**Colombia:**

**An Overview of Open Educational Resources (OER) Projects, Policies, and Research**

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Colombia has a population of 47.7 million. With a GDP of US$369.6 billion and a GNI per capita of US$7,020, it belongs to the group of upper middle income countries.[[1]](#footnote-0) In terms of digital development, Colombia shows extraordinary advances in Internet penetration and the regulatory framework for the telecommunications sector and the use of information and communication technologies (ICTs) for development in the last years. It is clearly one of the countries in South America were open educational resources and practices are being adopted actively.

In a first section of this document, we will provide information regarding Colombia’s infrastructural and technical issues. The second part describes the country’s tertiary education system. In a third section, we analyze Colombia’s regulatory and policy situation regarding ICT and education. The fourth part of this profile presents the more visible OER initiatives in the nation. Finally, the last section provides a list of academic articles regarding OER in Colombia.

**1. Infrastructure and technical readiness for OER adoption**

Colombia has 55.9 % of Internet penetration, which positions the country, next to Uruguay, Chile, and Argentina, at the top of South America for this indicator.[[2]](#footnote-1)

Chart 1:

Internet Penetration (%)



Source: [www.internetworldstats.com](http://www.internetworldstats.com/) (data updated for 2011)

Regarding broadband penetration, Colombia has 5.6% of mobile Internet penetration and 5.7 of fixed Internet penetration. Such numbers indicate that broadband penetration can improve in the following years:

Chart 2:

Broadband Internet Penetration (%)



Source: ITU 2011, García Zaballos & López-Rivas 2012

In terms of broadband speed, at 3.96 Mbps, Colombia is closer to Argentina, Brazil, and Chile than to the rest: of South American countries.

Chart 3:

Broadband Speed (Mbps)



Source: Galperin and Ruzzier 2011, cited in García Zaballos & López-Rivas 2012

Finally, in concern to the cost of Internet, Colombia has one of the lowest costs in the region at 30 USD PPP per Mbps:

Chart 4:

Average Price per Mbps (USD PPP per Mbps)



Source: Galperin and Ruzzier 2011, cited in García Zaballos & López-Rivas 2012

In conclusion, regarding infrastructure and technical readiness, Colombia is a very well positioned country for any kind of digital development.

**2. Educational framework. Higher Education Institutions (HEIs) in Colombia**

Colombia’s tertiary education system consists of 286 HEIs[[3]](#footnote-2); 73 of them are universities: 32 public, 41 private (Cuenca 2013a). According to the National Planning Department of Colombia, the enrolment rate grew from 24.5% in 2002 to 37% in 2010.[[4]](#footnote-3) Almost half of the students are enrolled in private universities (Cuenca 2013a). One interesting aspect about such increase relies in the fact that, according to the Ministry of Education of Colombia, registration in technical training institutions rose from 19.5% of the total enrolment in 2002 to 34% in 2010.[[5]](#footnote-4)

The National Planning Department has set the goal of increasing coverage to 50% by 2014 while simultaneously assuring quality through accreditation processes.

In regard to distance higher education, Colombia has extensive experience since the eighties. Cuenca (2013b)[[6]](#footnote-5) states that in 1982, the government established the Distance Education Subsystem, which did not successfully replace the popular television and radio educational programs existing at the moment. In the nineties, Colombia took the first steps to use the Internet for distance education. In 1995, the government created the Colombian Association of Distance Education (ACESAD). By 2008, several Colombian HEIs were offering distance education programs (enrolment in this modality amounted to 10% of the total). One of the institutions that pioneered distance education in Colombia is the Universidad Nacional Abierta y a Distancia – UNAD.[[7]](#footnote-6)

**3. Legal and policy aspects**

Colombia has been a very active country in creating and adapting legislation to promote ICT development. A clear example of it is the *ICT Law*, promulgated in 2009, which confirms the significance that the country assigns to ICT access and use, sound infrastructure, content development, and digital skills building (Guerra & Oviedo 2011). The ICT Law allowed for the conversion of the Ministry of Communications into the Ministry of Information and Communication Technology. Under the ICT Ministry leadership, Colombia has managed to achieve extraordinary advances in ICT infrastructure, Internet penetration and connectivity, education and e-government, among others.[[8]](#footnote-7)

With regard to copyright, Colombia –through the Karisma Foundation–[[9]](#footnote-8) is a dynamic member of Creative Commons (CC), promoting alternative licensing for intellectual and artistic property. Open access and OER are priority goals in Karisma Foundation’s work with CC.

