Open Virtual Mobility
O6 - A1 Guidelines for designing OERs in Virtual Mobility
- Final draft -

Outcome 6 Activity 1 Virtual Mobility OER	
Document submission and review information	
Declared due date of deliverable	31 August 2018
Reviewed due date of deliverable	31 July 2018
Actual submission date	11 July 2018
Organisation name of lead contractor	Roma TRE University
Revision	
Author and reviewer information	
Name of the author	Antonella Poce, Francesco Agrusti, Maria Rosaria Re, Francesca Amenduni
Affiliation of the author	Roma TRE University
Name of the reviewer	Gemma Tur and Santos Urbina
Affiliation of the reviewer	UIB

Imprint

PDF download- only for final draft

Social media

Suggested citation

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Executive summary

The present paper describes the results of a literature review about Open Educational Resources (OERs) and how OERs are used and conceptualized in the frame of OpenVM Erasmus + Project. OERs are "digital learning resources offered online freely (without cost) and openly (without licensing barriers) to teachers, educators, students, and independent learners in order to be used, shared, combined, adapted, and expanded in teaching, learning and research". OERs are interconnected with other concepts such as Open Source, Open Practices and Open Source. Some OERs repositories are described and then it will described the criteria followed by OpenVM Erasmus + Project for the quality assessment of OERs.

What are the objectives of this paper?

The objectives of this paper is to deliver a framework and guidelines for Open Resources design and creation to be used as a basis on which building the definition of a shared VM MOOC with a series of different themes and activities for HE teachers and students.

Who is this paper for?

- Technicians interested in using OERs in Open Virtual Mobility
- Pedagogues and didacticians interested in choose and select OERs for their own Open Virtual Mobility experience
- Researchers interested in discussion and presentation of currently existing challenges in the field of OERs in Open Education and Open Virtual Mobility

What topics are addressed in this paper?

OERs, Open Education, Virtual Mobility, OER Repositories, OER quality.

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1. Aims and Scope

The aim of this draft is to deliver a framework and guidelines for Open Resources design and creation to be used as a basis on which building the definition of a shared VM MOOC with a series of different themes and activities for HE teachers and students.

2. Background and rationale (State of the Art)

As stated in the JRC Science for Policy Report (2016), Open Education is understood as a mode of realising education using digital technologies to provide alternative and less restrictive access routes to formal and non-formal education. This perspective is broad to enable a comprehensive view, thus encompassing for instance Open Educational Resources (OER), Massive Open Online Courses (MOOCs), and recognition of open learning.

According to OECD definition (2012), Open Educational Resources (OER) are "digital learning resources offered online freely (without cost) and openly (without licensing barriers) to teachers, educators, students, and independent learners in order to be used, shared, combined, adapted, and expanded in teaching, learning and research" (Hylen et al. 2012). OER includes learning content, software tools to develop, use, and distribute content, and implementation resources such as open licence could include images, applets, lessons, units, assessments and more. OER are teaching, learning and research materials in any medium that reside in the public domain and have been released under an open licence that permits access, use, repurposing, reuse and redistribution by others with no or limited restrictions (Atkins, Brown & Hammond, 2007). The use of open technical standards improves access and reuse potential. This document aims at identifying the most debated issues regarding the definition of OERs and their use in Higher education within the scientific community of reference, besides identifying main points to deliver effective tools for teaching and learning within the project framework.

3. Methodology

A literature research has been carried out consulting different databases (ERIC, Google Scholar, PsychINFO). Different documents useful to answer the questions indicated above have been analysed. Some of the references so far consulted are indicated below in the Reference heading.

4. Intermediate results

Here, the main findings of the literature review are reported. In addition, it is described how these concepts are declinated in the specific context of the Erasmus+ Project Open Virtual Mobility.

