

OPEN EDUCATIONAL RESOURCES OR THE FUTURE OF EDUCATION

Monica CONDRUZ-BĂCESCU¹

Abstract

The paper deals with the issue of open educational resources (OER). The first part focuses on the concept of OER, its use in education and benefits for students, educational institutions, employers, public and private organizations. Open educational resources refer to unhindered access to instructive materials, facilitated by information and communication technologies, for user consultation, use and adaptation for non-commercial purposes. The use of OER means a change in educational practices and requires changes at institutional level and innovations in teaching and learning. The role of OER in building, disseminating and sharing knowledge is presented, focusing in particular on using open and collaborative tools to build new virtual learning environments for higher education. The second part presents some examples of OER sites such as: Curriki, CK-12, CNX, Smarthistory, Opencourseware. Many OER sites are sustained by non-profit organizations, universities or different companies. Their mission is to offer high quality education for free to students, educators, self-learners. Despite OER's benefits, including the ability to exchange information with other students, according to personal learning goals, students are still striving to find relevant content and receive little or no recognition of their informal studies. Both teachers and students lack the skills for self-directed learning. The OER dialogue needs to move away from the discussion on access to materials and address the way in which co-creation, adaptation and shared management can be promoted. Open educational resources are a place of excellence in social inclusion and inclusion policies and have the support of many decision-makers. This is because the main objective of OER at present is to allow broad access to digital content, without reflecting whether this will support educational practices and promote quality and innovation in teaching and learning.

Keywords: open educational resources; education system; free license; curriculum; software; opportunities

1. What is OER? – a conceptual discussion

The purpose of this paper is to deepen the way we understand the impact of free access and open educational resources on educational practices at the level of organizations, students and other stakeholders. The most known OER initiatives currently focus on creating and publishing OER. In this context, the existence of a model of factors presenting the elements

¹ Monica Condruz-Băcescu, The Bucharest University of Economic Studies, monicabacescu@yahoo.com

that have an impact on the creation, use, sharing and reuse of OER resources by individuals, organizations is indispensable. Such a model should suggest the need to move from a stage where the primary objective is to facilitate access to resources at a stage where the main purpose is to integrate OER into teaching and learning practices. Open educational resources have begun to be accepted as part of the materials students and teachers can use. However, the methods and practices by which students, teachers and educational institutions can better collaborate in using OER have not yet been defined, this being more important in facilitating the change in education systems than the effective availability of these resources.

The dynamics of the changes taking place in the world is a challenge for all actors in the education system. Accepting and promoting the postmodern paradigm, based on humanism and constructivism, approaching education from the perspective of the learner and developing the learning process from the perspective of competence-based pedagogy are just a few of the new imperatives. All these realities call for a reshaping of the process and of the educational resources. Training systems must contribute to meeting the ever more pressing need to continuously update knowledge and skills in an increasingly international labor market, while pursuing greater efficiency and equity.

The issue of the use of open educational resources becomes very important given the ease in accessing them and the limited time resources that we have for the preparation of the documentation in different fields of research. The problem is that these open educational resources do not always have the necessary quality, and moreover we do not realize, at least at first sight, the correctness of the information contained in these materials.

In this context, it also includes broad use, including in the education system, of technologies and information resources, as well as facilitating access and exchange of information through them. "Electronic resources, on-line content and virtual learning spaces provide the latest, most diverse and lifelong learning opportunities". (Shank, 2014: 41) In recent years, issues directly related to open educational resources are widely addressed by the international educational community. More than 50 states have committed to opening up public data and giving up intellectual property rights, precisely to encourage the creation of new services and products based on existing data. This initiative, called the Partnership for Open Government, was launched in 2011 by the US. At European level, a number of actions have been taken to promote open data in order to improve the quality and access to education, the European Commission drafting a series of public policies encouraging the re-use of information in innovative ways and conceiving of educational materials under open licenses.

