

Open Virtual Mobility

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Affiliation of the author	Roma TRE University
Name of the reviewer	Gemma Tur and Santos Urbina
Affiliation of the reviewer	UIB

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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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Corresponding author

Antonella Poce - Via del Castro Pretorio, 20 - 00185 Rome, ITALY - antonella.poce@uniroma3.it

Executive summary	4
What are the objectives of this paper?	4
Who is this paper addressed to?	4
Which topics are discussed in this paper?	4
MOOCs, Virtual Mobility, Pilot phase, MOOC quality, Design Based Research. ADDIE.	4
Contributors	4
1. Aims and Purposes	5
2. Background and rationale (State of the Art)	5
3. Methodology	7
3.1 The pre-pilot phase	7
3.2 The first pilot phase cycle	8
4. Results	10
4.1 The pre-pilot results	10
4.2 Preliminary results of the first pilot cycle	13
6. Conclusion	16
7. References	16
8. Appendix	17

Executive summary

The goal of this paper is twofold: firstly, we describe the way we assess and ensure quality for OERs and MOOCs, during the pilot phase of the Erasmus + project Open Virtual Mobility; secondly, we will present the design of our pilot-phase project organized in 3 iterations: 1. Pre-pilot phase 2. First pilot-phase cycle 3. Second-pilot phase cycle. Preliminary results of the first two iterations are presented. We eventually describe how to use the collected data to implement the MOOCs quality and effectiveness.

What are the objectives of this paper?

The objectives of this paper are: presenting the design of the pilot-phase carried out by the Erasmus + project Open Virtual Mobility and the preliminary results obtained; showing the way we use these results to improve the quality of the Open Virtual Mobility MOOC.

Who is this paper addressed to?

- Technicians interested in using MOOCs in Open Virtual Mobility
- Pedagogues and academics interested in designing MOOCs for their own Open Virtual Mobility experience
- Researchers interested in discussion and presentation of current existing challenges in the field of MOOCs in Open Education and Open Virtual Mobility

Which topics are discussed in this paper?

MOOCs, Virtual Mobility, Pilot phase, MOOC quality, Design Based Research. ADDIE.

Contributors

Antonella Poce, University of Roma Tre
Francesca Amenduni, University of Roma Tre
Maria Rosaria Re, University of Roma Tre
Carlo De Medio, University of Roma Tre

1. Aims and Purposes

The goal of this paper is twofold: firstly, we describe the way we assess and ensure quality for OERs and MOOCs during the pilot phase of the Erasmus + project Open Virtual Mobility; secondly, we will present the design of our pilot-phase project organized in 3 iterations: 1. Pre-pilot phase 2. First pilot-phase cycle 3. Second-pilot phase cycle. Preliminary results of the first two iterations are presented. We eventually describe how to use the collected data to implement the MOOCs quality and effectiveness.

2. Background and rationale (State of the Art)

In the context of Open Education, it is necessary to reflect and develop specific quality assessment tools, since traditional quality measures do not always match the specific features of an online or blended environment (Parker, 2008). There is a widespread skepticism about MOOCs quality and learning methodologies use and there is some evidence that confirms this skeptical view (Margaryan, Bianco, & Littlejohn, 2015; Lowenthal & Hodges, 2015). Therefore, Quality Assurance Framework (QAF) is one of the pivotal aspects for the success of the Open Virtual Mobility (Atenas, J., & Havemann, 2014). However, except for few initiatives and labels developed by e-learning networks, it seems that e-learning did not receive a lot of attention in terms of quality assurance from higher education institutions (Gaebel, Kupriyanova, Morais, Colucci, 2014). Quality can be defined as “[...] appropriately meeting stakeholders’ objectives and needs, which is the result of a transparent, participatory negotiation process within an organization.” (Pawlowski, 2007). In learning contexts, quality can for example be related to successful rates of students whose teachers used adequate resources and methods for their teaching. In a massive literature review promoted by the European Commission, Camilleri, Ehlers, & Pawlowski, (2014) discussed different levels and aspects of quality, which are relevant for quality management in Open Educational contexts, based on the analysis of 21 international Open Education initiatives. Although all the levels are interrelated and interdependent, we will focus mainly on two of the five levels: courses quality (in our case MOOCs) and individual OERs, used, adapted and / or developed to support Virtual Mobility at European Level. Whilst, the other 3 levels are more related to technical and management aspects; MOOCs and OERs are at the core of users’ learning enhancement and knowledge organization in any open educational paths. Therefore, in the first part of the paper we describe how we assess and ensure OERs and MOOCs quality, during the pilot phase of the Erasmus + project “openVM: Opening Education for Developing, Assessing and Recognising Virtual Mobility Skills in Higher Education”. Then, in the second part, we will present the design of our pilot-phase project organized in 3 iterations: 1. Pre-pilot phase 2. First pilot-phase cycle 3. Second-pilot phase cycle.

Preliminary results of the first two iterations are presented. We eventually describe how to use the collected data to implement the MOOCs quality and effectiveness.