MOOCS and OER

According to international literature (Bates 2014; Hayes 2015), MOOCs (Massive Online Open Course) can be defined as a product for teaching and learning which warrants a structured learning path which foresees:

a) a syllabus and clear teaching and learning objectives, materials and activities to support learning, an assessment system based on tests, exercises and projects, an accreditation system

b) to be accessible through an online platform

to be planned and managed so to warrant scalability in order to be accessed by a large number of people

c) to be accessible by everyone (no prerequisites, belonging to a specific institution, costs for participation)

This means that a MOOC cannot be an Open Educational Resources (OER) repository or a so called blended path, even if blended courses could integrate MOOCs in their curricula. A MOOC cannot have a limited number of students and cannot be reserved to University students enrolled in a specific university or institution.

Concepts and Characteristics of OER

OER can include full courses/programmes, course materials, modules, student guides, teaching notes, textbooks, research articles, videos, assessment tools and instruments, interactive materials such as simulations and role plays, databases, software, apps (including mobile apps) and any other educationally useful materials.

The term 'OER' is not synonymous with online learning, eLearning or mobile learning. Many OER — while shareable in a digital format — are also printable: *"By 'open access' to this literature we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself…"* (http://www.budapestopenaccessinitiative.org)

The OUVM (Opening Universities for Virtual Mobility) project presents a series of keywords related to open resources that could be useful in dealing with the topic (http://openstudies.eu/content/11-concepts-and-characteristics-oer):

Open Source - referring to the use of free software, which movement was based on higher education. For example, Moodle (https://moodle.org) is an open source eLearning platform, a software package designed to help educators easily create quality online courses.

Open Practices - characterized by the combination of features with use of open architectures of open learning, with the aim of transforming the twenty-first century learning environments, in which educational institutions, adult learners and citizens have the opportunity to build their learning pathways throughout life, in an autonomous and self-directed way.

The four levels of opennness that help in deciding about open practices is well described by Cronin (2017) http://www.irrodl.org/index.php/irrodl/article/view/3096/4301. Her article offers a clear picture to understand why, how, and to what extent academic staff use, or do not use, open educational practices.

Open Courses, courses that are offered online, with various payment models or completely free.

As Cronin herself reminds, the Open Education Consortium (n.d.) states that: "open education encompasses resources, tools and practices that employ a framework of open sharing to improve educational access and effectiveness worldwide." In fact open education goes beyond any restriction which could also be related even to technology use and kind of tool employed. It should be integrated in a different education culture and become part of it. Virtual mobility of course can be functional to such a change of culture.

Advantages and disadvantages of OER

The OUVM (Opening Universities for Virtual Mobility) project states a series of advantages and disadvantages as regards OERs (http://openstudies.eu/content/11-concepts-and-characteristics-oer) and we report them below:

Advantages

Freedom of access, both for yourself and others; Freedom from proprietary systems and corporations; Encourages pedagogical innovation; Lowers costs to students; Potential publicity; Method of collaboration; Helpful to future educators; Potentially beneficial to developing nations; Avoids 'vendor lock-in' or a situation in which you have to use one company's products (Hylén,. 2006).

Various authors support the idea that to increase the spread of knowledge each of us can learn from the others especially when teaching and learning are concerned (Teng & Hung, 2013). According to Weller (2012), openness represents an effective working method in higher education and creativity plays a key role in developing and supporting it. The relationship between creativity and open educational resources is outlined to demonstrate that there is a positive feedback loop between the two processes.

According to Weller (2012) creativity is generated by both "big" and "little" OERs: in the big one it is enhanced thanks to adaption of contents according to needs; in little OErs it comes out of the production process itself. Wiley, Green & Soares, in their paper "Dramatically bringing down the costs of Education with OERs (https://cdn.americanprogress.org/wp-content/uploads/issues/2012/02/pdf/open_education_resources.pdf, 2012) share the 4Rs model to indicate how they can be useful in a successful educational programme:

· Revise: adapt and improve the OER so it better meets your needs
· Reuse: use the original or your new version of the OER in a wide range of contexts
· Remix: combine or "mashup" the OER with other OER to produce new materials
· Redistribute: make copies and share the original OER or your new version with others

Disadvantages

Some institutions (Hylén, 2006). may be concerned about 'giving it away'; Requires varying degrees of continual financial support; Technical requirements vary and some require you to use a particular software; May need a high degree of customization (called localisation in the OER community); Need to check accuracy before use; May not meet accessibility requirements for persons with disabilities; quality varies; Some projects require startup resources; Starting large projects can be difficult; Teachers sometimes not rewarded by the system for their efforts; Varying degrees of time commitment

Hassler, Hennessy, Knight, & Connolly (2014) state that open-licenses of resources are not generally respected although teachers are willing to use them properly from suitable repositories, so a keen attention must be paid here and it is taken into consideration later in this document.