Before talking about open educational resources, it should be specified what this concept means. Thus, O. Istrate indicates that "open educational resources are tools and resources (lesson plans, tests, analytical programs, training modules, simulations, etc.) available for use, re-use, adaptation and sharing". (Istrate, 2013: 17) In *Guidelines for open educational resources in higher education* (2011: 26), we find that "open educational resources are materials used to support education, which can be accessed freely, can be reused, modified and shared by anyone". According to Butcher, OERs are resources that are "openly available for use by educators and students without the need to pay royalties or license fees". (Butcher, 2011: 56)

Impact and use of OER will increase in the immediate future. The use of OER in education must become mass-free as soon as possible. To those presented here, we should add Pawlowski's (2013) recommendations on *Open Education 2030*. Thus, he mentions the need:

- 1 - to create an inventory of OER and open educational practices in collaboration with institutions and national stakeholders;
- 2 - to integrate existing communities across Europe;
- 3 - to integrate the curriculum;
- 4 - to create regional networks;
- 5 - to create programs with global involvement;
- 6 - to pursue policies in the field of open educational resources.

Open educational resources refer to unhindered access to instructive materials, facilitated by information and communication technologies, for user consultation, use and adaptation for non-commercial purposes. The term was adopted at the UNESCO Forum in Paris (2002), which analyzed the impact of Open Courseware projects on higher education. OER include:

- a) teaching and learning materials: open courses and open content, free courses, learning objects directories, educational journals;
- b) open source software - for development, use, reuse, search, organization and access to resources; virtual learning environments (LMS - Learning Management Systems), learning communities;
- c) intellectual property licenses promoting the open publication of materials, design principles and best practices, location of content. Therefore, besides the actual materials, the concept of open educational resources can also include specialized tools such as software needed to develop, use and deliver educational materials, including content search and organization, and virtual learning and training communities. "OER is the first common good that teachers, pupils, students, and the academic sphere should have access to". (OECD, 2016: 21) Benefits will be important for all: students - the primary source of digital content, teachers, educational institution, representatives of other sectors.

Benefits for students:

- increased quality and flexibility of educational resources;
- application of knowledge in a wider context;
- freedom of access (e.g at work / home) and increased opportunities for learning;
- support for learner-centered, individualized, nonformal approaches;
- developing skills (e.g arithmetic) by generating generic OERs that can be reused and recontextualized in different areas;
- the ability to test materials prior to teaching and compare them with similar courses;
- the opportunity to get involved in OER initiatives by contributing to their development, testing or evaluation through marketing activities, acting with other colleagues or individually;
- genuine "real-life" experiences through OER that connect with potential employers or professional sectors.

Benefits for educational institutions:

- enhanced recognition and reputation;
- greater availability of academic content and focus on learning experience (including expanding the scope of participation);
- increased ability to support students from distance;
- efficiency in the production of content;
- establishing new partnerships / links with institutions and organizations inside and outside of education;
- exchanging ideas and practices within the institution, increasing the role of professional support activities (mentoring, counseling, etc.);
- ensuring the durability of old materials;
- a better understanding of intellectual property rights.

Benefits for employers, public and private organizations:

- access to a rich variety of content;
- contributions to the definition, development and approval of OER in the field it represents;
- initiating partnerships with content providers and representatives of other sectors;
- employees' training;
- respecting intellectual property rights, curriculum development and learning technologies;
- understanding customer needs (for example, business publishers find out what types of OER and learning resources are required by teachers and / or students).

As we can see, the advantages of promoting and applying this concept in the educational system are impressive. In the same context, starting from the issue of the high costs for textbooks/ courseware and implicitly the lack of financial capacity of students to buy them, we reveal that when we transform the respective educational resources into digital resources, we offer opportunities extended to a large number of people.

“The free license is a document that describes how the creation of a freely exposed person - an audio material, text, image or video, a presentation – can be used”. (Okada, 2012: 35) Under normal conditions, when you place a photo, song, article on-line, they are protected by copyright under the laws in force. Beneficiaries may not use them without prior permission from the author. Free licenses explicitly indicate the conditions of use and the restrictions provided, that is, those which give access to the work in question, the possibility of reusing and redistributing without restrictions (or only a few). For example, a text on a web page can be used by others to print or distribute it. “Free sharing means broader and faster dissemination and thereby more people are involved in problem solving which in turn means rapid quality improvement and faster technical and scientific development; free sharing of software, scientific results and educational resources reinforces societal development and diminishes social inequality”. (www.oecd.org/edu/ceeri)

If the author wants to give people the right to distribute, use, and even reuse what he/she created, consider publishing under a Creative Commons license that allows him/her to decide what rights they want to keep, showing very clearly from the start how it allows reuse. These licenses are a free, accessible and standardized way to give authors permission to distribute and use the creations of the author. The possibilities offered by the free

licenses are absolutely special, because any material can be easily distributed, reused and improved, contributing to the optimization and improvement of procedures, activities, concepts in a participatory way.