Before describing the quality-approach adopted in terms of courses and educational resources (mainly based on the general framework - Output 7, see also Buchem & Urbina, 2018) we have to define what we exactly mean by courses (MOOCs) and OERs in the context of this research project. OERs are *digitised materials* freely and openly offered for educators, students and self-learners, in order to use and reuse for teaching, learning and research (OECD, 2007). OERs do not only include the singular course component, but also a whole course, a museum collection, an open access journals and a reference work. Over time, the term covered content management software, content development tools and implementation resources such as standards and licensing tools for publishing digital resources. Although often associated with OERs, MOOCs are very different because they do not necessarily use open licenses. MOOCs stands for Massive Open Online Courses. A MOOC involves people who are interested in learning and expert/s who tries to facilitate the learning. MOOCs have been classified through a set of 12 dimensions (Conole, 2013): the degree of openness, the scale of participation (massification), the amount of use of multimedia, the amount of communication, the extent on which collaboration is included, the type of learner pathway (from learner centered to teacher-centered and highly structured), the level of quality assurance, the extent in which reflection is encouraged, the level of assessment, how informal or formal it is, autonomy, and diversity. According to the Open Education Consortium, the word “Open” in MOOC does not necessarily mean open license – since it mainly refers to open enrolment. Even if a significant proportion of OERs are usually produced in order to be a specific part of a larger educational experience within a specific educational framework (Liyaganawardena, Adams, & Williams, 2013), MOOCs represent a self-consistent online courses. Having stated this,, in an open educational perspective MOOCs can be related to OERs, such as teaching, learning and research materials released under an open license. In this research, we will refer to MOOCs as self-consistent online courses aimed at a large scale participation (Daniel, 2012) and to OERs as the material study included in the MOOC learning path, that learners can read, listen, download and re-use. So far, many quality approaches to MOOCs and OERs have been developed in the field of Higher Education (Gaebel, Kupriyanova, Morais, Colucci, 2014; OECD, 2010). Quality approach can be designed as a centrally (e.g. internal quality procedures) or decentralized process (e.g. user comments and user ratings) that can be either opened or closed (OECD, 2007). *MOOCs quality* can be monitored collecting data from different stakeholders: users, partners and external experts in the field of e-learning (Atenas, Havemann & Priego, 2013). According to the framework of Design Based Approach model – DBR (Reeves, 2006; Easterday, Rees Lewis, & Gerber, 2018), collected data should be used to implement MOOC quality. This approach allows to improve educational practices based on collected data during learning experiences (Brown, 1992; Collins, 1992). DBR was developed to reduce both the gap between research and theory and educational practices. DBR should aim to support the achievement of 2 goals: advancing theory and at the same time contributing to the fundamental innovation and improvement of

educational practices in Higher Education. According to Easterday and colleagues (2018), the 6 phases of the DBR should be 1. Focusing 2. Understanding 3. Defining 4. Conceiving 5. Building 6. Testing. The DBR can be connected with ADDIE model, acronym of Analysis, Design, Development, Implementation, Evaluation (McKenney & Visscher-Voerman, 2013), commonly adopted to improve the process of instructional design. Therefore, we will combine the application of the ADDIE model as micro-iterations of one course iteration, and DBR as a broaden methodological framework to improve both theory and practice. In order to assure specific aspects of *OERs quality*, different tools can be used such as ratings, recommender systems, peer reviews and *social-ranking*, which can be described as a form of crowd-sourced peer-review (Camilleri, Ehlers, & Pawlowski, 2014). According to Atenas, Havemann and Priego (2013) quality assurance framework should take into consideration teacher's points of view, e-learning specialists and users, considering user-interface and user-experiences issues. Starting from these premises, we decided to combine different approaches to quality assurance in the OpenVM Erasmus + project for OERs and MOOCs. *OERs quality* has been guaranteed by following an *internal quality procedure*. Firstly, a rubric (Table 1) structured in 3 main indicators was developed: 1. Quality; 2. Appropriateness; 3. Technical aspects.

3. Methodology

Our pilot-phase was realised in order to assess the quality of the OpenVM MOOCs and its main components:

- Matching tool and group formation (Output 3);
- E-assessment, more specifically quizzes, e-portfolio and peer-assessment (Output 4);
- Gamification and badges (Output 5);
- Learning materials and course structures (Output 6),

The pilot phase is organized in 3 iterations designed on the basis of principles of DBR and ADDIE (Output 7): 1. Pre-pilot phase (December, 2018- January, 2019) 2. First pilot-phase cycle (September – December, 2019) and 3. Second-pilot phase cycle (2020).

This paper will be focused on the first two iterations. Future directions for the third iteration will be presented at the end of the paper.

3.1 The pre-pilot phase

The miniMOOC tested in the pre-pilot between December 2018 and January 2019 was the “Media and Digital Literacy” MOOC, which is one of the eight miniMOOCs composing the OpenVM MOOC. Each of the 8 MOOCs is aimed at developing one of the skills necessary to be successfully engaged in virtual mobility (Firssova, & Rajagopal, 2018) and they are: 1. Intercultural Skills; 2. Collaborative

learning; 3. Autonomy-driven learning; 4. Networked Learning; 5. Media and digital learning; 6. Active self-regulated learning; 7. Open-mindedness; 8. Virtual Mobility Knowledge.

