

Open Virtual Mobility

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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 goal of this paper is to describe the results of our pilot-phase project organized in 3 iterations: 1. Pre-pilot phase 2. First pilot-phase cycle 3. Second-pilot phase cycle. Results of the first and second iterations were presented in the document “O6.A3 Preparation and implementation of the pilot phase” available at this link <https://www.openvirtualmobility.eu/outputs/2876-preparation-and-implementation-of-the-pilot-phase/>. Thus, this document focus on the final assessment.

What are the objectives of this paper?

This paper is aimed at presenting the final results of the quality assessment of the OpenVM MOOC, which involved more than 1000 participants across Europe. The results could be used to consider the OpenVM MOOCs as reliable source to promote the skills necessary to be involved in a Virtual Mobility program.

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.

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1. Aims and Purposes

This paper is aimed at presenting the final results of the quality assessment of the OpenVM MOOC, which involved more than 1000 participants across Europe. The results could be used to consider the OpenVM MOOCs as reliable source to promote the skills necessary to be involved in a Virtual Mobility program.

2. Background and rationale (State of the Art)

Many institutional mission statements and national higher education strategies aim to prepare students to live in a globalized world in which they are being challenged to become global citizens (Teichler, 2004). The strategies to achieve the internationalization goal in higher education have been changed their nature in recent years. Among these, virtual mobility experience and projects have been developed to complement or substitute for physical mobility (de Wit & Hunter, 2016). Virtual mobility initiatives were indicated as one of the cost-effective ways to increase the access to educational mobility by Maastricht message in 2009 (ICDE Executive Committee, EADTU Executive Committee, 2009). According to the European Commission, youth mobility and academic mobility can foster a genuine European area of knowledge and contribute to the competitiveness of the European economy. The term “virtual” has been defined, for the computer context, as “not physically present as such but made by software to appear to be so from the point of view of a program or user” and as “established or conducted using computer technology” (Virtual, 2013). The concept of Virtual Mobility has been applied not only to the context of Higher Education, but it was originally used in context of *smart cities*, especially to emphasize the role of Virtual Mobility to promote social inclusion and overcome the limit of physical mobility (Kenyon, Lyons, & Rafferty, 2002; Kenyon, 2006).

Teresevičienė and colleagues (2011), define virtual mobility “as an activity or a form of learning, research and communication and collaboration, based on the following characteristics:

1. cooperation of at least 2 higher education institutions;
2. virtual components through an ICT supported learning environment;

3. collaboration of people from different backgrounds and cultures working and studying together, creating a virtual community;
4. having, as its main purpose, the exchange of knowledge and improvement of intercultural competences;

Despite the growing acknowledged of Virtual Mobility, only a few researches have investigated the impact of Virtual Mobility initiatives on participants, and most of them includes small scale studies (Hilliard, 2004; Frydenberg, & Andone, 2010; Costa, & Balula, 2014; Poce, Amenduni, Re & De Medio, 2020). A large-scale study was conducted by Poulová, Černá, and Svobodová (2009) with a group of more than 2000 participants in a time-frame project of four years to assess the efficiency of a Virtual Mobility program that involved 8 European Universities. They found out that less than 50% of students who started the program passed their subject and gained the final credit. From the analysis of a survey, they identified different reasons of the students' drop-out, included a lack of self-regulated students' skills, especially in terms of time management and study-goal settings. Although more research is necessary to understand what are the most important variables of a successful Virtual Mobility experience, the results of the previous experience suggest the critical role of participants transversal skills in Virtual Mobility Experience. Rajagopal and Firssova (2018) recently identified 8 transversal knowledge and skills necessary to be involved in a Virtual Mobility experience, by applying a group concept mapping methodology and involving 49 experts in the domains of virtual mobility and/or open education with experience in higher education as university professors or education management and support: 1. Intercultural Skills; 2. Collaborative learning; 3. Autonomy-driven learning; 4. Networked Learning; 5. Media and digital literacy; 6. Active self-regulated learning; 7. Open mindedness; 8. Knowledge of Virtual Mobility and Open Education. A Massive Open Online Course (MOOC) aimed at developing the eight transversal skills identified by Rajagopal and Firssova (2018) has been developed in the context of the Erasmus+ project *OpenVM: Opening Education for Developing, Assessing and Recognising Virtual Mobility Skills in Higher Education*. The project is based on the idea that VM could be enhanced by adopting the principles of open education in the Open Virtual Mobility MOOC, a massive open online course aimed at developing Virtual Mobility Skills in higher education students (Buchem et al., 2018; Buchem, Tur, & Urbina, 2018).

