Open Virtual Mobility

O6 - A2 Guidelines for designing Open VM MOOC

- Final draft -

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Imprint

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This paper is to discuss and describe the concept of Open VM MOOC. This document is produced as part of Outcome 6 “OER, MOOC and Pilots ” and aims at design VM OER and the VM MOOC with a series of different themes and activities for both for higher education students and teachers, by means of innovative design methods such as the “MOOC Design Canvas”, the “Crowd Creation” and “Open Learning through Design”.

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Executive summary

The present paper describe which design principles we have been following for the MOOC design and delivery. The guidelines are inspired by previous experiences of VM and literature analysis and they can be useful to design future VM experiences.

What are the objectives of this paper?

The objectives of this paper is to deliver a framework and guidelines for MOOCs 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 MOOCs in Open Virtual Mobility
- Pedagogues and didacticians interested in designing MOOCs for their own Open Virtual Mobility experience
- Researchers interested in discussion and presentation of currently existing challenges in the field of MOOCs in Open Education and Open Virtual Mobility

What topics are addressed in this paper?

MOOCs, Virtual Mobility, MOOC Canvas, MOOC quality, Open MOOC..

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1. Aims and Scope

The main aim of this activity is to define the OpenVM MOOC design. The MOOC will offer educators and students an opportunity to reflect on and expand their teaching and learning approaches to Virtual Mobility. In addition, participants will document their effective practices in form of ePortfolios enhanced with Open Badges. The aim of the MOOC is to help educators and students develop a set of Virtual Mobility (look at paragraph 4) skills and apply them to Virtual and Blended Mobility programs, actions and activities in various academic disciplines.

2. Background and rationale (State of the Art)

The MOOC phenomenon started in 2008, when the term MOOC was used for the first time for the course *Connectivism and Connective Knowledge (CK08)* of the University of Manitoba in Canada. It was offered for free online and it reached 2200 students enrolled. This course was held by G. Siemens, S. Downes and D. Cormier. In 2011, S. Thrun and P. Norvig offered online the MOOC on *The Introduction to AI* which attracted over 160.000 enrollments. They were followed quickly by other MOOC in computer sciences by A. Ng and D. Koller. The MOOC phenomenon was started and the term MOOC was the *buzzword* in any learning congress or symposium.

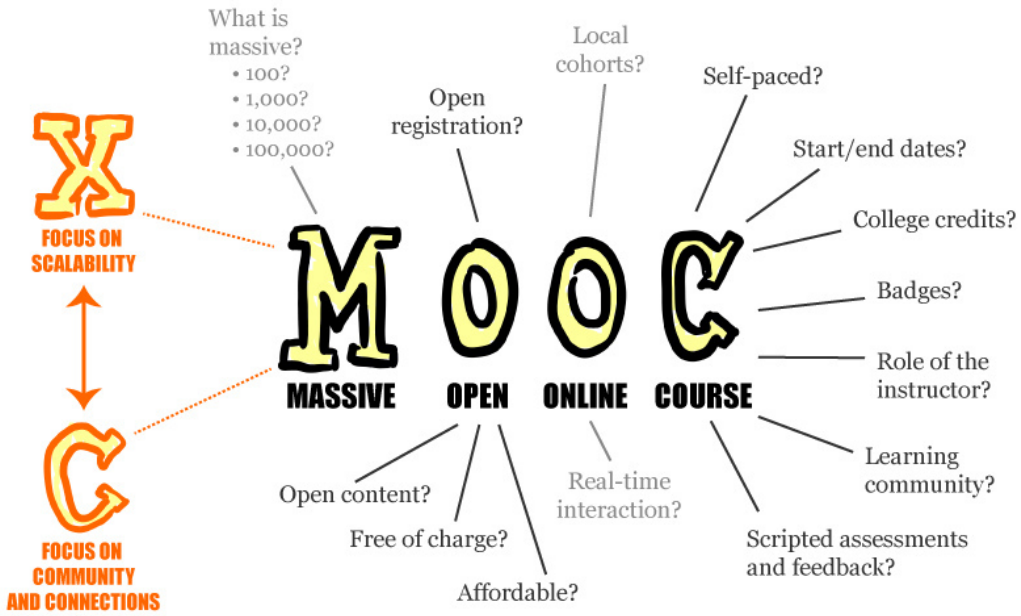

Figure 1 by mathplourde on Foter.com / CC BY

Quickly new elearning platforms started to appear: Thrun founded Udacity, Ng and Koller established Coursera. In 2012, the Massachusetts Institute of Technology (MIT) and Harvard University founded edX: an open source platform for MOOCs. At last, but not least, the U.K. Open University created the FutureLearn platform.

Figure 2 © of Dhawal Shah from Class Central

Class Central counts more than 9400 MOOCs globally, providing a list of top 5 MOOC providers by registered users. These numbers highlight that MOOCs satisfy relevant needs.

