



Development and innovative
implementation of MOOCs
in higher education



**Recommendations on the
development, implementation,
certification, quality assessment
and business models for MOOCs
in Romania**

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Recommendations on the development, implementation, certification, quality assessment and business models for MOOCs in Romania

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I. OPEN EDUCATION LANDSCAPE

Over the last years, the worldwide education has become more and more open towards Open Educational Practices, integrating Open Educational Resources (OER) and Massive Open Online Courses (MOOC), facilitated by the growing ubiquity of Social Media, the emerging mobile technologies and the augmented reality.

I.1. Definitions for Open Educational Resources, Massive Open Online Courses and Open Education

The term *Open Educational Resources* (OERs) was adopted at the UNESCO Forum in 2002, when the impact of the Open Courseware projects on higher education was analysed. OERs are defined as any teaching, learning and research materials that are freely and openly available to be used, shared, combined, adapted or expanded by teachers, educators, students and independent learners, without an accompanying need to pay royalties or license fees (UNESCO, 2002).

"The range of practices around the creation, use and management of Open Educational Resources with the intent to improve quality and innovate education" are considered Open Educational Practices (OEP) (OPAL, 2011). Conole offers a broad perspective of the notion of "openness", covering each major phase of the education life cycle, namely, design, delivery, evaluation and research (Conole, 2013).

As stated by the OpenEdu project (<https://ec.europa.eu/jrc/en/open-education>): *Open education* is a mode of realising education, often enabled by digital technologies, aiming to widen access and participation to everyone by removing barriers and making learning accessible, abundant, and customisable for all. It offers multiple ways of teaching and learning, building and sharing knowledge, as well as a variety of access routes to formal and non-formal education, bridging them. Open education means access to content, courses, support, assessment and certification in ways that are flexible, and accommodate diverse needs. Barriers, as regards for example entry or cost, are reduced or eliminated (Inamorato dos Santos et al., 2016).

Started in 2008, the new Massive Open Online Courses (MOOCs) paradigm, a core key of Open Education, has brought challenges and innovation at all levels of

education, aiming to respond to the most pressing learning needs, generated by the new development policies and the rapid evolution of technology.

It is already observed that every letter in MOOC is negotiable, thus the MOOC definition proposed by the partners of three important European projects (HOME, ECO project, OpenupEd) and used in the European space is: *Massive Open Online Courses* are courses designed for large numbers of participants, that can be accessed by anyone anywhere as long as they have an internet connection, are open to everyone without entry qualifications, and offer a full/complete course experience online for free (OpenupEd, 2015).

Number of participants is larger than can be taught in a "normal" campus class room / college situation (>148 = Dunbar's number), massive meaning also "intercultural, diverse, global" (@diando70, @alacre - <https://twitter.com/diando70/status/702042890894254081>).

The massive characteristic could also depend on the language of the MOOC (Jansen, 2015) - for the Romanian language, the number of participants would be 250-2500.

I.2. Significant Projects and Policies

In September 2013, the European Commission published the document entitled "Opening Up Education", containing challenges and recommendations to the country members and to the educational and training institutions regarding the important role of technology in the increasing educational efficacy and equal rights in education. Therefore, the need for innovative solutions, for the usage of open educational resources and the development of infrastructure in the area of ICT is emphasized (European Commission, 2013).

Also, the report presented by the European Parliament in March 2014 mentions the new technologies and open educational resources as key drivers for ensuring quality in education via more accessible and open online knowledge, appealing to the European Commission to support the scientific research for the creation, utilization and implementation of MOOCs and OERs (European Parliament, 2014).

Some of the recent European initiatives which act as driving forces for transforming education and learning at all levels are: Open Education Europe (Opening Up

Education Through New Technologies), SCALE CCR (Up-Scaling Creative Classrooms in Europe), OEREU (Open Education Resources and Practices in Europe), OERup! (Erasmus+ project focusing on OERs for Adult Education, one partner being IREA - Romanian Institute for Adult Education), and POERUP (Policies for OER Uptake); the last one is followed by the related projects SharedOER and ADOERUP (Adult Education and OER) (Holotescu et al., 2014a).