The miniMOOC “Media and Digital Literacy” was the first to be launched and tested, as it was considered functional to navigate the OpenVM MOOC. The miniMOOC “Media and Digital Literacy” was organized following a structure designed to be adopted in all the miniMOOCs of the OpenVM MOOC (described in the last report of Output 6.2). The miniMOOC “Media and Digital Literacy” is aimed at developing Media and Digital Literacy skills. *Media and Digital Literacy* was defined as the ability set to use resources effectively to learn and to assess quality of resources; it should also show learner’s control (Firssova, & Rajagopal, 2018). According to the definition, selected topics of the course are open education, open resources and licenses, web dimensions that could affect learning processes, and media languages (multimediality, hypertextuality). MiniMOOC contents were selected by one of the project partners and peer-assessed by another partner.

Before launching the miniMOOC “Media and Digital Literacy”, designers from partner organisations were involved in weekly meetings for two months. When miniMOOC structure was decided, a pilot activity of the miniMOOC “Media and Digital Literacy” was launched, involving 30 university students from the leading partner organisation, Beuth University. The pilot phase lasted approximately 2 weeks; 10 days to complete all the tasks and 4 days to carry out peer-assessment.

At the end of the MOOC, students were invited to fill in an online questionnaire (drafted and administered by Beuth University, project’s coordinating organisation

<https://goo.gl/forms/tAcITPipKn57vSjr2>) organized in 3 areas (1) participants’ general evaluation, (2) participants’ specific evaluation (structure, learning materials, e-assessment) and (3) participants’ recommendations for improvement. All in all, the questionnaire included 14 open-ended questions. 11 participants from University of Beuth took part in the survey answering to the questionnaire. No specific details were collected from participants because researchers’ intent was meant to understand the process carried out notwithstanding background variables.

We performed two levels of analysis: a quantitative sentiment analysis and a qualitative content analysis. 194 sentences and 259 segments were analysed through sentiment analysis using the software MeaningCloud¹. The software calculated the percentage of positive and negative emotions expressed in the answers and the nouns most commonly associated to positive and negative words. Then the 141 answers were read and analysed qualitatively, in order to better understand which students appreciated most and which one didn’t appreciate.

3.2 The first pilot phase cycle

Between February and June 2019 each partner contributed to the realization of the remaining 7 miniMOOCs: 1. Intercultural Skills; 2. Collaborative learning; 3. Autonomy-driven learning; 4. Networked Learning; 5. Active self-regulated learning; 6. Open-mindedness; 7. Virtual Mobility Knowledge. In this way, all the miniMOOCs can be tested for the first pilot phase cycle from the beginning of October 2019 to December 2019. Each partner had to test one or more miniMOOC

¹ <https://www.meaningcloud.com>

within their university course. The table 1 shows the miniMOOCs that have been testing: MDL (Media and Digital Literacy); SRL (Self-regulated learning); IL (Intercultural Learning). The partners involved are: Beuth University; AUNEGE; UIB; Roma Tre.

MOOC and University	7/10 - 20/10	21/10 - 10/11	11/11 - 01/12	Deadlines
MDL - BEUTH + AUNEGE	Foundation	Intermediate starts 21 oct. Groups work from 31 Oct to 10 Nov	Advanced level - it starts on 10 Nov - Peer assessment from 15 to 26 November	Group Formation - 15 nov. e-portfolio - 26 nov. peer assessment
SRL - Beuth	Foundation	Intermediate		- 16 oct. Questionnaire Group Formation
SRL - UIB	Foundation			
SRL - Roma3	Foundation			No Deadline
IL - BEUTH		Foundation	Intermediate starts on 4 nov. Groups work from 7 to 11 nov.	Advanced level - it starts on 11 nov. Peer assessment from 16 to 26 november Group Formation - 15 nov. e-portfolio - 26 nov. peer assessment

Table 1: miniMOOCs delivery during the first pilot-phase cycle.

At the end of the subMOOC, students are invited to fill in an online questionnaire, designed by Roma Tre University and implemented by other involved partners.

The questionnaire is organized in 13 sections²:

1. Personal details (such as age, gender, affiliation and role); in this section participants are also required to say which of the 8 miniMOOCs they are assessing;
2. Personal emails, only for Roma Tre University students and teachers;
3. Personal emails, only for Beuth University students and teachers;
4. General questions regarding the MOOC. In this section, participants are required to express their level of agreement with statements regarding the MOOC on a Likert scale from 1 (strongly disagree) to 5 (totally agree);
5. Questions concerning badges and gamification. In this section, participants are required to express their level of agreement with statements regarding the MOOC on a Likert scale from 1 (strongly disagree) to 5 (totally agree);
6. Questions concerning technical aspects. In this section, participants are required to express their level of agreement with statements regarding the MOOC on a Likert scale from 1 (strongly disagree) to 5 (totally agree);
7. Participants have to say if they attend the foundation level. If they do, they will be directed to questions of the foundation level (section 8). Otherwise, they will be directed to the question regarding the intermediate level (section 9);
8. Questions regarding foundation level; in this section, participants have to express their level of agreement with statements concerning the MOOC on a Likert scale from 1 (strongly disagree) to 5 (totally agree);
9. Participants have to say if they attended the intermediate level. If they do, they will be directed to the questions of the intermediate level (section 10). Otherwise, they will be directed to the question of the advanced level;
10. Questions regarding intermediate level. Only in this section there are questions regarding Matching tool and group formation activity. Here, participants have to express their level of agreement with statements regarding the MOOC on a Likert scale from 1 (strongly disagree) to 5 (totally agree);