1. Coursera – 30 million
2. edX – 14 million
3. XuetangX – 9.3 million
4. Udacity – 8 million
5. FutureLearn – 7.1 million

Downes (2012) defined two different classification for MOOC:

- xMOOCs are the majority of MOOCs, They are offered through the mentioned providers and they are based mainly on video lectures and computer assisted tests, including some simple forms of social interaction with peers.
- cMOOCs are the MOOCs based on a connectivist approach, providing them a particular design based on openness, networking and in particular on heavy content contributions from the participants themselves.

xMOOCs are by far the most common MOOC provided, even if teachers have a lot of flexibility to create an xMOOC, Bates (2015) highlights the following common design features:
“

1. **specially designed platform software**: xMOOCs use specially designed platform software that allows for the registration of very large numbers of participants, provides facilities for the storing and streaming on demand of digital materials, and automates assessment procedures and student performance tracking.

2. **video lectures**: xMOOCs use the standard lecture mode, but delivered online by participants downloading on demand recorded video lectures. These video lectures are normally available on a weekly basis over a period of 10-13 weeks. Initially these were often 50 minute lectures, but as a result of experience most xMOOCs now are using shorter recordings (sometimes down to 15 minutes in length) and thus there may be more video segments. Over time, xMOOC courses, as well as the videos, are becoming shorter in length, some now lasting only five weeks. Various video production methods have been used, including lecture capture (recording face-to-face on-campus lectures, then storing them and streaming them on demand), full studio production, or desk-top recording by the instructor on their own.
3. **computer-marked assignments**: students complete an online test and receive immediate computerised feedback. These tests are usually offered throughout the course, and may be used just for participant feedback. Alternatively the tests may be used for determining the award of a certificate. Another option is for an end of course grade or certificate based solely on an end-of-course online test. Most xMOOC assignments are based on multiple-choice, computer-marked questions, but some MOOCs have also used text or formula boxes for participants to enter answers, such as coding in a computer science course, or mathematical formulae, and in one or two cases, short text answers, but in all cases these are computer-marked.
4. **peer assessment**: some xMOOCs have experimented with assigning students randomly to small groups for peer assessment, especially for more open-ended or more evaluative assignment questions. This has often proved problematic though because of wide variations in expertise between the different members of a group, and because of the different levels of involvement in the course of different participants.
5. **supporting materials**: sometimes copies of slides, supplementary audio files, urls to other resources, and online articles may be included for downloading by participants.
6. **a shared comment/discussion space** where participants can post questions, ask for help, or comment on the content of the course.
7. **no or very light discussion moderation**: the extent to which the discussion or comments are moderated varies probably more than any other feature in xMOOCs, but at its most, moderation is directed at all participants rather than to individuals. Because of the very large numbers participating and commenting, moderation of individual comments by the instructor(s) offering the MOOC is impossible. Some instructors offer no moderation whatsoever, so participants rely on other participants to respond to questions or comments. Some instructors 'sample' comments and questions, and post comments in response to these. Some instructors use teaching assistants to comb for or identify common areas of concern shared by a number of participants then the instructor or teaching assistants will respond. However, in most cases, participants moderate each other's comments or questions.

8. **badges or certificates**: most xMOOCs award some kind of recognition for successful completion of a course, based on a final computer-marked assessment. However, at the time of writing, MOOC badges or certificates have not been recognised for credit or admission purposes even by the institutions offering a MOOC, or even when the lectures are the same as for on-campus students. No evidence exists to date about employer acceptance of MOOC qualifications.
9. **learning analytics**: Although to date there has not been a great deal of published information about the use of learning analytics in xMOOCs, the xMOOC platforms have the capacity to collect and analyse 'big data' about participants and their performance, enabling, at least in theory, for immediate feedback to instructors about areas where the content or design needs improving and possibly directing automated cues or hints for individuals." (Bates, 2015 p. 153 / CC BY-NC 4.0).