Finding and Selecting OER for a VM course

Find and Select an OER: Searching Repositories

As stated in OUVM site, Wiley (2010) addresses a key issue about openness and sharing learning: "If open education practitioners (both individuals and institutions) cannot move from large-scale sharing to large-scale adopting, the field (OERs) is dead." http://opencontent.org/blog/archives/1689

There is an abundance of OERs that could be used are deposited and it is possible to discover from whole courses to smaller learning objects a lot of valuable, reusable educational content for a variety of subjects.

There are different types of Repositories in the world that store Open Content and hosts collections of OERs. Some of them are good examples of Open Educational Resources Repositories.

All of the resources are free and can be used as they are or adapted, remixed, that is: they can be used or re-used.

A repository supports mechanisms to import, export, identify, store and retrieve digital assets. Putting digital content into a repository enables staff and institutions to manage and preserve it, and therefore derive maximum value from it.

Educational repositories mainly contain e-learning objects, different types of teaching materials or research data (Santos-Hermosa, Ferran-Ferrer, & Abadal, 2011).

Find and Select an OER: Searching other Online Sources

The OUVM identified different types of repositories in the world. They selected some of them as examples of *Open Educational Resources* Repositories. All of the resources are free and can be used as they are or adapted, remixed: they can be used or re-used. See the table below with the main ones

Repository Name	Link	Country
Ariadne	http://www.ariadne-eu.org/	European Union
Federica	http://www.federica.unina.it/	Italy
Gold	http://gold.indire.it/gold2/	Italy
E-MYKOMASIS	http://www.emokymasis.com/tinklarascarontis/scientix-projektas-atvirieji-vietimo-itekliai-gamtos-moksl-ir-matematikos-mokymuisi	Lithuania
NDMA (National Association of Distance Education)	http://www.ndma.lt/lt/turinys/atvir%C5%B3j%C5%B3-%C5%A1vietimo-i%C5%A1tekli%C5%B3-kaupyklos	Lithuania
R21	http://r21.ccems.pt/	Portugal
RODA	http://roda.culturaextremadura.com/	Spain

PROCOMON	http://procomun.educalab.es/comunidad/procomun	Spain
Lab Space	http://labspace.open.ac.uk/	United Kingdom
Merlot	http://www.merlot.org	United States
National Learning Network	http://www.nln.ac.uk/	United Kingdom
OER Commons	http://oercommons.org/	United States
OER Online Archive	http://www.archive.org/	Undefined
L'Université Numérique	http://univ-numerique.fr/	France

How to exploit OERs potential in order to enhance learning ?

There are several institutional initiatives about OER. Two of the most interesting are reported below:

OpenLearn **-** An initiative launched in the UK, the Open University UK (OUUK) is the OpenLearn, which began in 2006, funded by The William and Flora Hewlett Foundation (foundation that stands out for leading numerous OER initiatives). The main difference between this initiative and the MIT OCW is that itdoes not only provide a selection of materials available for free use, but it also provides tools to help all those who wish to develop and publish educational resources, with the goal of simultaneously building communities of students and educators through various tools and strategies [http://www.open.edu/openlearn/].

OpenCourseWareConsortium - The relevance of this initiative is closely related to its international scope, the *OpenCourseWareConsortium* (OCWC). The OCWC is a community with members from all around the world, representatives of more than 100 higher education institutions and associated organizations, which assume a commitment to disclosure of OER and its impact on global education. Consortium members use a shared publishing model; each member undertakes to publish a minimum of ten courses in a format that meets the definition of OCW. A special feature of this initiative is that of promoting the sharing between institutions, which allows developing a common

assessment framework to all members of the Consortium, in trying to establish quality criteria [http://www.oeconsortium.org/].