² https://docs.google.com/forms/d/e/1FAIpQLSeZQ6SYxglXcaXghGnjwoV362_QjICAbWR5Ssz8Yxp8gEw635g/viewform

11. Participants have to say if they attended the advanced level. If they do, they will be directed to the questions of the advanced level (section 12). Otherwise, they will be directed to the last section of the questionnaire;
12. Questions regarding advanced level. Only in this section there are questions regarding e-portfolio and peer-assessment activity; in this section participants are required to express their level of agreement with statements regarding the MOOC on a Likert scale from 1 (strongly disagree) to 5 (totally agree);
13. The last section was aimed at investigating to which extent the MOOC support self-regulated learning processes and was directed only for students who attended 2 miniMOOCs: Active Self-Regulated Learning and Autonomy Driven learning. In this section, participants have to answer both on closed-ended questions on Likert scale from 1 (strongly disagree) to 5 (totally agree) and open-ended questions.

4. Results

In this paper will be presented pre-pilot phase’s results (4.1) and preliminary results of the first cycle of the pilot phase (4.2).

4.1 The pre-pilot results

In most of the comments (47%), participants expressed positive sentiments regarding the mini MOOC media and digital literacy. Positive comments (Figure 1) are related to the nouns “learning, topics, content, design, visual, videos, community” and the adjectives “simple, clearer”. On the other hand, negative comments are related to the nouns “structure, e-test, e-portfolios, problems, task” and the adjectives “confusing, much, unattractive”.

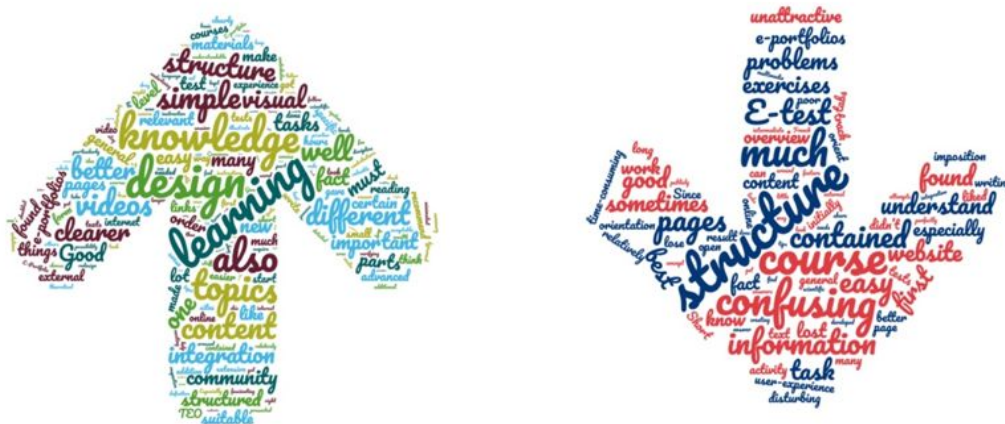


Figure 1 On the left, words related to positive sentiment and on the right, words related to negative sentiments.

Making a furthered analysis on students' answers, we can see that participants enjoyed the selected contents, especially showed through videos (see Extract 1). The foundation level course (related to Creative Common) was the most endorsed.

E1 *“The course was a useful introduction to Media Literacy. It contained advantageous information about important topics on internet, such as search verification on internet. This might be helpful for students. Videos on TEDx are fascinating. Instructions were easy to follow. Overall, I liked the course because it is a new way of learning and dispute with a new topic.”*

Although participants appreciated the opportunity to test their skills through e-assessment and e-portfolios, they also suggest an improvement of e-portfolio functionality, as reported in Extract 2. Participants need clearer instructions regarding the way to fill in the e-portfolios. Thus, for instance, a template might be provided.

E2 *“The E-Assessment was very useful to reflect on what I have learned. Small tasks were good. At the beginning, creating my E-Portfolio was difficult to me, because I didn’t have an example on how to start or write something. I also didn’t want to post my tweets publicly e.g. my skills. Students may think my skills are not enough. The E-test is on a good level.”*

Participants have opposing views on sharing publicly their reflections in the discussion forums or e-portfolios (Table 4). Although someone appreciated the opportunity to share their ideas with the communities (E3), others did not (E2; E4).