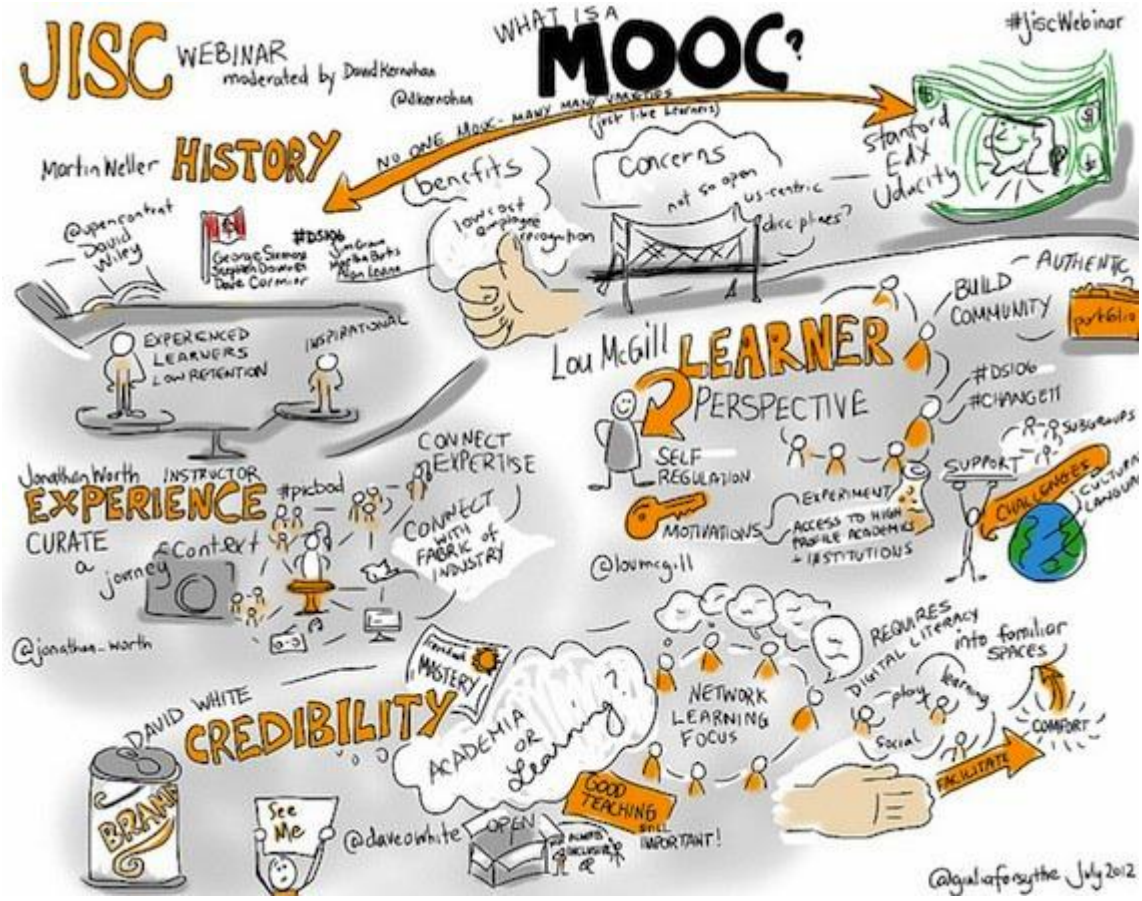

Figure 3 by Giulia Forsythe on Flickr / CC0

Given the OpenVM main aim, it appears clearly that the OpenVM MOOC will follow the design provided by the xMOOC definition.

3. Methodology

The VM MOOC will be designed using such methods as the MOOC Design Canvas, Learning by Design and other collaborative course development methods and tools. The MOOC design and implementation will be an iterative process in which all the steps are closely connected, and undergo continuous revision and improvement, as agreed in the Quality Assurance Framework developed in Output 7. Open Educational Resources will be pulled together from O6-A1 and finalised by project partners to ensure quality in alignment with O7. Each project partner will be responsible for providing a certain number of quality- assured OER in English language. This workload will be shared among partners. Besides the Open Content, the MOOC will include the Matching Tool (O3), E-Assessment (O4) and Open Credentials (O5) as well as all the necessary descriptions, explanations of the topics, bibliographical references, introductions to sessions and supplemental material. The Matching Tool (O3) will be used for group formation, i. e. connecting users for joint learning activities including the "Open Learning by Design" process in which user will create OER and MOOC sessions together. The E-Assessment (O4) will be used to assess own VM Skills and Open Credentials (O5) will be used to recognise VM Skills acquired through the MOOC design process but also elsewhere following the principles of distributed assessment.
Each partner contributes to the design of the MOOC. The quality assurance of the MOOCs will be carried out in alignment with Output 7.

Following the MOOC Guidelines based on best practices by Spyropoulou, Pierrakeas and Kameas (2014) it is possible to follow some examples provided by the major MOOC providers and instructors.

Category	Examples	Platform/s
Structure	*The course should be divided into sections that include activities aimed at completing within one week each.*	*FutureLearn, Ivercity, Edx, Coursera*
	For each section should be given a descriptive name in order learners are informed on what they are going to learn during the corresponding week.	*FutureLearn*
	Each section should contain at least one educational video.	*Udecity*
	Besides video tutorials, a section should contain hypertext, video comprehension questions, exercises / tasks, discussion topic(s) and additional education material.	*Udemy*
	At the beginning of each section, learners should know what activities will be carried, when and why.	*Iversity*
	Educational materials and sections of the course should be visible to registered users even when the courses are completed.	*Iversity*
	Students should be able to navigate in different sections (e.g. weeks) of the course, giving the opportunity to find out what they will learn next.	*Coursera*
Duration	*Generally the courses are divided into 6-14 sections, which have a maturity of one week each. The duration of the courses varies from 6-14 weeks.*	*FutureLearn, Ivercity, Coursera, Edx*
Enrolment dates and deadlines	*Students should be informed about the enrolments dates and deadlines in the course description page. After the end of the course registered students should be able to enter the course, but should not be option for new enrolments.*	*FutureLearn, Ivercity, Coursera, edX*
Engagement Time	*Recommended time engagement of learners could be between 3-4 hours to 10 hours per week. The information should be occurred in the course description page.*	*Iversity*
Certification	*Learners after a successful completion of the course obtain a free certificate of attendance, which certify that the participant has successfully completed a course, without confirmation of learner's identity. A Certificate with a verified identity could be provided, by paying a certain fee.*	*edX*
Communication and Collaboration	*Academic staff should encourage learners to support a network of cooperation, with the active participation of all and to exploit the power of community for continuous online support, where everyone has the opportunity to become an instructor and learner.*	*edX, Coursera, Udacity, FutureLearn*
Assessment	*Generally, during a course, the educators undergo a series of evaluations. This can be exercises or a task (which usually comes at the end of the course). The exercises can be open response, multiple choices, gap-filling and matching.*	*Coursera, Udacity, FutureLearn, Iversity, edX, Udacity*
Download ability	*It is recommended to have the educational material downloadable*	*Udemy*
Accessibility	*The educational material is proposed to be created is compatible with the Web Content Accessibility Guidelines (WCAG) 2.0, so as to maximize learner participation, including learners with disabilities.*	*FutureLearn*

