

Open Access: basic concepts and experiences in Latin America

Edgardo Civallero

With the collaboration of Sara Plaza

Introduction

The Open Access philosophy has become an invaluable tool for guaranteeing free access to information in a Knowledge Society deeply marked by digital divides, copyright barriers and new forms of information illiteracy. Information has the power to improve development, to provide solutions to urgent problems, to recover identities from oblivion, to assert rights and values, and to help personal and professional growth. In short, information is a key element in the achievement of the social welfare that any people deserve. On the one hand, when information is free accessed, using new digital technologies and copyright in a way that is correct and appropriate, Open Access movement guarantees equality of opportunities to access strategic knowledge, which is within everybody's rights. On the other, Open Access also guarantees the freedom of expression and fosters the cooperative and active creation of healthy democratic societies. Only within an informed context can new proposals be submitted and appropriate decisions made towards the development of a country, the education of a community and the personal and professional growth of the persons that make it up, with no distinctions, barriers or differences at all. The following paragraphs are intended as a general description of the fundamental concepts around this way of working and as an introduction to the main initiatives and best practices on Open Access developed in Latin America.

History in outline

The start of OA movement coincided with the incipient development of new technological possibilities that took place in the international electronic networks. Maybe the first milestone in this history was the launch of ArXiv (<http://www.arxiv.org>, August, 1991) whose author, Paul Ginsparg, defined it as a system of automatic distribution for research papers without publishing operations associated with peer-review. These first "Free Scientific On-line Archives" -as they were named at the beginning- were simple scientific articles collections that authors stored for being free accessed before sending them to specialized journals that might publish them after their assessment.

The great success attained by this system led to a detailed study and a more profound and complex development of it. At the same time, many researchers started, regardless of one another, to facilitate *pre-prints* (pre-publishing versions) of their papers in their personal web pages. This way, long before their edition, those texts were made available -in a format not yet definite- for their reading; professionals could update their knowledge and access the most recent researches within their discipline, and authors could receive readers' critiques and opinions before sending the text to the publisher.

This attempt to liberate knowledge was a revolutionary system that sooner rather than later would win innumerable advocates, especially in the field of the so-called "hard" sciences.

Its ongoing development put a new complexion on the situation and in 1992, the ARL

(Association of Research Libraries, United States, <http://www.arl.org>), through SPARC (Scholarly Publishing & Academic Resources Coalition, <http://www.arl.org/sparc>) called the first meeting to discuss the matter: *Scholarly Publishing on the Electronic Networks: Visions and Opportunities in Not-to-Profit Publishing*. The urgent need for detailed study of the question proved that Open Access enjoyed great prestige and increased the number of users exponentially.

In 1993, CERN (<http://public.web.cern.ch/Public/Welcome.html>) announced that anyone could use WWW technologies free of charge. This fact –of the greatest importance for our contemporary history- made the latest technology available to the OA movement for free (not restricted or controlled by anyone else and without payment).

In 1994, Stevan Harnad suggested the idea of *self-archiving* with a completely original new article: *A subversive proposal* (<http://www.arl.org/scomm/subversive/sub01.html>). In the text the author collected ArXiv initiative and developed such proposal for use in different fields of knowledge, basically. Three years later, Harnad launched CogPrints (<http://cogprints.org>), the first open store of research articles in areas such as psychology, neurosciences, linguistic and philosophy.

In 1997, MEDLINE (a service offered since 1966 by the United States National Library of Medicine) turned into Open Access through the program PubMed (<http://www.ncbi.nlm.nih.gov/entrez>). Such great step forward was attained thanks to the proposal submitted by several provosts from the United States (*University Provosts' Initiative*, http://www.econ.rochester.edu/Faculty/PhelpsPapers/Phelps_paper.html) who, timely, pointed out the “desirability” of Open Access to the information get from scientific test or research in every field of knowledge.