Table 4. Positive and negative attitudes towards sharing public participants’ reflections

Positive attitude on sharing publicly reflections	Negative attitude on sharing publicly reflections
<p>E3 <i>“I found very pleasant the fact that one could write a community contribution with the courses on a certain question or problem definition. It also gave me the opportunity to share knowledge and give feedback.”</i></p>	<p>E2 <i>“. I also didn’t want to post my tweets publicly e.g. my skills. Students may think my skills are not enough.”</i></p> <p>E4 <i>“I didn't like the fact that we had to answer questions or share tips publicly.”</i></p>

Some participants found the texts of the advanced level too long and complex and the instructions concerning related exercises not always clear. They did not appreciate to be re-directed to external links, both for e-portfolio and for contents, because they lost the track. Participants spent about 4 hours to complete the module, as required by the design phase. Specifically, they spent 60 minutes for the foundation level, 90 minutes for the intermediate level and 90 minutes for the advanced level on average.

Results of pre-pilot experimentation suggest that, despite the general positive assessment, room for improvement remains. The 11 participants who answered to the questionnaire enjoyed the selected contents, especially showed through videos. They appreciated the opportunity to test their skills through e-assessment, but they expresses the necessity to provide templates for e-portfolio. In general, it is important to make the structure clear and explicit, in order to support participants’

self-regulated learning. Results elaborated from the participants’ suggestions were adopted to improve the quality of the OpenVM MOOC. According to framework adopted in OpenVM Erasmus+ project, Virtual Mobility implementation has to follow an iterative process of ideation, design, assessment and re-design to be effective. We used the results to develop further features for our MOOCs (Figure 2):

- a diagram showing the route in the MOOC (Figure 2) itself and a bar status highlighting, where learner is located at any moment (Figure 3). Since some participants declared to lose the track, especially in the advanced level, diagrams could be helpful in terms of Self-Regulated Learning strategies;

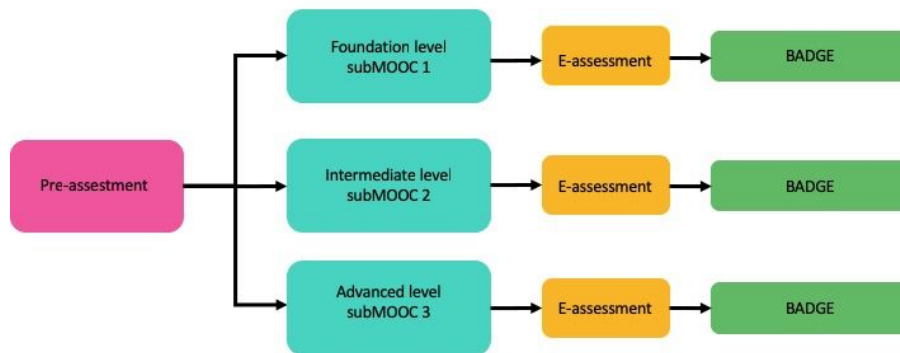


Figure 2 Diagram showing the route in the MOOC

- Figure 3 represents an initial diagram or information about the number of OERs in each subMOOC and shows if they are video or text-based, in order to help students in managing their time and planning their learning strategies. Since some participants found the texts of advanced level too long and complex, we think that providing them specific information regarding time required to complete an activity may help them managing their time and efforts.
- Creating tutorials regarding the e-portfolio and peer-assessment activity, how to get Badges and a general description of the MOOC structure.

Pre-pilot phase results, together with the internal assessment ones, regarding the MOOCs carried out by partners (presented in the last document of the Output 6.2) prepared us for the first pilot cycle.

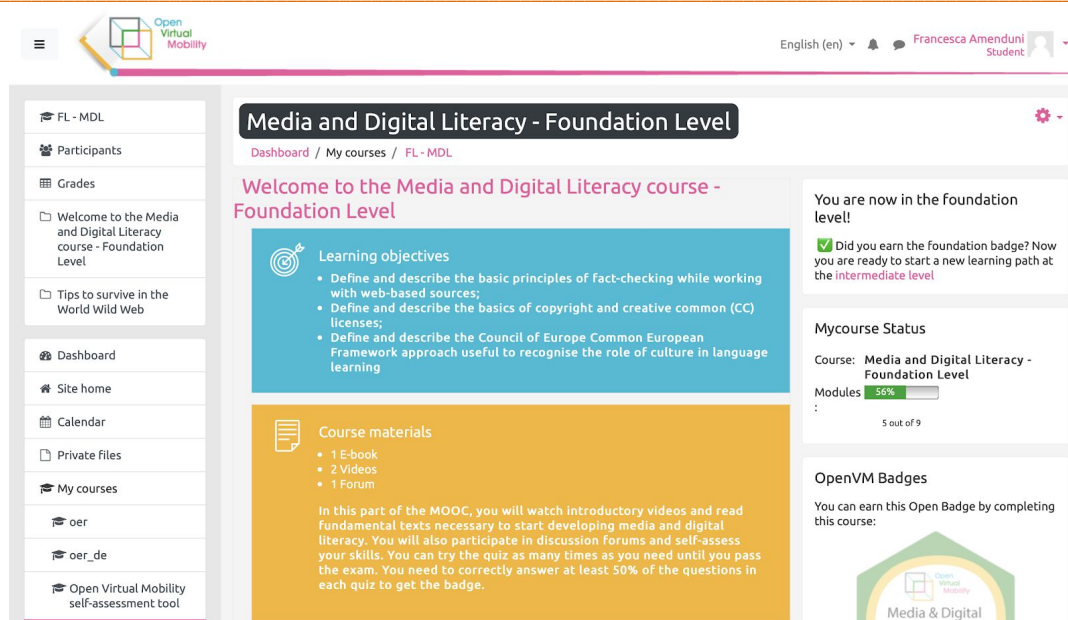


Figure 3 The home page of a subMOOC, which indicates number and types of OERs. On the right side “My course status”, which indicates where learner is located at any moment.