Under the ICT Ministry leadership, Colombia launched *Plan Vive Digital* (Live Digital Plan),[[10]](#footnote-9) whose main objective is to expand Internet use extensively to achieve a more democratic society. *Vive Digital* has attained extraordinary results from 2010 to 2012 (some of them in collaboration with the Ministry of Education): Internet connections grew in 168%, 664,000 computers and 82,000 tablets were delivered to schools, 1,055 *Vive Digital* kiosks were built in rural areas, 1,277 study loans and scholarships for ICT career were granted, among others.[[11]](#footnote-10) Some of the specific programs in charge of these achievements are *Computadores para Educar* (Computers for Schooling), which provides refurbished second-hand computers to schools, and *Compartel*, whose aim is to provide every Colombian with access to telephone and internet services.

Additionally, the Ministry of Education of Colombia has set up the *National System of Educational Innovation Using ICT*, which in turn has created the *National Strategy on Digital Open Educational Resources*.[[12]](#footnote-11) This is a very comprehensive strategy on OER, which focuses on higher education and supports a collaborative approach towards the production and use of OER in the country in order to position Colombia as a regional leader in the fight against inequality and the digital divide. One of the initiatives of the strategy is the creation of the *National Network of OER Institutional Repositories*, with extensive information regarding the procedures to follow to participate in such network.

It is important to mention also the *Red Nacional de Tecnología Avanzada – RENATA* (Advanced Technology National Network – RENATA),[[13]](#footnote-12) which provides users with a high-quality infrastructure “for communication, information exchange, and collaborative work.”[[14]](#footnote-13) The tools this network offers are extremely valuable to any institution willing to develop OER-related projects.

In sum, it is clear that Colombia shows a serious commitment to digital development, which could result in interesting initiatives regarding OER.

**4. OER Programs and Initiatives**

Our search for OER initiatives in Colombia shows that the nation is making interesting efforts towards the creation and use of learning objects, as well as towards the indexation of articles and educational resources in repositories. Nevertheless, the country is far from reaching its full potential in this respect.

· **Colombia Aprende**

[www.colombiaaprende.edu.co](http://www.colombiaaprende.edu.co/)

Colombia participates in the Red Latinoamericana de Portales Educativos – RELPE (Latin American Network of Educational Portals)[[15]](#footnote-14) through the portal *Colombia Aprende*. It offers resources for teachers, students, families, directors, and researchers, ranging from the pre-school level to higher education. Among the resources offered, we can find a digital resources catalog with multimedia learning objects.

· **Banco Nacional de Objetos de Aprendizaje**

**(Learning Objects National Bank)**

<http://64.76.190.172/drupalM/>

This repository offers learning objects developed by Colombian HEIs in a variety of topics. Users have to register in Colombia Aprende to use the resources.

· **Biblioteca Digital Colombiana – BDCOL**

**(Colombian Digital Library – BDCOL)**

[www.bdcol.org](http://www.bdcol.org/)

BDCOL is a Colombian network of digital repositories and libraries whose goal is to index all the academic, scientific, cultural, and social productions of Colombian HEIs, research centers, and libraries. BDCOL’s website states that 85,000 digital documents, coming from 73 institutional repositories, are available to users.

· **Eduteka**

<http://www.eduteka.org/>

Eduteka is a free educational portal developed in the Colombian city of Cali. It offers multiple digital resources for teachers, directors, and teacher trainers. Among said resources, Eduteka include digital tools that allow teachers to develop and share educational projects.

