40%**
Innovation is not an explicit topic in the institution's operations	4	10%

Finally, the participants said that they had participated widely in several academic networks of the SINED (69%), the CUDI (53%), the National Association of Universities and Higher Education Institutions (ANUIES, 75%), the Mexican Education Research Council (COMIE, 50%), the Mexican Network of Education Research Researchers (REDMIIE, 41%) and the Network of Graduate Studies in Education (28%), among others, such as CLARISE, the Education Research and Innovation Network of North-east Mexico (REDIIEN), EDUTEC, the Network of Working Normal School Alumni, the Strengthening Information Society Research Capacity Alliance (SIRCA), the American Educational Research Association (AERA), the Mexican Network of Researchers into Mobile Learning (ReMIAM) and the Adventist Virtual Learning Network (AVLN).

5. Discussion and conclusions

Based on a diagnostic survey of the project participants and the objectives set in the SINED-CLARISE for Distance Education project, the following challenges were identified: (a) the need to generate national and institutional policies that regulate and promote open access in educational practices; (b) the importance of developing OER management systems and open knowledge communication; and (c) the promotion of a culture of academic collaboration (which is perhaps the main challenge),

where the importance of sharing is recognised and OER production and use are promoted in distance education practices.

Furthermore, the perspectives in the SINED-CLARISE for Distance Education project could be opened up by means of the following actions: (a) the training of competency-development facilitators via the seminar due to be held in the second phase of the project, called "Training of educators in the distance education environment for the development of OER-use competencies", the aim of which is to develop digital and instructional design competencies to integrate OERs in distance education environments (this seminar will take the form of a MOOC and be delivered in 2013); (b) the promotion of innovative models with open access systems, where the experience gained through the CLARISE project (as a successful case) and the project participants' level of expertise will be of great help in promoting the production, use, dissemination and mobilisation of OEPs in distance education environments; and (c) mobilisation via networks, and innovation through the formation of a network that seeks to support OEPs and re-evaluate studies and innovation in distance education environments.

Finally, it is important to conclude this article with an invitation to contribute to the generation of new knowledge on OERs and the development of OEPs in online education environments, by means of inter and intra-institutional cross-sectional studies that combine the experience gained and innovatory efforts made in a variety of national and international educational contexts.

References

AGUADO-LÓPEZ, E.; ROGEL-SALAZAR, R.; BECERRIL-GARCÍA, A. [et al.] (2009). "Presencia de universidades en la red: la brecha digital entre Estados Unidos y el resto del mundo" [online article]. *RUSC. Universities and Knowledge Society Journal*. Vol. 6, No 1. UOC. [Accessed: 12 December 2012].
<http://redalyc.uaemex.mx/pdf/780/78011179002.pdf>

ANUIES (2001). *Plan Maestro de Educación Superior Abierta y a Distancia. Líneas estratégicas para su desarrollo*. Mexico: ANUIES

AMIEL, T. (2013). "Identifying barriers to the remix of translated open educational resources". *International Review of Research in Open and Distance Learning*. Vol. 14, No 1, pages 126-144.

ATKINS, D.; BROWN, J. S.; HAMMOND, A. (2007). *A Review of the Open Educational Resources (OER) Movement: Achievements, Challenges, and new opportunities* (Report for the William and Flora Hewlett Foundation). [Accessed: 12 October 2012].
<http://www.hewlett.org/uploads/files/Hewlett_OER_report.pdf>

BAAREN, J. van der; VRIED, F. de (2010). "How to Foster Sharing of Educational Resources?". *Open Ed 2010 Proceedings*. Barcelona: UOC, OU, BYU. [Accessed: 12 November 2012].
<http://hdl.handle.net/10609/4881>

BURGOS, J. V.; RAMÍREZ, M. S. (2011). "Movilización de recursos educativos abiertos: enriqueciendo la práctica educativa". *Revista Digital La Educación*. No 146. [Accessed: 12 September 2012].
<http://educoas.org/portal/la_educacion_digital/146/pdf/EXPR_vladimirburgos_ES.pdf>

425

CABERO, J. (2008). "La investigación en la educación a distancia en los nuevos entornos de comunicación telemáticos". *Revista Internacional de Ciencias Sociales y Humanidades, SOCIOTAM*. Vol. XVIII, No 2, pages 13-34.

D'ANTONI, S. (2007). "Open Educational Resources and Open Content for Higher Education". *RUSC. Universities and Knowledge Society Journal*. Vol. 4, No 1. [Accessed: 10 December 2012].
<http://www.uoc.edu/rusc/4/1dt/eng/dantoni.pdf>

D'ANTONI, S. (2009). "Open Educational Resources: reviewing initiatives and issues". *Open Learning*. Vol. 24, No 1, pages 3-10
<http://dx.doi.org/10.1080/02680510802625443>

DAVIS, H.; CARR, L.; HEY, J. [et al.] (2010). "Bootstrapping a culture of sharing to facilitate Open Educational Resources". *IEEE Transactions On Learning Technologies*. Vol. 3, No 2, pages 96-109.
<http://dx.doi.org/10.1109/TLT.2009.34>

DAVIS, V. (2010). "Questioning the Future of the Open Student". *Educause Review*. Vol. 45, No 4, pages 22-28.