From 1998 onwards, several editorial boards broke off with their firm' headquarters and begun to launch their own Open Access journals, supported by SPARC and its “Independence Declaration”. At the same time, delegates from the Public Health Information System of Latin America and the Caribbean (BIREME, <http://www.bvs.br/bvs/E/ehome.htm>) wrote the *San Jose Declaration* (<http://www.bireme.br/bvs/por/edeclar.htm>). Later, this organization also founded the Health Virtual Library (BVS in Spanish) and created SciELO (Scientific Electronic Library Online, <http://www.bireme.br/bvs/por/edeclar.htm>), a service commonly known as the “Spanish PubMed”.

The urgent need for technical developments that supported this ideological movement fostered the appearance of the Open Archives Initiative (OAI, <http://www.openarchives.org>) in 1999. This new plan –which develops gradually- gave rise to a system of standards, protocols and metadata agreed by consensus, that allows archive and publishing systems within OA modality to communicate to one another and exchange information.

Also in 1999, the United States National Institute of Health created E-Biomed and shortly afterwards PubMed Central was announced (February, 2000). On the part of UNESCO, it was issued the *Declaration on Science and the Use of Scientific Knowledge*, which added an institutional framework to the OA movement.

In 2000 the first Open Access initiative started from the private sector, BioMedCentral (<http://www.biomedcentral.com>), was presented, which at present holds a great deal of medical journals that can be free accessed in full. The system implies a fee on the part of every author that wants to have an article published. This funding is currently spreading: researchers and institutions provide the money for the publication, since a

broad spread of the information got from scientific research should become their team's top priority. The Howard Hughes Medical Institute (<http://www.hhmi.org>) can be quoted as a perfect example, for in 2002 they undertook to pay the fees for publishing the work of their researches under Open Access policies.

In 2001 PLoS (Public Library of Science, <http://www.plos.org>) was launched and more than 25.000 prominent scientists signed a letter where they stated their commitment to publish only in OA journals. At the same time it was issued the *Declaration of Havana Towards Equitable Access to Health Information* (<http://brmg.bireme.br/crics5/I/declara.htm>) that placed emphasis on the urgent need of freeing the bio-medical knowledge from the control of a small group of the world population, since it consists of strategic information for human welfare that should not be constrained by a few.

In February, 2002, it was created BOAI (<http://www.soros.org/openaccess>), an open access initiative from Budapest. In April, 2003, at the Bethesda Meeting on OA Publishing, it was stated the meaning of "Open Access publications". Shortly afterwards, in October, it was signed the *Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities* (http://www.ceic.math.ca/Information/berlin_declaration.pdf) and most European scientific institutions promised to adopt the OA model, encouraging scientists to publish their works in such modality.

In July, 2004, the Science & Technology Committee of the British House of Commons published a report that strongly recommended that the research carried out with public funding should be available under OA conditions. This fact means that the intellectual production generated thanks to public funding cannot be made with business or profit motive in mind, as it was the case with any periodical with restricted access.

In September, 2005, during the International Seminar on Open Access (in parallel with the IX World Conference on Public Health and Libraries, <http://www.icml9.org>), it was signed the *Declaration of Salvador de Bahia on Open Access*, that encouraged the international scientific community to guarantee Open Access, to foster OA journals, to promote the inclusion of knowledge from developing countries in a global environment, and to insist on governments setting free the information got from research done with public funding. Presently, this matter discussion is one of the scheduled events at the World Summit on the Information Society (<http://www.itu.int/wsis>) and at several national and international conferences dealing not only with Information Studies and Librarianship, but also with the disciplines where knowledge use and management are essential for development and growth.

Basic ideas

Open Access movement, also known as *Open-Access Publishing* or *Free Online Scholarship*, is an international attempt to guarantee free access to the greatest variety of updated information sources, especially academic one. The project is a joint effort that seeks to access cultural and scientific resources without payment or restrictions of some sort.

Open Access tries to eliminate access barriers, especially economic ones. The kind of literature that should remain free is the one provided by researchers with no profit motive in mind, including peer-review articles in print as well as pre-prints without peer-review that want to be made available on-line for scientific community assessment

and new findings spreading.