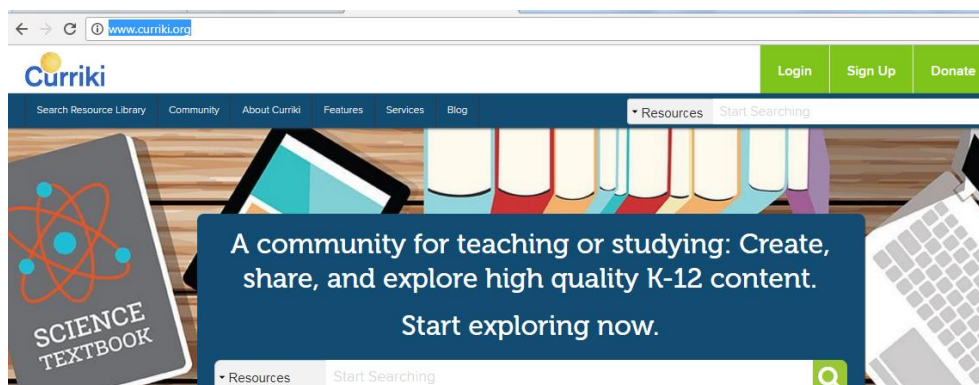
The OER movement has so far been successful in “promoting the idea of knowledge as public goods, motivating organizations and individuals to publish OER”. (Sharma, 2014: 78) However, OER has not yet reached its potential to transform educational practices. At present, the main goal in OER is still limited to facilitating access to digital content in the form of collections and infrastructures, without much reflecting whether technology will support educational practices, open education, or promote quality and innovation in teaching and learning. There is a clear need for new forms of support for the creation and evaluation of OER. The use of OER means a change in educational practices and requires changes at institutional level and innovations in teaching and learning. “If universities do not support the open sharing of research results and educational materials, traditional academic values will be increasingly marginalized by market forces. The risk of a software monopoly if everyone is using Microsoft programmes or a combination of a combined hardware and software monopoly by too many using Apple’s iPod music players listening to iTunes, is often used to support the OER movement”. (www.oecd.org/edu/ceeri)

2. Examples of OER

“More and more, schools are seeking efficient, cost-effective alternatives to using paper and supporting over-priced textbook companies. One way is by supporting technology in schools. OER provide different viewpoints and angles to content that was previously static and myopic”. (<https://opensource.com/education/13/4/guide-open-source-education>)

Many OER sites are sustained by non-profit organizations, universities or different companies. They usually require a username and password, and offer teachers a space to save, download and share content with others. Here are some sites that provide open educational resources:

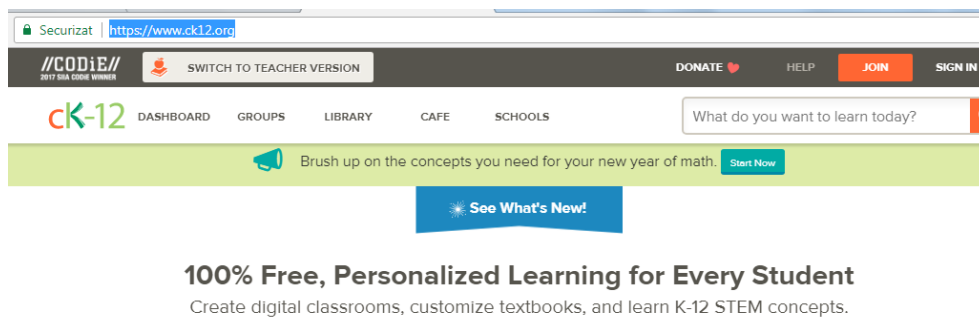
<http://www.curriki.org/>



“Curriki’s mission is to eliminate the Education Divide – the gap between those who have access to high-quality education and those who do not – in the U.S. and worldwide. Its online community of educators, learners and committed education experts works together to build and share quality materials that benefit teachers, parents and students globally”. (<http://www.curriki.org/>)

Curriki supports teachers and learners for free with the necessary tools to achieve their goals. It builds relationships with companies, organizations that have similar goals. Sponsors and technology partners collaborate with Curriki for “media partnerships, technology services, curriculum development or content access to learning resources”. (<http://www.curriki.org/>) The subjects taught are: arts, computer science, education, engineering, health, media literacy, math, social studies, world languages etc.