4.2 Preliminary results of the first pilot cycle

The first pilot cycle is still in progress; thus, results are preliminary.

At the moment we collected answers from 250 participants (F= 173; M = 75; Other =2; Average age = 24). Most of the participants are University students and only 4 teachers.

The miniMOOC “Active Self-regulated Learning” was attended by the 47,6% of the respondents. The second miniMOOC most attended was the “Media and Digital Literacy” with 23,6% of questions answered, followed by “Intercultural skills”, “Open-mindedness”, “Open Education and Virtual Mobility”, “Networked Learning”, “Autonomy-drive learning” and “Collaborative learning”.

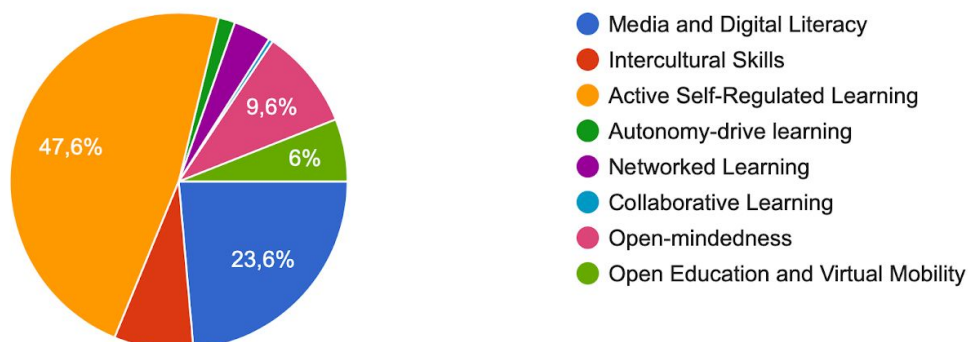


Figure 4 Percentage of answers received for each of the 8 miniMOOCs

Participants were required to answer to general questions regarding 1. MOOC 2. badges and gamification 3. technical aspects. In these sections, participants were re-required to express their level of agreement through statements regarding the MOOC on a Likert scale. (1: strongly disagree; 2: disagree; 3: neutral; 4: agree; 5: strongly agree).

As regards technical aspects of MOOC (Figure 5), we can see that participants express general positive evaluation. In particular, the length of the video was considered good (Average = 3,86), its sound clear (Average = 3,81) and technological environment was considered friendly and usable (Average = 3,82). A less positive approval regards the statement *the MOOC layout positively affects my learning experience* and *the system is easy to use*, with average lower than 3,65.

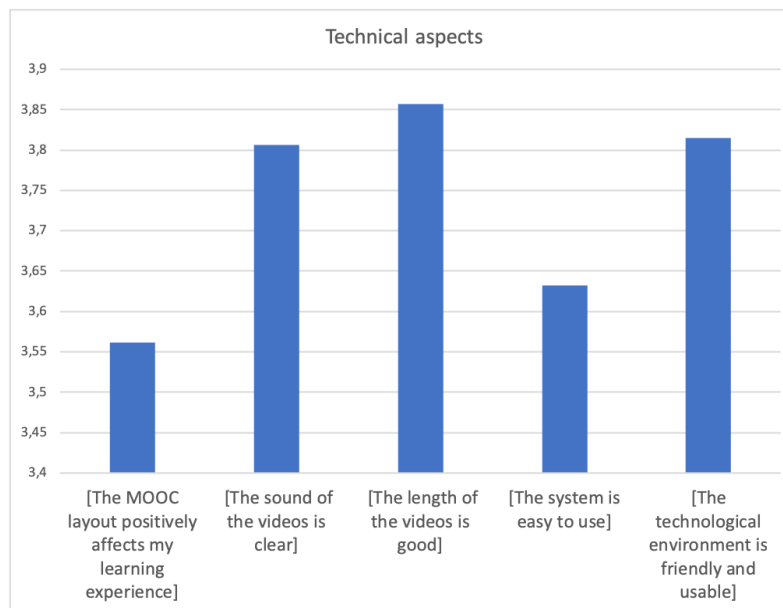


Figure 5 Level of agreements with statements regarding “Technical aspects”

Moreover, concerning the MOOC (Figure 6) we can see that participants express general positive evaluation.

On one hand, participants tend to disagree with negative statements regarding the MOOCs, with average lower than 3. On the other hand, participants agree with positive statements; participants seem to appreciate the use of different kinds of OERs (Average = 4).