Open Access means the availability of free texts on the public Internet, which can be searched, read, downloaded, copied, spread, printed, linked, browsed, indexed, turned into software data and used without technical, legal or financial barriers. Such availability carries with it the authors' permission for spreading their work **free**, and the development of basic systems and services necessary for the proposal to be successful. Open Access consists of two complementary strategies intended to attain such purpose in a skillful way:

- Self-archiving. Set of tools and technical assistance that allows each author to self-store their documents in Electronic Open Archives. These archives or *repositories* - which usually meet OAI standards- allow readers to have free access to the documents and to download full texts. On many occasions, these archives assume the form of a Digital Library; however, it should be noticed that not all Digital Libraries provide open access documents.
- OA Journals. Publications that allow readers to access their contents without asking them for any subscription fees. They collect money for paying costs from other sources such as foundations and governments, universities and laboratories, donations, marketing, researchers' contributions, etc. They are intended to widespread knowledge removing economic barriers between information and users.

The copyright's part in this play is one of great importance: to give authors the control over their work, assuring them the right to be acknowledged and quoted as the authors. The general principle of OA requires that authors guarantee everybody's right to access, download, copy and redistribute their works. However, it also entails recognizing their authorship, not allowing readers to modify those works or to reproduce them in great numbers. It is permitted to print a small number of copies for personal use and to show the work in a public place. Both the static nature of the article (contents cannot be modified) and the clearly specified authorship, help guarantee author's responsibility, something very important in academic publications.

At this point it should be highlighted the fact that OA materials are subject to a detailed quality control. Both OA archives and journals have recognized editorial boards to deal with peer-review processes, choose articles and organize metadata to be accessed in a proper and coherent way. Therefore there is no lack in their potential quality and the publication remains within an academic and professional frame of reference.

On-line diffusion of peer-reviewed literature is much cheaper than printed one. In this sense, as it has been stated in the previous part, there is a great incentive to support economically the costs of this proposal on the part of universities, organizations, libraries and foundations.

As the BOAI (Budapest Open Access Initiative) explains, OA movement combines the new digital technologies with the old scientific tradition consisting in publishing the results of a research in specialist publications without waiting for any payment in return or seeking rewards of some sort.

In spite of having been limited to small portions of scientific knowledge, OA has proven that it is not only economically possible, but also very attractive to the readers and an excellent way of increasing authors' visibility worldwide.

It is expected that, by removing the barriers that still remain at present, research can progress at a higher speed, contributing to education improvement and the learning

exchange between “the rich” and “the poor” and the other way round. Therefore, this literature will be more useful and become the basis for bringing people together in an intellectual talking.

OA in Latin America

Latin America has access to the main international OA proposals, which gives professionals the opportunity and freedom to download documents regarding a wide range of updated areas of knowledge. Maybe the best known website is DOAJ (Directory of Open Access Journals, <http://www.doaj.org>) managed by the University of Lund (Sweden) that offers around 2400 Open Access journals on different subjects grouped in 18 subject matters. Sites of great impact are for instance Eprints (<http://www.eprints.org>, intended to foster OA developments, where can be highlighted library documents archive, E-LIS), Free Full Text (with 7000 academic journals, <http://www.freefulltext.com>), Highwire Press (to some extent but not completely OA newspaper and periodicals library, around 1000 titles, organized by the University of Stanford, <http://highwire.stanford.edu>), OAISTER (designed by the University of Michigan with 3 million publications somehow difficult to find in other repositories, <http://oaister.umdl.umich.edu/o/oaister>) and PNAS (Proceedings of the National Academy of Sciences of USA, <http://www.pnas.org>). Likewise, there are OA sites that are specialized in a particular subject matter, such as ChemWeb (Chemistry, <http://chemweb.tradepub.com>) or RePeC (325.000 documents on economics, <http://ideas.uqam.ca>), to name just a few.

Among the great deal of disciplines with OA proposals, Medicine and Public Health have shown that it is feasible to reach the highest levels of diffusion through this particular way of accessing knowledge. Such enormous spread responds to the urgent need for updated medical knowledge in Latin America. This encourages professionals to seek theoretical and practical information that may help them meet the critical situations faced day after day. In both areas, the most popular sites, together with the above mentioned PubMed and MEDLINE, are Free Medical Journals (1460 publications, <http://www.freemedicaljournals.com>), *Guías Clínicas* (links to experimental guidelines supported by convincing evidence, free accessed through <http://www.guideline.gov>), HINARI (<http://www.healthinternet.org/scipub.php>) and Cochrane Library (<http://cochrane.bireme.br>).