<https://www.ck12.org/>

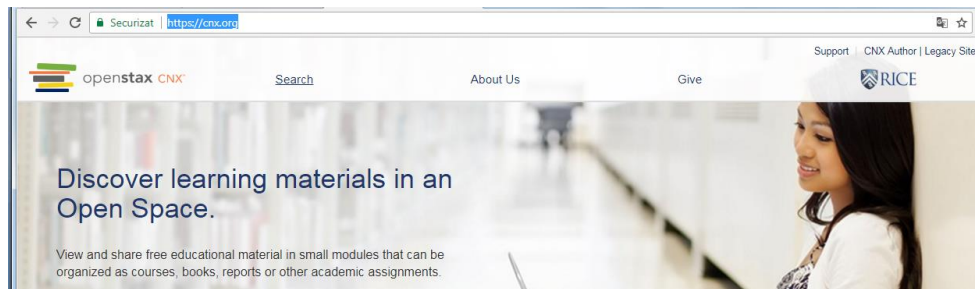


CK-12 mission: “We believe every child on this planet should have equal access to great education...Our philosophy is that learning is a personal journey. The CK-12 Foundation was founded with the mission to enable everyone to learn in his or her own way. We equip students, teachers and parents with everything they need for free”. (<https://www.ck12.org/>)

CK-12 partners are: Google, Amazon, Microsoft, Intel HP, Clever, Apple, Canvas etc. The community of partners help CK-12 Foundation with their expertise and resources to make education accessible to everyone for free. Subjects approached are: maths, science, English, engineering, technology, astronomy, history, health etc.

“Integrating open educational resources requires little time and research -- and, if done collaboratively, can be more efficient and effective than if planned in isolation. Part of being a connected educator is the ability to connect with each other as well as connecting our students with rich, dynamic content that provokes their thinking and enhances their learning”. (<https://opensource.com/education/13/4/guide-open-source-education>)

<https://cnx.org/>

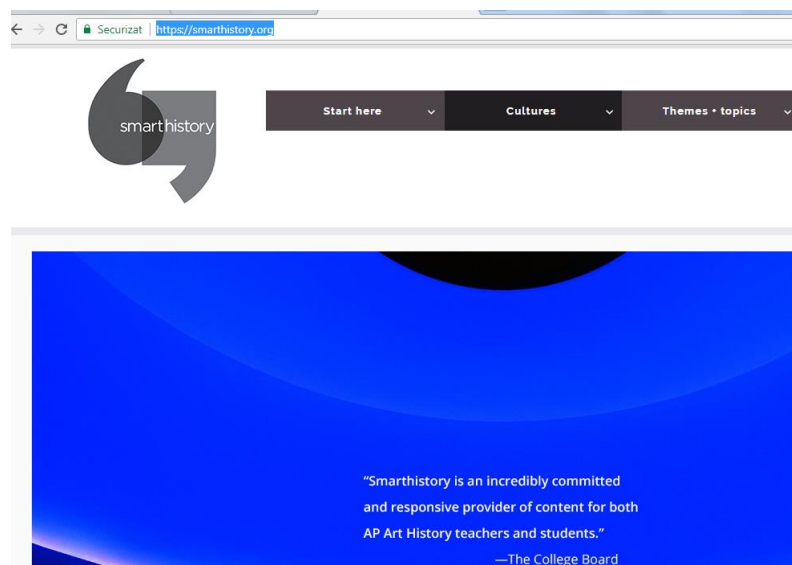


“OpenStax believes that everyone has something to learn, and everyone has something to teach”. (<https://cnx.org/>) OpenStax CNX provides millions of users for free educational content organized into many textbook-style books, accessible online. All is accessible for free thanks to the support of Rice University and the philanthropic organizations: William&Flora Hewlett Foundation, Bill&Melinda Gates Foundation, 20 Million Minds Foundation, Maxfield Foundation, Open Society Foundation.