The need to adopt a non-formal approach to virtual mobility based on the principles of Open Education has been recognized by many authors (Tovar & Lesko, 2014; Wilson et al., 2011). Open education is understood as a mode of undertaking education using digital technologies and providing alternative, less restrictive access routes to formal and non-formal education. This broad perspective enables a comprehensive view, thus encompassing, for instance, Open Educational Resources (OERs), MOOCs, and recognition of open learning.

OERs can be defined as *digitised materials* offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research (OECD, 2007). Although often associated with OERs, MOOCs differ from them. According to the Open Education Consortium, the word “Open” in MOOC does not necessarily mean open licence– because it mainly refers on open enrolment. MOOCs bring together people interested in learning and an expert or experts who seek to facilitate that learning. Whilst 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 (Liyanagunawardena, Adams, & Williams, 2013), MOOCs are self-consistent online courses. Having said that, in an open education perspective MOOCs can be based on OERs, such as teaching, learning and research materials released under an open licence. In the present work, we will refer to MOOCs as self-consistent online courses aimed at large scale participation (Daniel, 2012) and to OERs as the study material included in the MOOC learning path that learners can read, listen, download and re-use. MOOCs are now being considered and applied by many institutions around the world as a valid internationalization instrument (Knight, 2014). However, Amirault and Visser (2010) show that virtual program offerings do not automatically cross borders, nor result in the same effects everywhere. The context of the partnership of the European Project allows to involve students from 6 European countries and institutions: Roma Tre University (Italy); Beuth University (Germany); Universitatea Politehnica Timisoara (Romania); Universitat de les Illes Balears (UIB), AUNEGE, Open Universiteit – Welten Instituut (Netherlands).

The aim of the Open VM MOOC is to help educators and students developing a defined set of VM skills and applying them to Virtual Mobility programs, actions and activities in various academic disciplines (Yuan & Powell, 2013). The MOOC Canvas (Alario-Hoyos, Pérez-Sanagustín, Delgado-Kloos, 2013) was adopted to support the design, and to promote discussions between the

different project' partners involved in the creation of a MOOC. In line with the features proposed by Bates (2015), the OpenVM MOOC was conceived in conformity with the xMOOC definition.

Eight areas have been identified (Rajagopal & Firssova, 2018) as main contents for the OpenVM MOOC: 1. Intercultural Skills; 2. Collaborative learning; 3. Autonomy-driven learning; 4. Networked Learning; 5. Media and digital literacy; 6. Active self-regulated learning; 7. Open mindedness; 8. Virtual Mobility Knowledge. For each area, a miniMOOC was created. For a more detailed description of the MOOCs, please look at the document "O6 A2 MOOC Delivery & Integration into VM Learning HUB" available at this link: <https://www.openvirtualmobility.eu/uncategorized/2870-mooc-delivery-integration-into-vm-learning-hub/>

3. Methodology

Our pilot-phase was realized in order to understand how OpenVM MOOCs participants assessed the quality of the MOOC main components.

We tried to answer the following research questions:

1. To which extent students enjoyed the OpenVM MOOC design and its main components?
2. Are there any differences in the assessment of the 8 miniMOOCs and subMOOCs?

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).

In the pre-pilot only one of the 8 miniMOOC was tested named "Media and Digital Literacy" MOOC. The results of the pre-pilot phase were used to produce guidelines (Poce et al., 2020) adopted to design the 7 remaining 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.