Table 1. Course curriculum and configuration best practices (Spyropoulou et al., 2014, p. 6984).

Moreover the authors provided also examples for educational material:

Category	Examples	Platform/s
Educational Video	*Educational videos should be often stopped and ask students to answer a simple question about the content of the video [General]*	*Coursera*
	The educational video should be include at least 60% of the educational MOOC material [General]	*Udemy*
	The duration of the videos should be 5 to 20 minutes (depending on the content) [Technical]	*Udemy*
	The File Size should be up to 1 GB [Technical]	*Udemy*
	Presentations should contain photos, charts or/and diagrams [Technical]	*Udemy*
	The video should be clear, 720p or High Definition [Technical]	*Udemy*
	The guidance should be clear, attractive and easy to follow by learners. Also should be including examples for understanding concepts. [Educational]	*Udemy*
	The guidance should not only provide information, but also to help learners to apply their learning through interactive activities. [Educational]	*Udemy*
Presentation	*Presentations should contain useful additional material (e.g. presentation slides, springs, files Zip, resources) [General]*	*Udemy*
	Recommended applications to create presentations are: PowerPoint, Keynote, and Prezi [Technical]	*Udemy*
Hypertext	*Combination of elements on each page (if possible), such as text, image without overloading the page [General]*	*Udemy*
Document	*Online literature (such as a e-book) should be available in each course.[General]*	*edX*
	Online articles should be available in each course [General]	*FutureLearn*
	The available documents / essays of each course should be downloadable. [Technical]	*Udemy*
Audio	*Video lectures should include audio where the voice of the instructor guides the learners [Technical]*	*Udemy*
Quizzes	*Courses should include quizzes to enhance learning in educational activities [General]*	*FutureLearn*
	Feedback should always be included in quizzes [Educational]	*FutureLearn*
	Quizzes could be used to count the total score of the learners [Educational]	*FutureLearn*
	Open answer quizzes are recommended to be used, when it is needed (e.g. in programming courses in order to write code) [Educational]	*Udacity*
	Quizzes should be created based on the real- world context to help learners transfer their knowledge in real life [Educational]	*Udemy*
Wiki	*Using wikis students could be able to submit additional resources and concepts on each course [Educational]*	*edX*
Projects	*Projects are recommended to be assessed by other learners (peer-review) [Educational]*	*Coursera, Iversity*

Table 2. Educational materials best practices (Spyropoulou et al., 2014, p. 6986-7).

4. Intermediate results

Four areas have been identified as main content for the OpenVM MOOC (OVMOOC):

1. Intercultural Competences
2. Digital Skills
3. Open Virtual Mobility Knowledge
4. Self Regulated Learning

Three levels are then identified for each area: beginner, intermediate, advanced. Defining the eight areas with the three levels gives the following image