OA sites include directories (DOAR, Directory of OA Repositories, <http://www.opendoar.org>) and registries (ROAR, Registry of OA Repositories, <http://archives.eprints.org>), intended to arrange neatly the increasing number of sites that join OA movement. As detailed examples, DOAR arranged 60 OA sites for Medicine and ROAR organize 755 archives, 84 consisting of electronic publications.

The problem with all these sites in Latin America is the language: they are written in English, a sort of *lingua franca* in professional circles worldwide. This feature –present in the entire WWW universe- can turn into a serious obstacle, difficult to overcome by many Latin-Americans that only speak the national languages of their region (Spanish, Portuguese, Guaraní, Quechua, Aymara). In addition, their local reality uses to be poorly reflected in the contents of such sites. Hence, encouraging regional approaches that bring together particular features and reflect interesting qualities and the typical nature of this part of the continent represents a great challenge: it might allow readers to

access the knowledge in their national languages and facilitate the spread of studies carried out by local professionals.

Among the most interesting proposals that have been established in Latin America, special mention deserves the *Biblioteca Digital Andina* (Andean Digital Library, documents focused on the region, biodiversity, indigenous languages, Andean culture and integration policies, http://www.comunidadandina.org/bda/home_biblio.htm), *Cybertesis* (electronic thesis from international universities, arranged by the University of Chile, <http://www.cybertesis.net>), REVICIEN (Spanish Scientific Journals Web including 13 different subject matters, <http://www.revicien.net>) and RedALyC (Scientific Journals from Latin America, the Caribbean, Spain and Portugal, web supported by the National Autonomous University of Mexico, <http://redalyc.uaemex.mx>). In Librarianship and Information Studies can be quoted once more the effort made by E-LIS (with editorial board members from all countries of Latin America, <http://eprints.rclis.org>) and by DoIS (13.000 OA articles, <http://wotan.liu.edu/doi>), which facilitates excellent material concerning the different tasks performed by professionals dealing with knowledge management.

In the field of Public Health the most ambitious project, used and recognized, is the already mentioned *Biblioteca Virtual de Salud* (BVS, Health Virtual Library, <http://www.bireme.br/bvs/E/ehome.htm>), an initiative developed by BIREME (Public Health Information System of Latin America and the Caribbean), OPS (Pan-American Health Organization) and WHO. Working as a digital library (what does not necessarily means entirely OA collections and services), it is organized according to country sections (some of them still under construction). One of the most important elements of this library –also arranged by country sections- is the model of electronic publication SciELO (Scientific Electronic Library Online, <http://www.scielo.org>), which storages scientific publications of very good quality following OA model.

SciELO permits to access full texts of prestigious regional publications, removing the barriers that make it difficult to get strategic information in geographical areas where such knowledge has an extremely practical value.

Within these Hispano American sites, it is essential to point out a project that is still being developed: the Latin American Open Archives Portal (LAOAP-LANIC, <http://lanic.utexas.edu/project/laoap/indexesp.html>), intended to collect and spread regional grey literature according to OA standards.

In addition, Digital Libraries have experienced a significant increase in number in recent years. Many of them are simple digital resources indexed to facilitate the encounter with users and filter out digital documents on the Web whose poor quality is not suitable for their readers. Even if this task is of great value, Digital Libraries not always respond to OA model. However, there are a number of them connected with a state institution that make possible to fully access many different texts.