All the 8 miniMOOCs were tested both for the first and second pilot phase cycles from the beginning of October 2019 to June 2020. To ensure a broader participation, partners were asked to test one or more miniMOOC within their university course.

3.1 Data collection and data analysis

At the end of the subMOOC, MOOC participants (N = 1392) were invited to fill in an online questionnaire, designed by Roma Tre University and implemented by other involved partners. OpenVM Evaluation Questionnaire is organised in eight sections. In all eight sections participants were required to express their level of agreement with a set of statements related to specific MOOC design elements on a Likert scale from 1 (strongly disagree) to 5 (totally agree). Furthermore, there also is one more section to assess the quality of the design in relation to self-regulated learning (SRL) which is addressed in the documents by the Output 07 team. The OpenVM Evaluation Questionnaire¹ was created using a Google Module and encompasses these eight sections:

1. Personal details: age, gender, affiliation and role. In this section participants are required to say which of the eight mini-MOOCs they are assessing;
2. Questions regarding the overall MOOC design: learning experience, quality of content instruction and support for learning;
3. Questions regarding digital credentials and meaningful gamification: quality of design, motivation, engagement and possibilities of choice;
4. Questions regarding technical aspects: use and usability;
5. Questions regarding the foundation level of a mini-MOOC: duration, language, content, use of multimedia;
6. Questions regarding the intermediate level of a mini-MOOC: extending questions from the foundation level by questions related to the matching tool and group formation activity, which are specific design elements used at this level;
7. Questions regarding the advanced level of a mini-MOOC: extending questions from the foundation and intermediate levels by questions related to e-portfolio and peer-assessment activities, which are specific design elements at this level;
8. Questions related to the investigation about the extent to which MOOCs supported self-regulated learning. In this section participants are required to answer also to open-ended questions.

¹ https://docs.google.com/forms/d/e/1FAIpQLSeZO6SYxgIXcaXghGnjwoV362_OjICAbWR5Sz8Yxp8gEw635g/viewform

Descriptive statistics (average, standard deviation, frequencies) were calculated in order to answer to the abovementioned research questions

4. Results

1391 (F = 960; M = 418; Not specified = 14) participants took part in the pilot-phase. Most of the participants were university students and only 44 teachers participated in the survey.

Table 1 Survey participants personal information

Gender	Number	%
• Female	960	69%
• Male	418	30%
• Prefer Not to say	14	1%
Role		
• University student	1337	96%
• Teacher / Trainer / Educator	44	3,2%
• Other	11	0,8%
Age		
• Less than 20	178	12,8%
• Between 21 and 23	620	44,6%
• Between 24 and 26	183	13,2%
• Between 27 and 30	113	8,1%
• Between 31 and 35	105	7,5%
• More than 36	192	13,8%
Total	1391	100%

As shown in figure 1, 20,6% of answers concern the MOOC “Active Self-regulated Learning”, followed by Media and Digital Literacy (16,9%), “Collaborative Learning (14,9%), “Open-mindedness” (13,8%), “Intercultural Skills” (12,5%), “Networked Learning” (11,4%), “Autonomy-drive learning” (6,3%), and “Open Education and Virtual Mobility” (3,5%).

In addition, 91% of participants took part in the foundation level, 52 % in the intermediate level and 29% in the advanced level in one of the 8 miniMOOCs.