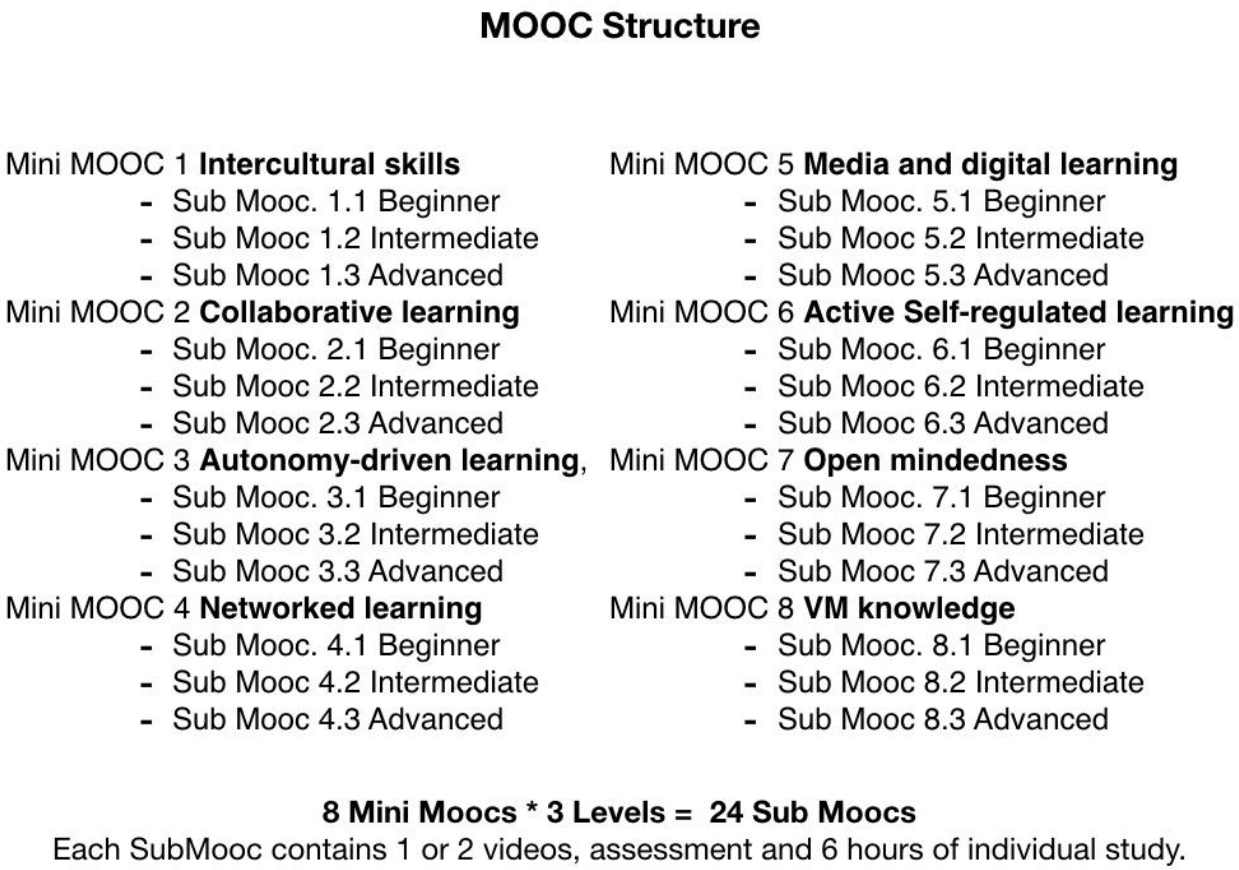

Figure 4 - OpenVMMOOC structure.

Each combination between content and level has been called SubMOOC. A SubMOOC is a section of the OVMOOC and it has the following characteristics:

1. Its characteristics are described following the steps 5 to 11 of MOOC CANVAS conceptual Framework.
2. It has an entrance test to verify the level of the participant. If the participant has already obtained the Open Badge from the previous level, this test will be omitted.
3. It is referring only to a complexity level (beginner, intermediate, advanced).
4. It is referring only to a content (Intercultural Competences, Digital Skills, Open Virtual Mobility Knowledge, Self Regulated Learning).
5. It contains 1 or 2 videos (maximum length 9 mins, minimum length 2 mins).
6. It contains at least 1 presentation and 1 hypertext document.
7. The intermediate and advanced SubMOOCs have also online literature references included (online -book or online articles).
8. Once the participant completed it, an Open Badge will be issued.
9. It lasts 1 week.

10. It contains at least 1 formative assessment quiz composed by closed items (MCQ, FIB, T/F, Matching) with included feedback.
11. It contains at least 1 summative assessment quiz composed by MCQ items with included feedback.
12. The intermediate and advanced SubMOOCs have a peer assessment based on the Tune Models of Peer Assessment described by Piech and others (2013).