HOME - Higher education Online: MOOCs the European way (<http://home.eadtu.eu>), ECO: Elearning, Communication and Open-data: Massive Mobile, Ubiquitous and Open Learning (<http://ecolearning.eu>), OpenupEd - a pan-European MOOC initiative (<http://www.openuped.eu>), EMMA - The European Multiple MOOC Aggregator (<http://platform.europeanmoocs.eu>), MOOCKnowledge - to assess the impact of Massive Open Online Courses in Europe (<http://moocknowledge.eu>), MOVE-ME / MOocs for uniVERsity students on the Move in Europe (<http://movemeproject.eu>), LangMOOC - Language Learning MOOCs (<http://www.langmooc.com>), BizMOOC - MOOCs for the world of business (<http://bizmooc.eu>), MOONLITE - MOOCs for social inclusion & employability (<http://moonliteproject.eu>) are important European projects related to MOOCs.

A study by Castaño Muñoz et al. (2016) relieved that:

- MOOCs are an important part of non-formal learning for individuals with higher education experience, particularly those who are either unemployed or low earners;
- MOOC certificates currently have low value in the labour market and in formal education;
- Data from studies of MOOCs in Europe sometimes differ from US studies;
- The number of MOOCs offered by HEIs in Europe is growing, but they are not yet widespread;
- Digital competence is very important for participation in MOOCs;
- The socio-economic profile of MOOC learners varies according to the subject of the course;
- Feedback and interaction with peers and teachers is important for MOOC learners, but often does not happen in practice.

II. ROMANIAN PROJECTS RELATED TO OPEN EDUCATION and MOOCs

II.1. Projects related to OE/OERs

We appreciate that Romania is active in the open education movement mainly through the OER and OEP initiatives carried out by institutions, groups, communities and engaged individuals, and through specific projects or programmes, on the following axes/directions (Holotescu, 2012; Holotescu et al., 2014; Holotescu and Pepler, 2014):

- proposals at government level related to OER and Web2.0, which may become driving forces - but not yet in formal policies: in 2007, the Knowledge based Economy Project (KEP) has formulated proposals related to OER (Holotescu, 2007);
- the National Strategy on Digital Agenda for Romania 2020 (February 2015) considers the usage of OER and Web 2.0 in formal and life-long learning education as strategic lines of development for ICT in education (https://www.comunicatii.gov.ro/?page_id=3496); the government program specifies the implementation of an e-learning platform and online repositories (<http://gov.ro/ro/obiective/programul-de-guvernare-2017-2020>);
- starting with the autumn of 2014, digital textbooks for pre-university education are freely available for download from a section of the Ministry of Education site (<http://www.manuale.edu.ro>); still the e-books are not published under open licenses and do not use open formats; at the moment this study is written, the project of the textbooks law is discussed (<http://www.edu.ro/consultare-publica-proiectul-legii-manualului-scolar>);
- the Romanian Coalition for OER was launched in October 2013, gathering persons and organizations that support and promote the concepts of open access and OER (<http://educatiedeschisa.ro>); the coalition has published guides, has organized workshops and four National Conferences for Open Education, and formulated concrete proposals for the govern related to OE (<http://www.inovarepublica.ro/educatie-deschisa-romania>);
- training/courses related to open educational pedagogies have been offered by KEP, Moodle Romania, Didatec, iTeach, Sloop2desc, ActiveWatch Media Monitoring, UPT Technology Enhanced Learning hosted by Cirip.eu, Compendiu.ro;
- national events related to open resources were produced by pre-university and

university teachers; national guides were published too ("OER for different disciplines" - <http://tinyurl.com/KEPOERguide>);

- directories with open resources (more numerous for pre-university level) - <http://forum.portal.edu.ro>, <http://didactic.ro>, <http://e-scoala.ro>, <http://www.dascal.ro>, <http://educatie.inmures.ro>, <https://www.kidibot.ro>, <https://dacobots.com>;
- open journals related to open education - <http://iteach.ro/experiencedidactice>, <http://www.elearning.ro>;
- strong communities/events for open source, open access, open data, open licenses (the Creative Commons Romania version was launched in September 2, 2008, with the help of ApTI - Association for Technology and Internet).