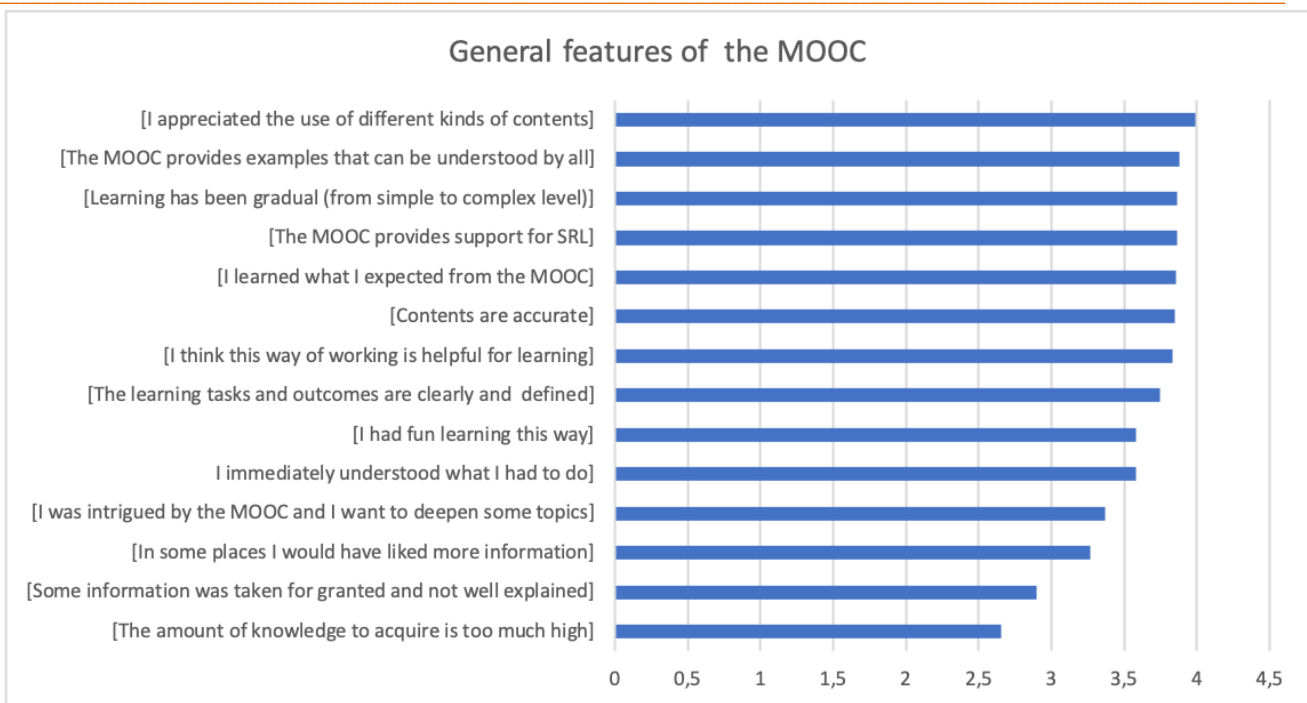


Figure 6 Level of agreements with statements regarding the “MOOC”

Finally, also for badges and gamification (Figure 7) participants express general positive evaluation, above all toward badge design (Average = 3,65).

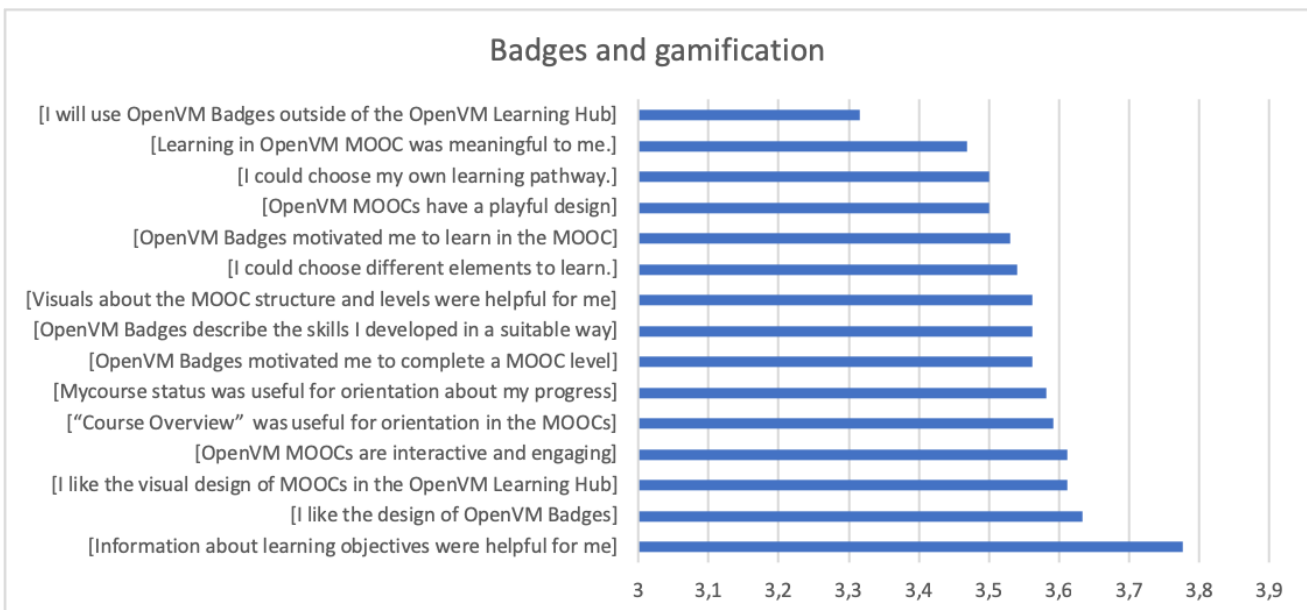


Figure 7 Level of agreements with statements regarding the “Badges and gamification”