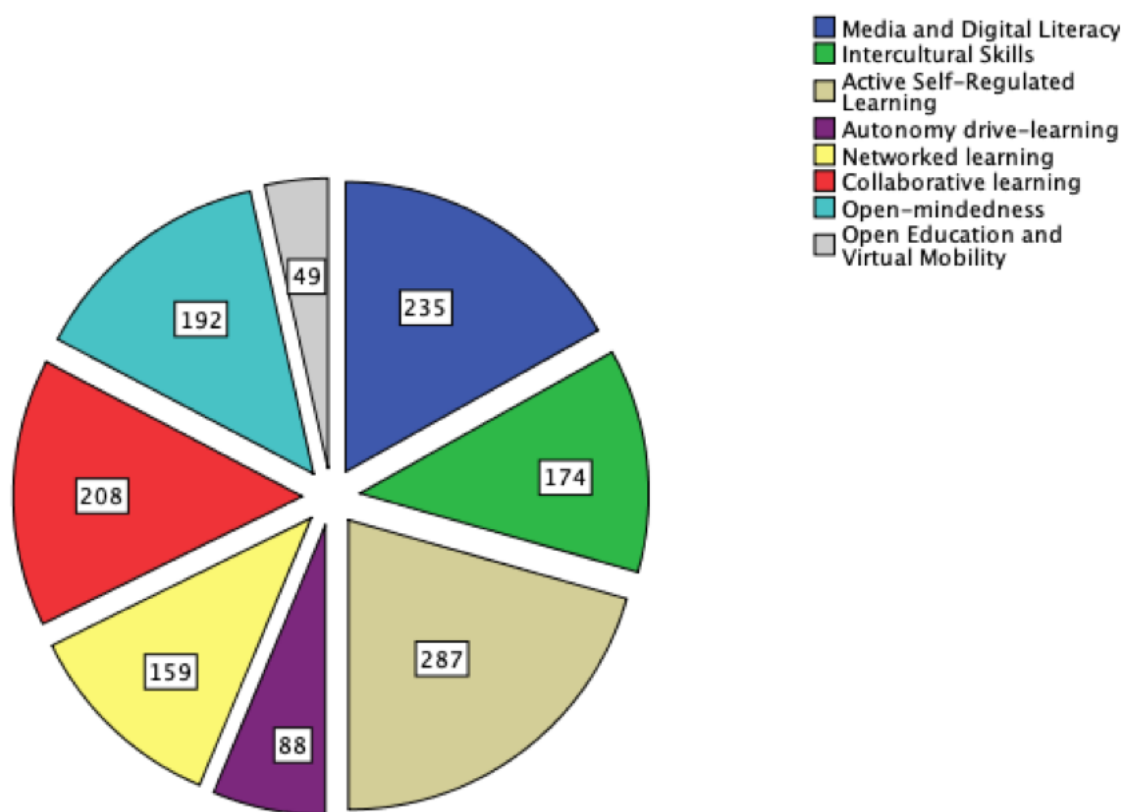


Figure 1 Number of participants who attended each miniMOOC

In Table 2, the association between participants’ affiliation and MOOC assessment is presented. The majority of participants from Roma Tre University (N = 178) followed the MOOC “Active Self-Regulated Learning”, 74 participants from Beuth followed the MOOC “Media and Digital Literacy”, 33 participants from UIB “Active Self-Regulated Learning” and 11 participants from AUNEGE followed the MOOC “Media and Digital Literacy”. Participants from external institutions

were 249 in total and most of them (N=95) attended and assessed the MOOC “Collaborative Learning”, followed by “Networked Learning”. Most of the students from Timisoara University attended the MOOC “Open-mindedness” (N= 130) followed by the MOOCs “Intercultural Skills” (N = 114).

Table 2 Number of participants from each partner institution that attended the 8 miniMOOCs.

		Affiliation							Total
		R3	BEUTH	Timisoara	UIB	AUNEGE	OUNL	External	
M O O C	Media and Digital Literacy	12	74	102	13	11	1	22	235
	Intercultural Skills	18	2	114	8	3	4	25	174
	Active Self-Regulated Learning	178	26	47	33	1	0	2	287
	Autonomy driven-learning	13	0	60	11	0	1	3	88
	Networked learning	13	7	73	8	0	0	58	159
	Collaborative learning	17	1	83	12	0	0	95	208
	Open-mindedness	16	2	130	9	1	0	34	192
	Open Education and Virtual Mobility	15	9	9	6	0	0	10	49
Totale		282	121	618	100	16	6	249	1392

In the following figure, a comparison of the average scores obtained for the general assessment of the 8 miniMOOCs is presented. All the MOOCs received satisfactory average scores, with average always higher than 3,5 (data were collected on a Likert Scale with a median = 3).