“Frustrated by the limitations of traditional textbooks and courses, Dr. Richard Baraniuk founded OpenStax (then Connexions) in 1999 at Rice University to provide authors and learners with an open space where they can share and freely adapt educational materials such as courses, books, and reports”. (<https://cnx.org/>)

The topics approached are: biology, sociology, statistics, psychology, anatomy & physiology, chemistry, history, macroeconomics, microeconomics, economics, algebra & trigonometry etc. OpenStax CNX encourages people to share and reuse the educational content from three points of view: educationally, technologically and legally.

<https://smarthistory.org/>



Smarthistory had over 35 million views for content in 2016, 200 academic contributors, 1800 essays and videos and 80,000 Youtube subscribers. Smarthistory is “a leading resource for the study of art and cultural heritage. Our growing collection of videos and essays are designed to be engaging and conversational and cover art that ranges from the paleolithic to the present”. (<https://smarthistory.org/>)

Smarthistory is supported by: the Andrew W. Mellon Foundation, The Samuel H. Kress Foundation, The College Board, Khan Academy, The Google Cultural Institute, John and Ann Doerr, and individual donors. It collaborates with more than 200 art historians, archaeologists, curators and other specialists.

It is working with the following institutions: American Museum of Natural History, Asian Art Museum, The British Museum, Cooper Hewitt, Smithsonian Design Museum, Crystal Bridges Museum of American Art, Dulwich Picture Gallery, J. Paul Getty Museum, Google Cultural Institute, The Metropolitan Museum of Art, The Museum of Modern Art, Portland Art Museum Smithsonian Institution, Tate etc. The cultures presented are: prehistoric, ancient Mediterranean, medieval Europe and byzantine, the Islamic world, Europe 1300-1800, Europe 1800-1900, the Americas to 1900, modernisms 1900-1980, Asia, Oceania, Africa.

<https://ocw.mit.edu/index.htm>



OpenCourseWare offers materials from 2400 courses and has over 200 million visitors. “Through OCW, educators improve courses and curricula, making their schools more effective; students find additional resources to help them succeed; and independent learners enrich their lives and use the content to tackle some of our world’s most difficult challenges, including sustainable development, climate change, and cancer eradication”. (<https://ocw.mit.edu/index.htm>)

OCW is accessed by students (42%), educators (9%), self-learners (43%) and other categories (6%). (<https://ocw.mit.edu/index.htm>) It has over 2 million visits each month from all over the world, half coming from outside North America.

OpenCourseWare is used for a wide range of purposes such as:

	USE SCENARIO	% OF USE
Educators	Improve personal knowledge	31%
	Learn new teaching methods	23%
	Incorporate OCW materials into a course	20%
	Find reference material for my students	15%
	Develop curriculum for my department or school	8%
Students	Enhance personal knowledge	46%
	Complement a current course	34%
	Plan a course of study	16%
Self Learners	Explore areas outside my professional field	40%
	Review basic concepts in my professional field	18%
	Prepare for future course of study	18%
	Keep current with developments in my field	17%
	Complete a work-related project or task	4%

Source: <https://ocw.mit.edu/index.htm>

Topics approached are: aeronautics and astronautics, anthropology, architecture, biological engineering, biology, chemical engineering, civil and environmental engineering, economics, electrical engineering and computer science, global studies and languages, health sciences and technology, history, linguistics and philosophy, literature, mathematics, media arts and sciences, music and theater arts, nuclear science and engineering, etc.

MIT OpenCourseWare is supported by: The William and Flora Hewlett Foundation, The Dirk and Charlene Kabcenell Foundation, The Lord Foundation of Massachusetts, The Andrew W. Mellon Foundation, Gabriella and Paul Rosenbaum Foundation, The Frank N. Stanton Foundation and individual supports.

3. Conclusions

Despite OER benefits, including the ability to exchange information with other students, according to personal learning goals and knowledge of different points of view, students are still striving to find relevant content and receive little or no recognition of their informal studies. Both teachers and students lack the skills for self-directed learning. The OER dialogue needs to move away from the discussion on access to materials and address the way in which co-creation, adaptation and shared management can be promoted.

Although there is a growing number of OER initiatives nowadays, a lot of questions still remain to be answered: who is involved, in what way are they involved and why? There is a wide range of reasons for both institutions and individuals: some are altruistic and idealistic, others are economic. This phenomenon of giving learning resources for free could be understood as a new culture and an emerging economic reality or a growing competition among universities.