Within the field of Science and Technology, some of the most interesting designs are presented by the *Biblioteca Digital del Sistema Tecnológico de Monterrey* (Monterrey Technological System Digital Library, Mexico, <http://biblioteca.itesm.mx>), the *Biblioteca de Referencia en Ciência & Tecnologia* (Reference Library on Science and Technology, Brazil, <http://www.prossiga.br/referencia>) and the *Biblioteca Virtual del Ministerio de Ciencia y Tecnología* (Ministry of Science and Technology Virtual Library, Costa Rica, <http://www.micit.go.cr/biblioteca/index.htm>). In more general cultural spheres, it is worth mentioning the *Biblioteca Digital de la Fundación Germán Sánchez Ruipérez* (Germán Sánchez Ruipérez Foundation Digital Library, Spain,

<http://www.fundaciongsr.es/documentos/frames.htm>), the *Biblioteca Virtual Miguel de Cervantes* (Miguel de Cervantes Virtual Library, Spain, <http://cervantesvirtual.com/index.shtml>) and *Librodot* (<http://www.librodot.com>). All of them put in the users' hands a series of digital works regarding particular subject matters

Also of value are the Latin American digital libraries focused on education matters. In outline, the following initiatives attract great attention: works by the *Instituto de Inovação Educacional del Ministério da Educação* (Institute of Educational Innovation belonging to the Ministry of Education, Portugal, <http://www.iie.min-edu.pt/biblioteca/index.htm>), CREFAL Digital Library (Mexico, http://www.crefal.edu.mx/biblioteca_digital), the OREALC / UNESCO Digital Library (Chile, <http://www.unesco.cl/esp/biblio/index.act>), *Biblioteca Virtual de Educação* (Education Virtual Library, Brazil, <http://bve.cibec.inep.gov.br>), the *Biblioteca Virtual de Educação à Distância* (Off-site Education Virtual Library, Brazil, <http://www.prossiga.br/edistancia>), *Biblioteca Digital del Instituto de Estudios Avanzados de las Américas* (OEA, Institute of the Americas Advanced Studies Digital Library,

http://www.educoas.org/portal/es/ineam/bib_ineam.aspx?culture=es&navid=201), *Biblioteca Virtual del Instituto Educativo* (Educational Institute Digital Library, Argentina, <http://www.terras.edu.ar/biblioteca.asp>), *Biblioteca Virtual do Estudante Brasileiro* (Brazilian Student Virtual Library, <http://www.bibvirt.futuro.usp.br>), *Centro de Documentação del Portal Observatório Latino-Americano de Políticas Educacionais* (Documentation Center of Latin American Observatory of Educational Policies Portal, Brazil, http://www.lpp-uerj.net/olped/centro_documentos_online.asp), *Centro de Información sobre la Educación Superior* (High Education Information Center, Mexico, <http://www.anuies.mx>), *Consejo Nacional de Acreditación del Ministerio de Educación* (Accreditation National Council belonging to the Ministry of Education, Colombia, <http://www.cna.gov.co>), IESALC *E-textos* (E-texts, Venezuela, <http://www.iesalc.unesco.org.ve>), *Programa de Promoción de la Reforma Educativa en América Latina y el Caribe* (Promotion Program of Education Reform in Latin America and the Caribbean, <http://www.preal.cl/>) and *Red Latinoamericana de Información y Documentación en Educación* (Latin American Web on Education Information and Documentation, <http://www.reduc.cl/homereduc.nsf/?Open>). All of them, in one way or other, follow OA model and offer a vast diversity of documents that can be free accessed, downloaded and used.

Brazilian and Mexican digital libraries stand out because of their number, and the same happens with the official documentation centers that offer full information. Within the latter can be highlighted the following: *Biblioteca Virtual del Ministerio de Economía* (Ministry of Economy Digital Library, Argentina, <http://cdi.mecon.gov.ar/biblio.htm>), *Biblioteca de la Universidad Sergio Arboleda* (Sergio Arboleda University Library, Colombia, <http://www.usergioarboleda.edu.co/biblioteca/index.htm>), *Biblioteca Digital del Congreso de Perú* (Peru Congress Library, <http://www.congreso.gob.pe/biblio/digital.htm>), *Biblioteca Pública Digital* (Digital Public Library, Argentina, http://www.educ.ar/educar/superior/biblioteca_digital), *Biblioteca Virtual* (Virtual Library, Brazil, <http://www.bibliotecavirtual.org.br>), *Biblioteca Virtual de Ciências Sociais* (Social Sciences Virtual Library, Brazil, <http://www.prossiga.br/csociais/pacc>), *Biblioteca Virtual de la Biblioteca Luis Angel Arango* (Virtual section of the Luis Angel Arango Library, Colombia,