Using OERs in a Virtual Mobility Context course

Producing and Reusing OERS for Virtual Mobility

To produce an OER you should decide what tools or electronic resources to use, as well as the formats (multimedia, text, etc). In any case you should decide under what type of licence to support the openness of the content produced - a *Creative Commons* Licences other or similar licence (Topic *Introduction to intellectual Property and Creative Commons Licence*). This is the key aspect to transform the resource created in an open educational resource.

When planning the OER it is important to define some items previously:

- What is the aim of your OER?

- What are the learning goals?

- Who are the VM learners? They might be teachers or students in HE but they could be any of the personas we are creating in O2.

- What level are they at?

- How will the OER be delivered and reused (what permissions/license)?

As regards this point it is always important to bear in mind that as Lorna Campbell reminds us resources licensed with the No Derivatives clause are not OER, so let's pay keen attention on that https://lornamcampbell.wordpress.com/2015/04/22/oer15-better-late-than-never/

How to design OERs in a Virtual Mobility context

First thing to do is to plan how to produce an open educational resource on the topic of your VM course module.

According to OUVM, the plan should include the purpose and context of use, target groups, 5 keywords, media (text, presentation, audio, video, mashup, etc.), tools/services or and type of open licensing.

After undertaking these tasks, how to plan the production of OERs in a virtual mobility context will be clearer. Some resources can be modified, adapted, remixed and re-used and redistributed. In some cases they are modular, allowing the users to modify some parts and re-mixed, using other combinations to address other learning outcomes or learning activities. These interventions could be done by the author or by the users of the OER and with ICT tools. OUVM suggests to use this Introductory Guide [*How to Search for Open Educational Resources*, http://elearninginfographics.com/how-to-search-for-open-educational-resources-infographic/] and

this video [https://www.youtube.com/watch?v=CUVW5fhQP2k] to support your needs and guide your journey.

The resources with Creative Common Licenses allow reuse and redistribution. The OUVM warns that all resources licensed with "no derivatives" (ND) cannot be modified or adapted. Also it suggests to ensure that you correctly attribute content to its creator and otherwise meet the terms of the license under which the resource is shared/published. More information about this at: https://creativecommons.org/videos/wanna-work-together

Why employ OpenVM model

Within the project we will create online, open and flexible opportunities for HEIs, educators and students to acquire, assess and recognize their VM Skills and this way increase readiness and confidence to implement VM Actions. This includes a quality-assured and user-friendly tool to pre-assess own VM skills, receive recommendations for Open Learning and OERs to close possible skill gaps, recognize VR Skills with Open Credentials and communicate VM expertise in open, digital environments.

In OpenVM, we use innovative pedagogical approaches and new modes of learning for achievement of VM Skills, such as Open Learning by Design (e. g. learning about VM by designing a MOOC), Crowd Collaboration (e. g. designing OER on VM through transnational online collaboration).

Creating groups of learners working on co-designing and in crowd cooperation will help and facilitate involvement of participants with fewer opportunities, e.g. figuring out specific tools and/or instruments to support these groups.

Participants will be assigned to groups where different competence needs are indicated and all together will design the structure of the MOOC to be created and identify the resources to be used.

The MOOC developed this way will be integrated into the VM Learning Hub (O2) and the approach in a piloting phase where all the VM service are in place will be evaluated against the real user/learner experience."

Delivery of an OER

The OER will be produced following the Crowd Creation approach engaging not only partner organisations but also HE individuals and organisations from outside the partnership to create OER that have a tangible value to promote Virtual Mobility Skills in Europe. The quality assurance of the OER will be carried out in alignment with Output 7."

Once decided the topics each partner will think of outputs , e.g. matching tool (Johannes) and gamification (Ilona).