From the picture, it is possible to see that three MOOCs received scores higher than the OpenVM MOOC average:

- The Autonomy driven learning MOOC (Average = 3,922);
- The Intercultural Skills MOOC (Average = 3,918);
- The Open-mindedness MOOC (Average = 3,821);

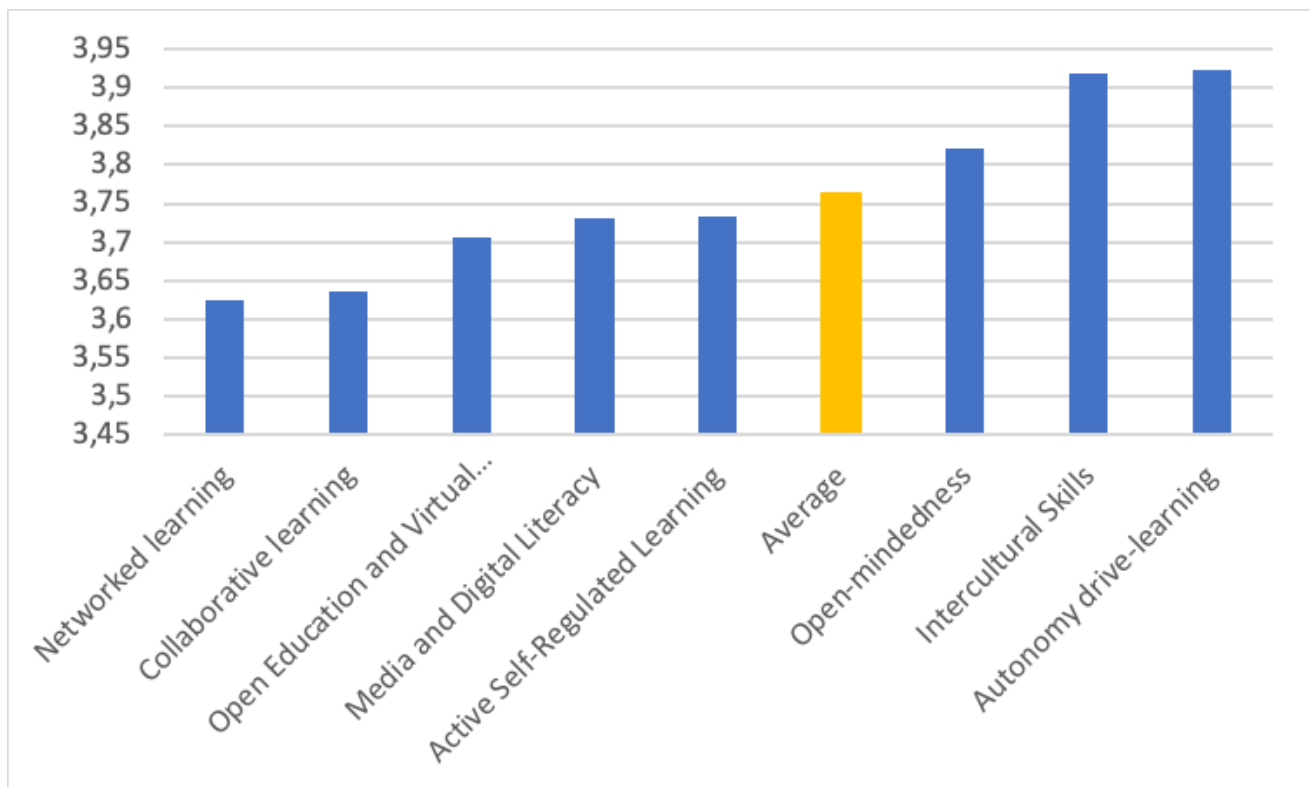


Figure 2 a comparison of the average scores obtained for the general assessment of the 8 subMOOCs

In the figure 3 the average scores obtained for the 1) technical features 2) gamification features 3) OpenVM badges and the 4) General evaluation are compared in each of the 8 miniMOOC.