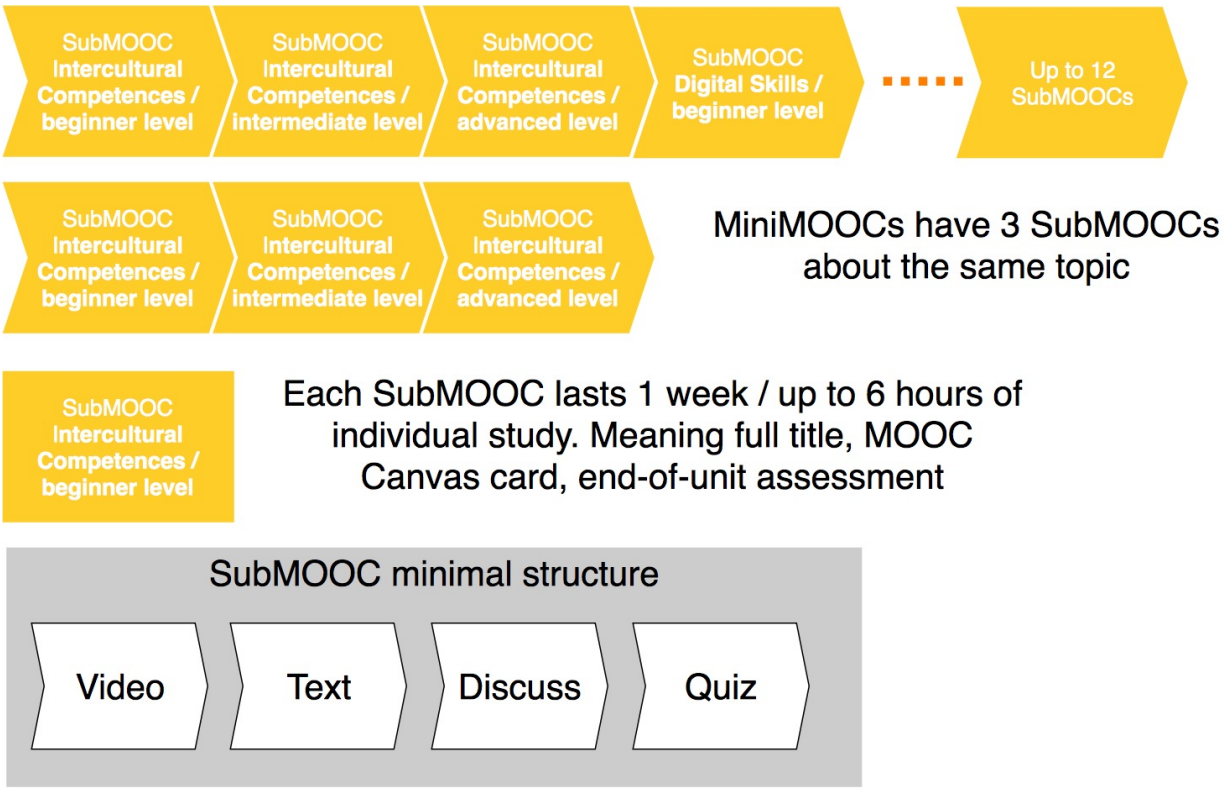

Figure 5 - Example of OpenVMMOOC structure.

Sub MOOC Structure (SMS)

Hereafter you will find the sub MOOC flowchart and the sub MOOC card (obtained from MOOC CANVAS conceptual framework).

To create a new MOOC card: https://www.it.uc3m.es/calario/MOOCCanvas/newCanvas.html (except point 1 to 4)

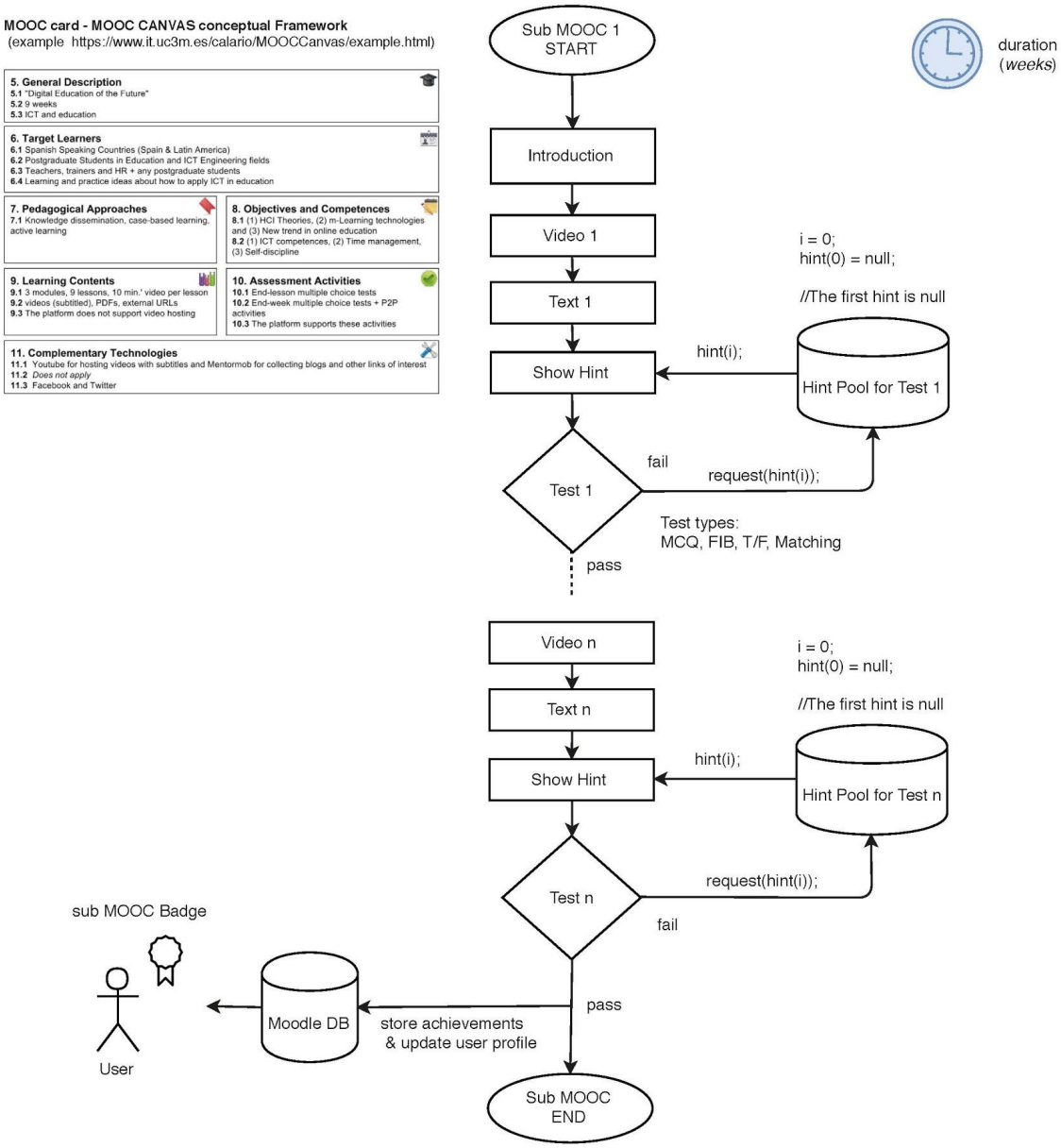

Figure 6 - SubMOOC Flowchart

Detailed skills for each area (reclustering from O1)