Examples of Learner's activities:

1. Co-creating OER – identifying steps and micro-activities necessary to co-create OER

status of the stakeholder: student or teacher ? description of the activity ,things to be done, skills to be acquired and / or pedagogical objective, outcomes , different stages and the roles (peer reviewer, co-designer ..) of each participant ; to assess a VM competency that the teacher asks students to send evidence to prove that the student has actually acquired that competence tool used (MCQ, workshop,collaborative tool etc

2. Peer-feedback/review of evidence for open credentials (see O5 on e-assessment (Gerard)

3. Co-design of Collaborative learning activities in the MOOC - some first ideas about what these may be would be very helpful also for other outputs

Assessment and quality

On a general basis, quality can be defined as «the standard of something as measured against other things of a similar kind; the degree of excellence of something» (Oxford Dictionary). Speaking of quality means quality assurance, quality audit and quality enhancement (Conole, 2013). In particular:

Quality assurance: it is the tool through which one institution assures and confirms that all the conditions have been respected so that students can reach standards defined by the institution itself or by any other accrediting body. (QAA, UK).

Quality audit: it is a recurring independent and documented exercise related to every activity, recordings and processes and other elements of the quality system to determine conformity with quality standards (businessdictionary.com).

Quality enhancement: it is a process through which, at institutional level, steps are taken to improve learning opportunities. Quality improvement is seen as an aspect of institutional quality management which is planned to assure relevant stable and measurable quality improvements and learning opportunities. (QAA, UK). Some references useful to develop this point are the following:

- Online Learning Consortium, Quality scorecards handbook;

- C. R. Wright, Criteria for evaluating the Quality of Online Courses, Alberta Distance Education and Training Association, 2003;

- Ulf-D. Ehlers, Quality in e-learning from a learner's perspective, European Journal for Distance and Open Learning, 2004.

- G. Conole, MOOCs as disruptive technologies: strategies for enhancing the learner experience and quality of MOOCs, 2013.

In line with Output 7, quality assurance of OER will be addressed through an iterative cycle of:

- Design

- Creation

- · Implementation

- · Assessment, following the Design Based Research model.

Atenas et al. (2014, https://journal.alt.ac.uk/index.php/rlt/article/view/1419) list a series of quality actions to identify resources to be taken into consideration:

- · Choose resources already valued as high quality by peers

- · Start a community discussion on a specific resource

- · Use those resources where keywords are clearly identified

- · Choose those able to generate metadata

- · Choose those which includes social media tool

- · Choose those which clearly state the type of creative commons license

- · Choose those where the source code is indicated

In the framework of the OpenVM Erasmus + project, three main indicators have been identified for the OERs Evaluation (Poce, Agrusti & Re 2015), to assess OER to include in the VM MOOC:

1. Quality
2. Appropriateness
3. Technical aspects

Each main indicator has been divided into different sub-indicators:

1. Quality
   a. Creator knowledgeable (Who is the creator and what kind of expertise and experience do they have?)
   b. Creator authenticity (Are you reasonably certain that it is actually the work of the person claiming to be the author?)
   c. Creator bias (What is the intended purpose? (Think educate/inform, sell something, entertain, change minds/behavior, even propaganda/hate speech)
   d. Organization affiliation (What is the "hosting" organization and what kind of reputation do they have?)
   e. Organization quality control (Does the hosting organization conduct any sort of quality control?)
   f. Peer reviewed (Has it been through peer review?)
   g. Material(s) currency (How recent or up-to-date is its content?)
   h. Type of assessment (T/F; multiple choices; filling in the blanks; matching; open ended)
2. Appropriateness
   a. Clearness of structure and content

      b.   Difficulty level (from 1 to 3)
3. Technical aspects
      a.   Licensing status (What is its copyright and licensing status and how does that impact what you can do with it?)
      b.   Accessibility (Human - Is it accessible to people with disabilities?)
      c.   Remix or Edit (If you want to remix it, is the source file available, and in a format that you can edit?)
      d.   Accessibility (Is it accessible to people using computer or mobile?)
      e.   Technical Quality (in terms of graphics, sound, text layout)
      f.   Numbers of questions

OERs creation and collection for the OpenVM MOOC

Project partners have been providing OERs in different formats and languages, following the quality guidelines presented above and according with the skills content defined in the O1.
The OERs related with the skill "Media and Digital Literacy" were already selected by the Roma Tre Team and validated by the OUNL University and the ULIB University. These OERs are used in the OpenVM MOOC (O6) and they are organized by following the principles of gamification (O5).