· **Proyecto LATin – Iniciativa Latinoamericana de Libros de Texto Abiertos (LATin Project – Latin American Initiative for Open Textbooks)**

[www.latinproject.org](http://www.latinproject.org/)[[16]](#footnote-15)

Colombia participates in this initiative to create collaborative open textbooks through Universidad del Cauca (UNICAUCA).[[17]](#footnote-16)

· **Red CLARISE – Comunidad Latinoamericana Abierta Regional de Investigación Social y Educativa / SINED-CLARISE**

**(CLARISE Network – Latin American Regional Open Community for Social and Education Research / SINED-CLARISE)**

<https://sites.google.com/site/redclarise/>

Colombia’s affiliate in this network is Universidad de la Sabana.[[18]](#footnote-17)[[19]](#footnote-18)

· **COLABORA – Comunidad Latinoamericana de Bibliotecas y Repositorios Digitales**

**(COLABORA – Latin American Community of Libraries and Digital Repositories)**

<http://www.saber.ula.ve/colabora/>

Colombia takes part in this digital libraries and repositories project through Escuela de Administración, Finanzas y Tecnología – EAFIT.[[20]](#footnote-19)

· **OCW-Universia**

<http://ocw.universia.net/es/>

Colombia participates in OCW-Universia through Universidad de Manizales, Universidad del Valle,[[21]](#footnote-20) Universidad Eafit, Universidad Icesi,[[22]](#footnote-21) Universidad Industrial de Santander.[[23]](#footnote-22) This is a network that links member institutions’ OCW sites in the OCW-Universia site.[[24]](#footnote-23)

**5. Research / Researchers**

Below is a list of articles available at the SciELO, RedALyC, and LACLO websites regarding OER in Colombia:

Articles available at **SciELO**:

· Ayuso García, María Dolores; Ayuso Sánchez, María José. [Peer-review y acceso abierto a la información científica: modelos y tendencias en el proceso de comunicación científica / peer-review and open access to scientific information: models and tendencies in the process of scientific communication](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0120-09762009000100006&lang=pt). *Rev. Interam. Bibliot;32(1): 99-127, tab.*

· Caballero, Carlo Vinicio; Marenco Robles, Rina; Heidy, Martínez Arroyo; Monroy Roja, Sandra; Palencia Sánchez, Diana; Rodríguez Torres, Shirly. [La importancia del acceso abierto en la investigación biomédica y científica / the importance of the open access in the biomedical and scientific investigation](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0121-81232008000200004&lang=pt). *Rev.colomb.reumatol.;15(2): 93-101, ilus, tab.*

· Espinosa M, Nicolás. ["dime qué fuente usas y te diré qué análisis presentas".: balance conceptual y metodológico de bases de datos sobre conflicto armado en colombia / "you can know an analysis by the source of its data".: a conceptual and methodological review of databases on armed conflict in colombia / "diga-me que fonte usas e te direi que análise apresentas".: balanço conceitual e metodológico de bancos de dados sobre o conflito armado na colômbia](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0120-48072011000200013&lang=pt). *Univ. Humanist.;(72): 297-320, ilus, gra, tab.*

· Jiménez, Claudia; Ceballos, Juan. [Modelo de armado de cursos flexibles en un entorno virtual de red académica / assembly model for flexible courses in a virtual environment for an academic network](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0012-73532007000100016&lang=pt). *Dyna rev.fac.nac.minas;74(151): 161-169, ilus, gra, tab.*

· Meléndez - Álvarez, Bernardo Francisco. [Entornos virtuales como apoyo al aprendizaje de la anatomía en medicina / virtual environments like support to the learning of the anatomy in medicine / entornos virtuais como apoio ao aprendizado da anatomia em medicina](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0124-81462009000200008&lang=pt). *Investig. Andina;11(19): 94-106, GRA.*

· Pabón Cadavid, Jhonny Antonio. [Elementos básicos para la reflexión de la propiedad intelectual en el contexto digital / basic elements to reflect on the problem of copyrights in a digital context](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0120-48232009000100012&lang=pt). *Signo pensam.;28(54): 174-194, ilus.*

· Pallares Muñoz, Myriam Rocío; Rodríguez Calderón, Wilson. [Diseño de una herramienta educativa para estudiar la ecuación de laplace - 2d con diferencias finitas: análisis del efecto de bordes en un condensador de placas paralelas](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S1692-33242007000100010&lang=pt). *Rev. Ing. Univ. Medellin;6(10): 121-151, ilus.*