1. Intercultural skills

Gaining cultural knowledge Gaining knowledge about the culture they "visit"; Getting to know other cultural-based perspectives of education.	***Understanding cultural perspectives*** Improving understanding of intercultural issues at general and disciplinary level; Getting a feeling of how learning (or teaching) is like in a different country.	***Enhancing own cultural identity*** Gaining knowledge about own culture; Become self-aware of their own cultural identity.
Enhancing cultural understanding Gaining international, intercultural experiences; Experiencing different cultural settings (in all its facets) through online courses; Exposure to different working and cultural backgrounds.	***Demonstrating cultural understanding*** Direct interaction with peers from other cultural settings during VM activities; Exchange knowledge with peer from different cultural settings; Being able to deal with intercultural issues.	***Applying intercultural awareness in culturally challenging circumstances*** Learning to reserve judgment on the people you work with, to avoid cultural misunderstandings; Becoming self-aware of the cultural prejudices; Can deal with intercultural issues; Feeling confident in interacting with people from other cultures.

2. Collaborative learning

Having enhanced teamwork skills Enhancing teamwork skills	***Collaborating with peers from different disciplines*** *Exchanging knowledge with peers from different disciplines;* *Interacting and collaborating with peers from different disciplines.*	***Collaborating with peers within the context of an international learning experience*** Experiencing different learning methodologies; Having a learning experience different from learning offline and in own country; *Collaborating in the open digital contexts.*	***Interacting with authentic international resources in a foreign language*** Interacting with libraries and databases, in other countries in a foreign language; Access to and use of authentic resources in a foreign language.

3. Autonomy-driven learning

Demonstrating self-directedness in decision-making on own learning Developing learning self-regulation strategies; Developing persistence and creativity in organizing one's own study.	***Demonstrating independent learning*** Being able to study in a flexible way, independent of time and place; Enhancing lifelong learning skills; Adapting and further developing knowledge of Open Education ICT tools; Learning in an open digital context.

4. Networked learning

Engaging in digital networking Being able to use networks (being "networking savvy") for learning; Learning to work and cooperate in an international setting with the use of ICT and social platforms; Enhancing international and digital competence.	***Dealing with complexity in networked learning*** Crossing boundaries in learning; Learning how to deal with complex situations; Learning how to deal with ambiguity.

5. Media and digital learning

Demonstrating learner control Bringing a high level of self-regulation competency to the online collaboration aspect; Setting one's own learning objectives; Organizing content and schedules;	***Being proficient in using online learning technologies*** Awareness of the differences between on- and offline; Proficiency in searching for new courses & resources; Proficiency in using digital platforms; Proficiency of independent use of tools for online communication.	***Being proficient in assessing quality in courses and resources found online*** Proficiency in assessing course and OER quality

6. Open mindedness

Being open-minded and tolerant Being open-minded; Being tolerant.	***Demonstrating self-confidence in interaction with peers and teaching staff*** Being not afraid of interacting with peers or teachers at other institutions	***Show willingness to improve proficiency in foreign languages*** Being proficient in foreign languages; Willing to further improve proficiency in foreign languages

7. Active Self-regulated learning

Being able to self-regulate learning processes Being self-responsible; Bing self-disciplined; Being able to plan and organize one's own learning; Being self-disciplined and pro-active.	***Being able to self-reflect on learning experiences*** Being able to reflect on one's own learning process Being communicative	***Demonstrating ownership over own learning (attitude)*** Being motivated to learn Being constructive towards the course goal. Has both digital and cultural competences

8. VM knowledge

Understanding Virtual Mobility Demonstrate understanding of Virtual Mobility models; Improving understanding of opportunities created by Virtual Mobility context.	***Understanding Open Education*** Demonstrate understanding of Open Education models; Improving understanding of opportunities created by Open Education context.

Pilot phase mini-Mooc: Media and Digital Literacy

The first mini-Mooc has been realised to be tested during the pilot phase and it is focused on the 5th skills "Media and Digital Literacy". The main topics of the course are open education, open resources and licenses, the web mechanisms that could affect learning processes, and media languages (multimediality, hypertextuality).
The pedagogical approaches used to design the pre-pilot are collaborative and social learning (Andriessen, Baker, & Suthers, 2013); reflective practices (Schön, 2017), and self-regulated learning (Zimmerman, 2013).
Before starting the course, participants are required to fill in a pre-assessment. According to the score obtained, participants could be directed to the basic level, to the intermediate level or to the advance level. For each level students need to read texts, e-books or pdfs, watch videos and participate to forum discussions. When they complete all the tasks, they fill in summative quizzes, write a post on their e-portfolios, make and receive peer-assessment in order to obtain a badge.