II.2. Projects related to MOOCs

In the following we mention several ongoing institutional and inter-institutional MOOC initiatives (Holotescu et al., 2016; Holotescu, 2017):

a) Platforms and MOOCs implemented by academic institutions:

- UniCampus (<http://unicampus.ro>): started in April 2014 by University Politehnica Timisoara, Unicampus offers MOOCs on a version of Moodle platform based on cMOOCs methodology (Vasiu and Andone, 2014);
- NOVAMOOC (<http://novamooc.uvt.ro>): development and innovative implementation of MOOCs in Higher Education, West University of Timisoara (2015-17);
- UniBuc Virtual (<http://www.unibuc-virtual.net>): Credis- Department of Distance Learning from Bucharest University developed and ran three MOOCs for Teachers Training on a Google Apps-based platform;
- "Vasile Goldis" Western University of Arad plans to offer MOOCs in partnership with Fédération Européenne des Écoles;
- Critical Thinking MOOC was developed and ran in 2014 by the Maastricht School of Management Romania on Iversity (<http://www.msmromania.org/content/msmro-produces-first-mooc-eastern-europe>);
- University „Babes Bolyai” Cluj Napoca – eLIADA (<http://eliada.ubbcluj.ro/proiect>) - materials for four MOOCs were developed;

b) Platforms and MOOCs implemented by companies and NGOs:

- MOOC.ro (<http://mooc.ro>): developed by Moodle.ro, currently offers 2 MOOCs about Moodle and Articulate;
- eStudent (<http://estudent.ro>): MOOCs on psychology, communication, business, geography and Romanian language developed by APIO, CTRL-D and experts;
- Startarium (<http://startarium.ro>): platform nurturing an entrepreneurship ecosystem; a group of organizations and experts offer MOOCs, mentoring and crowdfunding for around 8,000 potential entrepreneurs who design and develop their start-up plans using the platform features;
- MOOCs on Udemy – NGO Management, Association Young Initiative (<http://udemy.com/management-ong>);
- MOOC in medical education – Romanian Angel Appeal Foundation (<http://raa.ro>);

c) MOOC integration in formal education:

- MOOC integration in blended academic courses at Politehnica University of Timisoara: Web Programming (Holotescu et al., 2014b), Instructional Technologies (Vasiu and Andone, 2014), Embedded Systems (Bogdan, 2017); also at “Ioan Slavici” University of Timisoara for the Multimedia and POO courses;
- students’ participation in MOOCs count for the activity/project marks for some courses at Politehnica University of Timisoara and West University of Timisoara;
- MOOC accreditation at Politehnica University of Timisoara: Digital Marketing offered by Google (<http://atelieruldigital.jaromania.org>);
- Teacher continuing professional development using MOOCs at “Ioan Slavici” University of Timisoara - participation in MOOCs related to OE, but also to topics of taught courses and research directions;

d) Scientific events related to open education:

- Workshops and national conferences organized by the Romanian Coalition for OER;
- Workshops organized by Politehnica University of Timisoara during the Open Education Week (<http://elearning.upt.ro>);
- Starting with 2014, the International Conference eLSE has a special section dedicated to OER and MOOCs, co-chaired by the authors (<http://elseconference.eu>);

- The SMART Conference co-organized by the authors since 2013 is focused on open education too (<http://academia.edusoft.ro/category/conferences>);

e) Projects and studies:

- MOOCBuddy – the first Messenger chatbot for MOOCs (<http://facebook.com/MyMOOCBuddy>);
- Research and doctoral studies.

II.3. Drivers and barriers

In developing projects related to MOOCs, the drivers are:

- researchers and teaching staff, seldom the policy makers and managers of the institutions;
- companies and associations.

The main barriers in the OERs/MOOCs development and adoption could be considered:

- rigid policies in formal education related to curricular systems and assessment practices;
- the lack of possibility to officially accredit online courses, in spite of an impressive number of projects related to online courses in the last 15 years, and of the policy proposals coming from different organizations. Such courses can only be used in a blended approach in formal education;
- the lack of strategies at national level related to MOOCs in formal and continuing education;
- teachers lack of time and interest to explore, understand, evaluate and use new technologies, OERs and MOOCs in teaching-learning process;
- a reduced number of training programs for adopting open educational practices;
- lack of incentives, official recognition and promotion for teachers implementing open educational practices.

III. RECOMMENDATIONS FOR OPENING UP EDUCATION IN ROMANIA

To foster the Open Education, the OER and MOOC inclusion in the Romanian educational system, a set of recommendations is proposed below.