· Peña de Carrillo, Clara Inés; Choquet, Christophe. [Adaptive e-tutorship using students context in technology enhanced learning environments / Tutoría adap tativa con base en el contexto de los estudiantes en ambientes de ap rendizaje mediados por tecnología / Tutoria adap tativa com base no contexto dos estudantes em ambientes de ap rendizagem mediados por tecnologia](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S1900-38032013000100016&lang=pt). *Entramado;9(1): 240-252, ILUS, GRA, TAB.*

· Rodríguez Gallardo, Adolfo. [Acceso abierto y bibliotecas académicas](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0120-09762007000100005&lang=pt). *Rev. Interam. Bibliot;30(1): 93-104, nd.*

· Rodríguez quintero, ricardo; rodríguez sánchez, adriana; vargas ramos, aura maría. [Repositorio digital comhistoria: contexto, génesis y análisis de una herramienta para la investigación histórica sobre medios de comunicación regionales en colombia / comhistoria digital repository: context, genesis and analysis of a tool for historical research on regional media in colombia](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0120-48232011000200012&lang=pt). *Signo pensam.;30(59): 156-177, tab.*

· Tzoc, Elías. [El acceso abierto en américa latina: situación actual y expectativas / open access in latin america: current situation and expectations](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0120-09762012000100008&lang=pt). *Rev. Interam. Bibliot;35(1): 83-95, ilus, tab.*

Articles available at **RedALyC:**

· Chiappe Laverde, Andrés (2012). El conocimiento digital: una perspectiva para la didáctica desde la informática educative. Revista Virtual Universidad Católica del Norte, núm. 35, febrero-mayo, 2012, pp. 288-303. Fundación Universitaria Católica del Norte. Medellín, Colombia.

Articles available at **LACLO**:

· Bernal Zamora, Leonardo, Oscar Miguel Salamanca Valenzuela & Víctor Fernando Cañón Rodríguez (2013). “Manos que hablan”. Prototipo de aplicación en Android para el aprendizaje del alfabeto dactilológico para Colombia.

[Vol 4, No 1 (2013): LACLO 2013 - Octava Conferencia Latinoamericana de Objetos y Tecnologías de Aprendizaje](http://www.laclo.org/papers/index.php/laclo/issue/view/6)

· Bonfante, María, Clemencia Zapata & María Suarez (2013). Calidad de objetos virtuales de aprendizaje para el desarrollo de la inteligencia práctica en niños sordos.

[Vol 4, No 1 (2013): LACLO 2013 - Octava Conferencia Latinoamericana de Objetos y Tecnologías de Aprendizaje](http://www.laclo.org/papers/index.php/laclo/issue/view/6)

· Cardona, Sergio, Jeimy Vélez & Sergio Tobón (2013). Metodología de proyectos formativos aplicada a un curso de Lógica Matemática.

·  [Vol 4, No 1 (2013): LACLO 2013 - Octava Conferencia Latinoamericana de Objetos y Tecnologías de Aprendizaje](http://www.laclo.org/papers/index.php/laclo/issue/view/6)*Méndez Medina, Jaime Alexander (2013).* An Approach to the Digital Open Educational Resources. Vol 4, No 1 (2013): LACLO 2013 - Octava Conferencia Latinoamericana de Objetos y Tecnologías de Aprendizaje.

· Monsalve Pulido, Julián Alberto, Fredy Andrés Aponte Novoa (2012). MEDEOVAS - Metodología de Desarrollo de Objetos Virtuales de Aprendizaje [Vol 3, No 1 (2012): LACLO 2012 - Séptima Conferencia Latinoamericana de Objetos y Tecnologías de Aprendizaje](http://www.laclo.org/papers/index.php/laclo/issue/view/5)

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· *Tabares Morales, Valentina, Paula Andrea Rodríguez Marín, Néstor Darío Duque Méndez & Julián Moreno Cadavid (2012).* Modelo Integral de Federación de Objetos de Aprendizaje en Colombia - más que búsquedas centralizadas

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It is important to mention also institutions like the Karisma Foundation, which performs an extensive work in different aspects of ICT and open educational practices development.

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