FACUNDO, Á. (2002). *Educación virtual en América Latina y el Caribe: características y tendencias*. Bogotá: UNESCO-IESALC.

GLASSERMAN, L. D. (2012). "Documentación de experiencias de una práctica educativa abierta (pea) en un curso de educación superior". *Revista Electrónica Iberoamericana sobre Calidad, Eficacia y Cambio en Educación (REICE)*. Vol. 10, No 2. [Accessed: 12 September 2012].
<http://www.rinace.net/reice/numeros/vol10num2.htm>

GUOHON, G.; NING, L.; WENXIAN, X. [et al.] (2012). "The Study on the Development of Internet-based Distance Education and Problems**"**. *Energy Procedia*. Vol. *17-B, pages 1362-1368.*

GURELL, S.; KUO, Y.-C.; WALKER, A. (2010). "The pedagogical enhancement of open education: An examination of problem-based learning". *International Review of Research in Open and Distance Learning*. Vol. 11, No 3, pages 95-105

GUTHRIE, K. L.; MCCRACKEN, H. (2010). "Making a difference online: Facilitating service-learning through distance education". *The Internet and Higher Education*. Vol. 13, No 3, pages 153-157.
<http://dx.doi.org/10.1016/j.iheduc.2010.02.006>

LANE, A.; MCANDREW, P. (2012). "Are open educational resources systematic or systemic change agents for teaching practice?". *British Journal of Educational Technology. Vol.* 41, No 6, pages 952-962.
<http://dx.doi.org/10.1111/j.1467-8535.2010.01119.x>

NAPPA, N. R.; PANDIELLA, S. B. (2012). "Estudio y aplicación de objetos de aprendizaje a través del uso de recursos educativos abiertos". *Edutec, Revista Electrónica de Tecnología Educativa*. No 39. [Accessed: 12 October 2012].
<http://edutec.rediris.es/Revelec2/Revelec39/estudio_aplicacion_obejtos_aprendizaje_recursos_educativos_abiertos.html>

MEDINA-RIVILLA, A.; DOMÍNGUEZ-GARRIDO, M. C.; SÁNCHEZ-ROMERO, C. (2008). "Formación de las competencias de los discentes mediante un diseño integrado de medios". *Eccos Revista Científica*. Vol. 10, No 2, pages 327-357. [Accessed: 8 December 2012].
<http://redalyc.uaemex.mx/src/inicio/ArtPdfRed.jsp?iCve=71511645004>

RUSC VOL. 10 No 2 | Universitat Oberta de Catalunya and University of New England | Barcelona, July 2013 | ISSN 1698-580X

426

MINGUILLÓN, J. (2010). "When the mummy is digital: Preservation and dissemination". *Open Ed 2010 Proceedings*. Barcelona: UOC, OU, BYU. [Accessed: 12 December 2012].
<http://hdl.handle.net/10609/4963>

OECD (2007). *Giving Knowledge for Free. The Emergence of Open Educational Resources*. Paris: OECD Publishing.

OCHOA, X.; DUVAL, E. (2009). "Quantitative analysis of Learning Object Repositories". *IEEE Transactions On Learning Technologies*. Vol. 2, No 3, pages 226-238.
<http://dx.doi.org/10.1109/TLT.2009.28>

OPEN EDUCATIONAL QUALITY INITIATIVE (OPAL) (2011). *Beyond OER. Shifting Focus to Open Educational Practices*. OPAL Report 2011. OPAL. [Accessed: 12 October 2012].
<http://www.oer-quality.org>

PERRENOUD, P. (2004). *Diez nuevas competencias para enseñar*. Barcelona: Grao.

PERÉ, N. (2011). "Cultura de colaboración: ¿qué implica compartir y utilizar recursos educativos abiertos?" In: *Jornadas de intercambio docentes 2.0. Proyecto Sembrando experiencias de la ANEP*. [Accessed: 5 December 2012].
<https://sites.google.com/site/redclarise/archivero/4.2.NPere%28Uruguay-oct2011%29.pdf>

RAMÍREZ, M. S.; BURGOS, J. V. (coords) (2011). "Towards a Culture of Openness in Education in Latin America". *eLearning Papers*. No 23, 1-3. [Accessed: 15 December 2012].
<http://elearningpapers.eu/en/article/Towards-a-Culture-of-Openness-in-Education-in-Latin-America?paper=72110>

RAMÍREZ, M. S. (2012a). "Academic networks and knowledge construction". *Revista Española de Pedagogía*. Vol. 70, No 251, pages 27-44.