First of them are quoted and updated from the report (Holotescu, 2007), which have not been fully implemented, while the others are quoted and adapted from the recent reports of the projects POERUP (POERUP, 2014), OpenEdu (Castaño Muñoz et al., 2016; Inamorato dos Santos et al., 2016), OpenCred (Witthaus et al., 2016) and OER Congress (OER AP, 2017):

Table 1. Guidelines for including OE, OERs and MOOCs in Romanian education for policymakers

- | |
|--|
| <ul style="list-style-type: none">• The already existing publicly funded educational content should be used more intensively by teachers and students: connections with curricula, the skills they develop should be more clear; encourage and support the sharing of best practices; should be also licensed under CC.• Create a repository under CC licenses with the educational projects in which Romanian schools, universities and educational organizations have participated.• Partnership of the Ministry of Education with publishers, broadcasters, libraries, cultural institutions to provide open access to their own resources.• Encourage a competitive market for the production of educational resources, guarantee transparency of supply and equal opportunities to market actors, based on a set of quality criteria, containing pedagogic, design, accessibility and openness principles.• Implement an online platform for collaborative production of OERs/MOOCs by institutions, teachers and students, based on open collaborative technologies, presenting open scenarios for learning (Holotescu, 2007). |
| <ul style="list-style-type: none">• Any public outputs from the European Commission programs (specifically including Erasmus for All and Framework) should be made available as open resources under an appropriate license. |

- Budgets for digital education should include money for developing and maintaining OERs/MOOCs.
- OER should be allowed on approved materials lists.
- Quality agencies in ENQA (the European Association for Quality Assurance in Higher Education) should develop their understanding of new modes of learning (including online, distance, OERs and MOOCs) and how they impact quality assurance and recognition.
- Encourage Europe-wide validation of the knowledge and competences developed through online study and informal learning, including but not restricted to OERs and MOOCs (POERUP, 2014).

- Promote the use of MOOCs for re-skilling and up-skilling both unemployed people and workers, especially for those without employer support to training activities; this would help in decreasing unemployment rate.
- Promote digital competence development in both formal education and professional development activities. This could lead to a higher participation rate of individuals in an open education context and, indirectly, to a reduction in training costs and greater flexibility in education (Castaño Muñoz et al., 2016).

- Foster dialogue and collaboration between actors in HEI internationalisation, student mobility and the validation of non-formal and informal learning (Witthaus et al., 2016).

Table 2. Guidelines for including OE, OERs and MOOCs in Romanian education for educational institutions

<ul style="list-style-type: none"> • All teacher training programmes should contain topics related to OER, MOOCs, open licenses and Web2.0/collaborative/free tools to create educational materials in a collaborative manner. • Facilitate the sustainable implementation of OERs/MOOCs by creating incentives for use and reuse, and funding technical infrastructure to increase access to OERs/MOOCs (Holotescu, 2007).
<ul style="list-style-type: none"> • Strong and ongoing collaborations between schools, universities and other educational stakeholders with regard to OER/MOOC projects. • Accessibility should be a priority for all OER/MOOC, including disability accessibility standards (POERUP, 2014).
<ul style="list-style-type: none"> • Have a holistic strategy for opening up education that encompasses the 10 dimensions of the OpenEdu framework, making the open education strategy part of the overall institutional strategy. • Explore new practices and welcome changes. • Revise the practices at all levels: mission statement and vision, current organisational management structures and day-to-day policies, and the institution's role in the community and globally (Inamorato dos Santos et al., 2016).
<ul style="list-style-type: none"> • Validate open learning by offering credentials for MOOCs and free and open online courses. • Provide flexible options for 'free elective courses' or 'self-study courses' in the curricula, including open learning for study progression. • Join European consortia related to MOOCs and build partnerships with HEIs/employment bodies (Witthaus et al., 2016).
<ul style="list-style-type: none"> • Build the capacity of users to find, re-use, create and share OERs/MOOCs. • Empower educators and learners to develop quality, gender-sensitive, culturally and linguistically relevant OER/MOOC appropriate to local cultures and to create local language OER/MOOC. • Ensure inclusive and equitable access to quality OER/MOOC (OER AP, 2017).

As specified by Capetown Open Education Declaration (2017), the Open Education should be connected with other open movements and should put the next generation at its core (Capetown, 2017).

In spite of the existence of declarations for open education support in the Romanian government documents, a more coherent strategy is needed, similar to "Opening up Slovenia" (<http://www.ouslovenia.net>), in order to build legal mechanisms for implementing open education and for carrying out concrete, cross-dimensional open education projects.

Also, learning from the experience of the Polish Coalition for Open Education (Śliwowski and Grodecka, 2013), the Romanian Coalition for OER could play an important role as an open education observatory, shaping the policy of openness.

We hope this study will be a useful reference point for further discussions within and between different institutions and policy makers in charge with the Open Education, OER and MOOC policies in Romania.

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