Students spend much of their free time on the Internet, even in learning and sharing new information, mostly through social networks. It is therefore imperative that what is offered to them bears the mark of quality and professionalism, and teachers must be among the first to provide these open, high-quality educational resources appropriate to the requirements of tomorrow's world. Last but not least, as Wiley, Green and Soares said in 2012, "for the first time in the history of humanity, we have the tools to enable everyone to access the education they want". That is why the educational policy in Romania must consider, in a wider section dedicated to this area of open educational resources, because the future is under the sign of open education. The necessity of propagating this concept in our country is indisputable, the successful implementation of current reforms and the overcoming of problems related to the quality, access and relevance of education imply a visionary approach, including the identification of new educational models and the intelligent capitalization of international practices.

Open educational resources are a place of excellence in social inclusion and inclusion policies and have the support of many decision-makers. This is because the main objective of OER at present is to allow broad access to digital content, without reflecting whether this will support educational practices and promote quality and innovation in teaching and learning. In order to provide education opportunities to all citizens, we suggest extending the goal beyond facilitating access to resources by including innovative open educational practices.

References and bibliography

- Butcher, N.** 2011. *A basic guide to open educational resources*, Vancouver, Canada: Commonwealth of Learning, and Paris, France: UNESCO.
- Istrate, O.** 2013. "Manuale digitale sau cum migrăm către un mediu educațional avansat tehnologic. Ce așteptări avem astăzi de la un program de

implementare a manualelor electronice?”, in *Elearning. Romania*, 89, București: Institutul pentru Educație.

- OECD.** 2016. *Open Educational Resources: A Catalyst for Innovation by OECD*.
- Okada, A.** 2012. *Collaborative Learning 2.0: Open Educational Resources*, US: Idea Group.
- Pawlowski, J. M.** 2013. “Global Open Education: A Roadmap for Internationalization”, in *Open Education 2030. Contribution to the JRC-IPTS Call for Vision Papers. Part I: Lifelong Learning*.
- Shank, J.D.** 2014. *Interactive Open Educational Resources: A Guide to Finding, Choosing, and Using What's Out There to Transform College Teaching*, US: Jossey-Bass.
- Sharma, G.** 2014. *Open Educational Resources for Teacher Education: A Participatory Action Research*, Paris: Lambert Academic Publishing.
- UNESCO.** 2011. *Guidelines for open educational resources in higher education*.
- Wiley, D., Green, C., & L. Soares.** 2012. *Dramatically bringing down the cost of education with OER: How open education resources unlock the door to free learning*, <<<http://www.educause.edu/library/resources/dramatically-bringing-down-cost-education-oer-how-openeducation-resources-unlock-door-free-learning>>>, accessed on 10 May 2017.
- ***. “A Guide to Free and Open Source Education”. <<<https://opensource.com/education/13/4/guide-open-source-education>>>, accessed on 21 April 2017.
- ***. “Centre for Educational Research and Innovation”. <<www.oecd.org/edu/ceeri>>, accessed on 22 May 2017.
- ***. “Curriki”. <<<http://www.curriki.org/>>>, accessed on 25 September 2017.
- ***. “Ck-12”. <<<https://www.ck12.org/>>>, accessed on 25 September 2017.
- ***. “Openstax CNX”. <<<https://cnx.org/>>>, accessed on 25 September 2017.
- ***. “Smarthistory”. <<<https://smarthistory.org/>>>, accessed on 25 September 2017.
- ***. “Mitopencourseware”. <<<https://ocw.mit.edu/index.htm>>>, accessed on 22 May 2017.
- ***. “Giving Knowledge for Free. The Emergence of Open Educational Resources”. <<<http://www.oecd.org/edu/ceeri/38654317.pdf>>>, accessed on 22 May 2017.

The author

Dr. **Monica Condruz-Bacescu** is an Associate Professor in Business Communication in English with the Department of Modern Languages and Business Communication at the Bucharest University of Economic Studies. She holds a Master degree and a PhD in economics and has taken part in many conferences and symposia with contributions on communication in business english, english literature and economics. She is the author of more than 80 articles and 10 books and co-author of 4 textbooks for students of Cybernetics.