6. Conclusion

The goal of this paper has been twofold: firstly, we described our Quality framework approach for OERs and MOOCs assessment, during the pilot phase of Erasmus + project Open Virtual Mobility; secondly, we presented our pilot-phase design organized in 3 iterations: 1. Pre-pilot phase 2. First pilot-phase cycle 3. Second-pilot phase cycle. The combination of DBR and ADDIE approach proposed in the output 7 of the project, was useful to manage MOOCs quality within the project during the pilot-phase.

As expressed by participants, preliminary results confirm the good quality of OpenVM MOOC. We would need to triangulate these results with different source of information, such as internal partner feedback (presented in the last document of the Output 6.2) and external experts. In addition, learning analytics data may be adopted further to gather information on students' learning processes.

7. References

- Atenas, J., Havemann, L., & Priego, E. (2014). Opening teaching landscapes: The importance of quality assurance in the delivery of open educational resources. *Open Praxis*, 6(1), 29-43.
- Brown, A. L. (1992). Design experiments: Theoretical and methodological challenges in creating complex interventions in classroom settings. *The Journal of the Learning Sciences*, 2, 141-178.
- Buchem, I., Tur, G. & Urbina, S. (2018). Quality assurance for attainment, assessment and recognition of virtual mobility skills in context of open education. QA Framework in the Open Virtual Mobility project. Paper presented at Edulearn Conference 2-4 July 2018. Retrieved from https://iated.org/concrete3/view_abstract.php?paper_id=65036
- Camilleri, A. F., Ehlers, U. D., & Pawlowski, J. (2014). *State of the art review of quality issues related to open educational resources (OER)*. Luxembourg: Publications Office of the European Union. Retrieved from: https://www.pedocs.de/volltexte/2014/9101/pdf/European_Commission_2014_OER.pdf
- Conole, G. (2013). MOOCs as disruptive technologies: strategies for enhancing the learner experience and quality of MOOCs. *Revista de Educación a Distancia*, 50(2), 1-18
- Collins, A. (1992). Toward a design science of education. In E. Scanlon & T. O'Shea (Eds.), *New directions in educational technology* (pp. 15-22). Berlin: Springer.
- Daniel, J. (2012). Making sense of MOOCs: Musings in a maze of myth, paradox and possibility. *Journal of interactive Media in education*, 2012(3).

Easterday, M. W., Rees Lewis, D. G., & Gerber, E. M. (2018). The logic of design research. *Learning: Research and Practice*, 4(2), 131-160.

Firssova, O., & Rajagopal, K. (2018). *Open VM Competence Framework*. Retrieved from <https://www.openvirtualmobility.eu/topics/outputs>

Gaebel, M., Kupriyanova, V., Morais, R., & Colucci, E. (2014). *E-Learning in European Higher Education Institutions*. Brussels, Belgium. Retrieved from http://www.eua.be/Libraries/publication/e-learning_survey.pdf?sfvrsn=2

Liyanagunawardena, T. R., Adams, A. A., & Williams, S. A. (2013). MOOCs: A systematic study of the published literature 2008-2012. *The International Review of Research in Open and Distributed Learning*, 14(3), 202-227.

McKenney, S., & Visscher-Voerman, I. (2013). Formal education of curriculum and instructional designers. *Journal of the international society for design and development in education*. 2(6), 1-20.

OECD (2007). *Giving knowledge for free: The emergence of open educational resources*. Retrieved from:

<http://www.oecd.org/education/ceri/givingknowledgeforfreetheemergenceofopeneducationalresources.htm>

OECD. (2010). *Learning Our Lesson: Review of Quality Teaching in Higher Education*. Retrieved from: <http://www.oecd.org/education/imhe/learningourlessonreviewofqualityteachinginhighereducation.htm>

Parker, N. K. (2008). The quality dilemma in online education revisited. *The theory and practice of online learning*, 305-340.

Pawlowski, J. M. (2007). The quality adaptation model: adaptation and adoption of the quality standard ISO/IEC 19796-1 for learning, education, and training. *Journal of Educational Technology & Society*, 10(2), 3-16.

Reeves, T. (2006). Design research from a technology perspective. In *Educational design research* (pp. 64-78). Routledge.

8. Appendix

The questionnaire is here available:

https://drive.google.com/open?id=1L_6pRNtdnR5_nHM189ujWIVJibin3EQ5