OER Title	OER Type	Abstract	URL	Producer
Web Literacy for Student Fact-Checkers	book	A practical guide for the student fact-checker. It supplements generic information literacy with the specific web-based techniques that can get you closer to the truth on the web more quickly.	https://webliteracy.pressbooks.com/chapter/chapter-1/	
Creative Commons & Copyright Info	Video	Copyright Information, creative commons licence information, advice and help for YouTube video creators and video uploaders in this short, easy to understand film. Creative Commons licences explained.	https://www.youtube.com/watch?v=8YkbeycRa2A	Youtube

The GDPR	Video and text	This page provides a brief introduction to the GDPR and sets out what is specifically relevant for researchers.	https://maken.wikiwijs.nl/125518#!page-4392039	https://www.kennisnet.nl
Beware online "filter bubbles"	video	Eli Pariser argues why filter bubble will ultimately prove to be bad for us and bad for democracy.	https://www.ted.com/talks/eli_pariser_beware_online_filter_bubbles	Tedx
The Digital Competence Framework for Citizens	Book	The report presents the latest version of the Digital Competence Framework for Citizens which was elaborated by the Human Capital and Employment Unit (Joint Research Centre) on behalf of the Directorate General for Employment, Social A airs and Inclusion of the European Commission.	http://publications.jrc.ec.europa.eu/repository/bitstream/JRC106281/web-digcomp2.1pdf_(online).pdf	DIGICOMP
The nightmare videos of children's YouTube - and what's wrong with the internet today	video	Writer and artist James Bridle uncovers a dark, strange corner of the internet, where unknown people or groups on YouTube hack the brains of young children in return for advertising revenue.	https://www.ted.com/talks/james_bridle_the_nightmare_videos_of_childrens_youtube_and_what_s_wrong_with_the_internet_today	Tedx
(Dis)Connected Learning: the messy realities of digital schooling	Video	Neil Selwyn highlights the ways in which schools' actual uses of technology often contradict presumptions of 'connected learning', 'digital education' and the like	https://www.youtube.com/watch?v=Ir1-nSAwQMs	youtube

Murky Conceptual Waters: the Public and the Private	scientific papers	The paper identifies a number of distinct meanings of the concepts. It argues that the public and private be treated as multi-dimensional, continuous and relative, fluid and situational or contextual concepts, whose meaning lies in how they are interpreted and framed. Those using the terms public and private would benefit from more clearly specifying which dimensions they have in mind and how they relate.	http://web.mit.edu/gtmarx/www/murkypublicandprivate.html	MIT course
From OER to Open Education: Perceptions of Student Teachers after Creating Digital Stories with Creative Common Resources	scientific paper	The current study explores the perceptions of three groups of student teachers in Spain after having used open licensed resources to construct their storytelling artifacts as OER. The results reveal a general positive impact on student perceptions, although nuances and challenges are observed.	http://www.edusoft.ro/brain/index.php/brain/article/view/594	Brain

The issue of Copyright

Navigating online we have developed the custom to consider absolutely normal to copy and share with everyone what we read and find on the web. As Wiley et al. remind us (2012), long before the Internet was invented, copyright law began regulating these two activities (copying and sharing). Consequently, the Internet was born at a severe disadvantage—pre-existing law prevents us from realizing its full potential. The advantage of OERs as high quality, affordable learning materials, can be freely accessed, copied and shared (and revised and remixed) without breaking the law.

4. Next steps

- Each partner selects a number of OERs related with the competencies defined in the Output 1;
- Each assesses the quality of OERs selected by using the criteria defined in the paragraph "**Assessment and quality**" of this paper";
- The best OERs will be selected and included in the MOOC;

5. Conclusion

This document contains results from literature and scientific review about current state of the art for Open educational Resources. In addition, the criteria selected in the Open VM Erasmus + Project for the quality assessment of OERs are presented. Despite some disadvantages related to the OERs, Open Educational Resources provide many educational opportunities such as freedom of access, lowers costs for students and collaboration. In addition, openness represents an effective working method in higher education and creativity plays a key role in developing and supporting it.

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