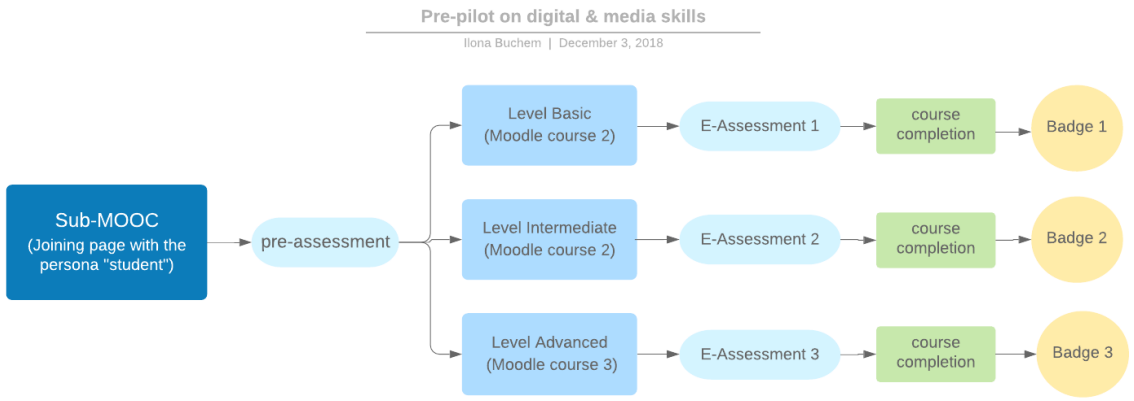

Figure 7 - Pre-Pilot Technical structure.

The pilot phase will last 2 weeks, 10 days to complete all the tasks and 4 days to complete the peer-assessment. In the present table an overview of the kinds of content selected for each level is presented.

MINI MOOC MEDIA AND DIGITAL LEARNING: an overview

LEVEL	KIND OF OERs and contents
Basic	1 e-book + 1 pdf + 1 video + 1 discussion forum + summative assessment
Intermediate	2 video + 1 pdf + 1 discussion forum + peer assessment
Advanced	1 video + 2 scientific papers + 1 discussion forum + peer assessment

The learning objectives defined for each level are the following.

Basic level:

1. Define and describe the basic principles of fact-checking while working with web-based sources;
2. Define and describe the basics of copyright and creative commons;
3. Define and describe Council of Europe Common European Framework approach to recognizing the role of culture in language learning;

Intermediate level:

1. develop knowledge and awareness about filter bubble and how to avoid its traps.
2. develop knowledge and awareness about skills and competences students and teachers need in the XXI century
3. develop knowledge and awareness about the power of advertisement for youtube users and effect on brain

4. Raise awareness of the term "network" as applied to the digital age and to learning. Understand the relevance of this theory to your own online learning experience and MOOCs

Advance level:

1. knowledge and deep insights about supertraces and digital footprints;
2. knowledge and deep insights about narratives as they have evolved from print to digital media.
3. understanding what OERs are, how to collect and use them and have deep insights about the merits and challenge around the use of OER

The learning outcomes defined for each level are the following.

Basic level: knowledge is demonstrated in short online quizzes;

Intermediate: knowledge is demonstrated in quizzes and awareness can be demonstrated in a blog post, a portfolio post and self-reflection.

Advanced: knowledge is demonstrated in quizzes and deep insight can be demonstrated in a blog post, a portfolio post and self-reflection.

5. Next steps

Conducting the pilot phase and assess it. Based on the evidence collected, assemble, design, structure and deliver all the other subMOOCs through the OpenVM learning hub.

6. Conclusion

Virtual Mobility represents a great opportunity to contribute to the students and educators internationalisation. ICT are supposed to guarantee the same benefits as one would have with physical mobility, but without the need to travel. Thus, it is required that technologies employed are carefully planned and continuous revised. This paper provides guidelines useful to design a Virtual Mobility experience based on the use of MOOCs and OERs. The guidelines are inspired by previous experiences of Virtual Mobility and literature analysis. Our MOOC is structured in 8 mini-MOOCs, corresponding to the 8 skills identified in the O1, that are Intercultural skills, Collaborative learning, Autonomy-driven learning, Networked learning, Media and digital learning, Active Self-regulated learning, Open mindedness and Virtual Mobility knowledge. Each mini-MOOC is divided in a basic, intermediate and advance level. This organization support self-regulated processes, because make clear for the MOOC users the learning path to follow. After completing the activities, students are required to fill in different kinds of e-assessment such as summative assessment and peer-assessment (O4) necessary to obtain an open badge (O5).

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Attachments

MOOC/MOOC Providers List:
https://docs.google.com/spreadsheets/d/1IkrXfVJkKUqha6TT57EwycPxKk5f_GlNfvyIORAPZro/edit#gid=0

Note:
Link your first draft document to your scope document in Google Table in a tab for your O#A# (in the field "Where?")