<http://www.lablaa.org:8088/compass>), *Biblioteca Virtual de Ciencias Sociales de América Latina y el Caribe* (Latin America and the Caribbean Social Sciences Virtual Library, <http://www.clacso.org/wwwclacso/espanol/html/biblioteca/fbiblioteca.html>), *Biblioteca Virtual Universal* (Universal Virtual Library, Argentina, <http://www.biblioteca.org.ar/catalogo.asp>), and the virtual sections of both the *Fundação Biblioteca Nacional* (National Library Foundation, Brazil, <http://www.bn.br>) and the *Sistema de Bibliotecas de la Universidad Católica de Valparaíso* (Catholic University of Valparaíso Libraries System, Chile, <http://biblioteca.ucv.cl>).

Finally, it is worth noticing the virtual library project suggested and developed by the UNESCO in collaboration with several regional bodies in Latin America and the Caribbean. The initiative, still under construction, is called *Biblioteca Digital Latinoamericana y Caribeña* (BD-LC, Latin American and Caribbean Digital Library <http://193.146.129.47:8080/bdic>) and aims to store and diffuse OA materials, using a Z.3959 server and the latest electronic information management standards. At the beginning only the National Libraries will be involved, however, it is expected that other units will join the project at different stages.

Conclusions

Global world faces a challenge that has long been present in all societies; however, the so-called Information Society has put a new complexion on the situation. We are talking about the human knowledge trade. Knowledge has become an important consumer and profit-making article due to the importance attached to the new communication and information technologies used to manage it. However, we should not forget that information is also part of our human heritage and its free use should be permitted to everybody. Barriers of any sort between knowledge and its users denotes lack of ethic values on the part of those who build them, for peoples progress, development, mental growth and spiritual welfare depend on their access to cultural heritage, scientific discoveries, new developments, updated information...

Problems faced by Latin America in different spheres at different levels turn information into a strategic point if crisis, difficult times and shortages are to be solved. Only on safe educated and (in)formed grounds true development can be attained. Thanks to information it is possible to understand the past, to learn the mistakes done at the present time, and to design and built, step by step, a better future.

Open Access is not only a set of tools and technologies that make it easier to use this good: it is a real philosophy. We are talking about a particular way of thinking, about a humanist movement that expresses the need for removing the barriers built by just a few hands –editors, companies, databases- that prevent knowledge from being free accessed by everyone.

Besides facing the logic rejection on the part of those who have always economically benefited from others' needs, OA also meets a much more subtle difficulty. Its own nature, history and growth has put it in a position of entire dependence on technological developments: computers, virtual communication webs, databases... This means are not so widely spread in our societies as it might be thought, not even in the so-called "developed". There is a huge digital divide acknowledged by the highest education authorities through the length and breath of the planet.

The divide mentioned causes a new form of illiteracy, known as "information illiteracy": people without computing education, not knowing how to carry out a

thorough search of information, not knowing very much about the Internet or not having access to the World Wide Web. Hence, at this point, we need to make ourselves the following questions: for whom is “open” the so-called Open Access? Is it “open” to everybody or only to a few that have the resources to do it? As librarians, we should never lose sight of our main objective, for this is something that may happen when we change our centre of attention and turn it from what other’s really need to what we think they need.

Our efforts should go into setting knowledge free and removing the gag that prevents it from spreading widely. We should be able to take it everywhere without forgetting “how” we are going to do it. We should know that even when we set in front of them, at their disposal for any question they may have, all the information we consider to be relevant, still many hands will remain tied up and many eyes blind.

To let ourselves be blinded by the marvels of technology is very typical of human beings. To study the situation first and act according to the reality that surrounds us is common among intelligent professionals. Let’s do the latter and use the formal set of ideas acquired at the classrooms and the experience gained after years and years trying to put them into practice, and strive for a place, a society and a world where everyone can enjoy everybody’s basic rights: to study, to be informed, to express him/herself, to think, to have his/her own opinions, to make his/her own decisions... All this is what can be achieved with relevant information. The information that an active and committed movement as Open Access wants to set free.