RAMÍREZ, M. S. (2012b). Preface. In: M. S. Ramírez and J. V. Burgos (coords.). *Movimiento educativo abierto: acceso, colaboración y movilización de recursos educativos abiertos* [eBook] [5-9]. Mexico: Lulú editorial digital. [Accessed: 10 October 2012].
<http://catedra.ruv.itesm.mx/handle/987654321/564>

RAMÍREZ, M. S.; BURGOS, J. V. (coords) (2012). *Movimiento educativo abierto: acceso, colaboración y movilización de recursos educativos abiertos* [eBook]. Mexico: Lulú editorial digital. [Accessed: 10 October 2012].
<http://catedra.ruv.itesm.mx/handle/987654321/564>

SALAZAR-RODRÍGUEZ, A. L.; RODRÍGUEZ-GÓMEZ, J.; CAMPOS-MADRIGAL, S. (2012). "Recursos educativos abiertos y estrategias de búsqueda e implementación en un ambiente de aprendizaje universitario". *Edutec-e: Revista Electrónica de Tecnología Educativa*. No 41. [Accessed: 10 October 2012].
<http://edutec.rediris.es/Revelec2/Revelec41/>

SUGUMAR, R. (2009). *Competency mapping of teachers in tertiary education*. Retrieved from ProQuest. ED 506207.

TOBÓN, S. (2006). *Formación basada en competencias. Pensamiento complejo, diseño curricular y didáctica*. Bogotá: ECOE.

TUNING AMÉRICA LATINA (2008). *Reflexiones y perspectivas de la educación superior en América Latina. Informe final / proyecto Tuning-América Latina-2004-2007*. [Accessed: 11 November 2012].
<http://tuning.unideusto.org/tuningal/>

RUSC VOL. 10 No 2 | Universitat Oberta de Catalunya and University of New England | Barcelona, July 2013 | ISSN 1698-580X

427

TUOMI, I. (2013). "Open Educational Resources and the Transformation of Education". *European Journal of Education*. Vol. 48, No 1, pages 58-78.
<http://dx.doi.org/10.1111/ejed.12019>

UNESCO (2002-2012). *2012 Paris OER Declaration*. [Accessed: 12 December 2012].
<http://www.unesco.org/new/en/communication-and-information/access-to-knowledge/open-educational-resources/what-is-the-paris-declaration/>

WAISMAN, E. R.; OLIVARES, M. M. (2011). "Los desafíos de la inclusión digital en la formación de profesores". In: *Primeras Jornadas sobre Investigación y Experiencias en Educación y Tecnología en la Universidad Nacional de San Juan. La interacción en la construcción de la presencia cognitiva*. Argentina.

ZABALZA, M. (2003). *Competencias docentes del profesorado universitario*. Madrid: Narcea.

RUSC VOL. 10 No 2 | Universitat Oberta de Catalunya and University of New England | Barcelona, July 2013 | ISSN 1698-580X

428

About the Author

María Soledad Ramírez Montoya
solramirez@tecvirtual.mx
Tenured Researcher, Research Chair in Innovation in Technology and Education, Monterrey Institute of Technology and Higher Education, Mexico

From Ciudad Obregón, Sonora, Mexico, María Soledad Ramírez Montoya holds a qualification as a Preschool Education teacher (Normal School of Sonora, Mexico) and a bachelor's degree in Education Sciences (Sonora Institute of Technology, ITSON).

With the support of the Mexican National Council of Science and Technology (CONACYT) and the Ministry of Education of Sonora, she gained a master's degree in Educational Technology, and doctorates in Education and in Educational Psychology: Instruction and Curriculum (University of Salamanca, USAL, Spain).

She is now a tenured research lecturer in the Graduate School of Education at Monterrey Institute of Technology and Higher Education (Monterrey Tec). She participates in the Network of Graduate Studies in Education, the Corporation of Universities for Internet Development (CUDI), the Education Research and Innovation Network of North-east Mexico (REDIIEN) and the American Educational Research Association (AERA), in projects of the Mexican National Centre for the Assessment of Higher Education (CENEVAL), in research projects of the CONACYT, and in the assessment committees of several universities. She is an associate researcher in the Education Research Centre at Monterrey Tec and a member of the Mexican National System of Researchers.

In her role as a tenured research lecturer, she is responsible for managing the Research Chair in Innovation in Technology and Education, and for coordinating the activities of a group of researchers. She also supervises the master's degree dissertations and doctoral theses of some of the student members of the research team. Her work in developing the Chair is supported by her experience as a researcher and assessor of projects promoted by various bodies, her participation in networks with national and international institutions for the development of educational activities, and her contributions to books on quality, technological resources and research in education (*Calidad y efectividad en instituciones educativas*, 2011; *Objetos de aprendizaje e innovación educativa*, 2006; *Educación e investigación, retos y oportunidades en el nuevo milenio*, 2011; *Modelos de enseñanza y métodos de casos: estrategias para ambientes innovadores de aprendizaje*, 2010).

Tecnológico de Monterrey
Avd. Eugenio Garza Sada, 2501. Sur Col. Tecnológico C. P. 64849
Monterrey, Nuevo León
Mexico
<http://www.ruv.itesm.mx/convenio/catedra/>

http://rusc.uoc.edu

Challenges and perspectives for the open education movement in the distance education environment...

RUSC VOL. 10 No 2 | Universitat Oberta de Catalunya and University of New England | Barcelona, July 2013 | ISSN 1698-580X

430