For all the MOOCs the technical features and the general evaluation were very positive assessed, with average scores higher than 3,8.

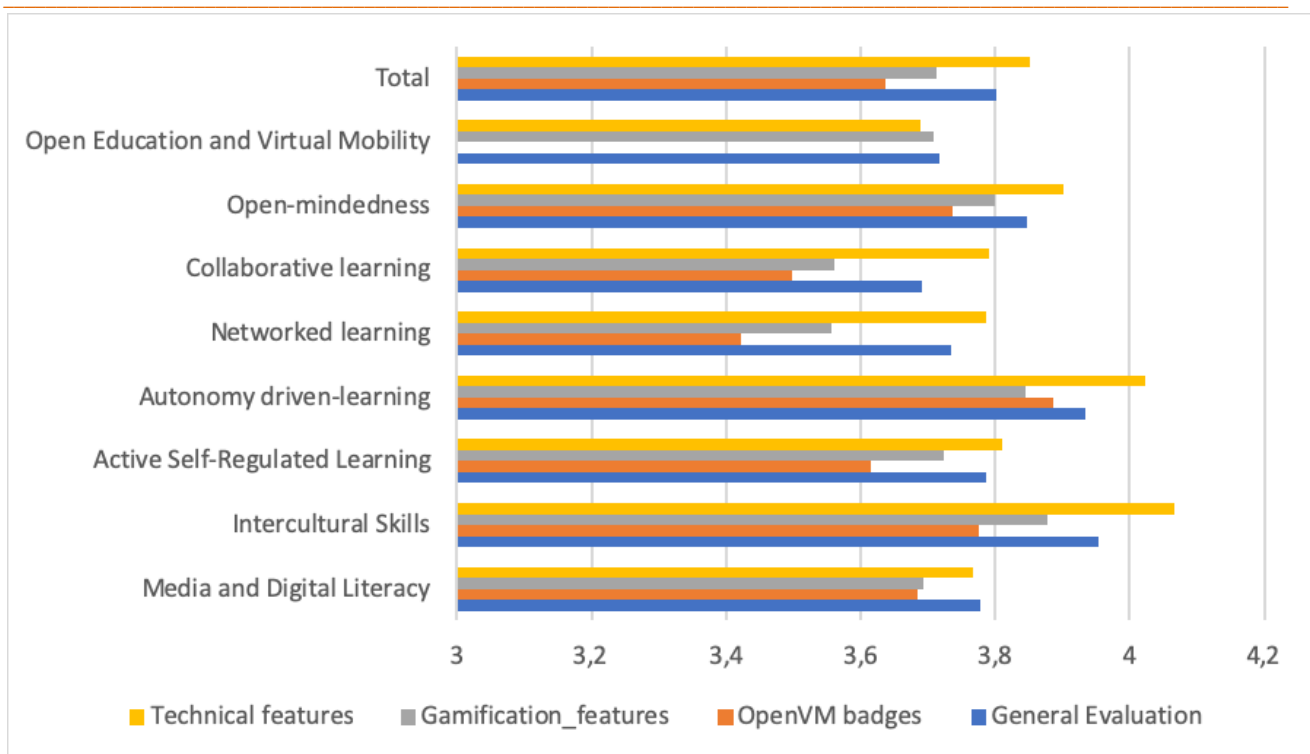


Figure 3 a comparison of the average scores obtained for the technical features 2) gamification features 3) OpenVM badges and the 4) General evaluation of the 8 subMOOCs

The Figure 4 shows a comparison of the average answers given for foundation, intermediate and advanced level. For each statement, in all the levels, the average scores are higher than 3,6. We can see that foundation level receive higher scores for all the statements taken into account, whilst average scores of the intermediate and advanced level are almost comparable.

In all the levels, the most appreciated feature is “multimedia contents (e.g. pictures and videos) with an average score of 4,13 in the foundation level, 3,87 in the intermediate level and 3,84 in the advanced level.

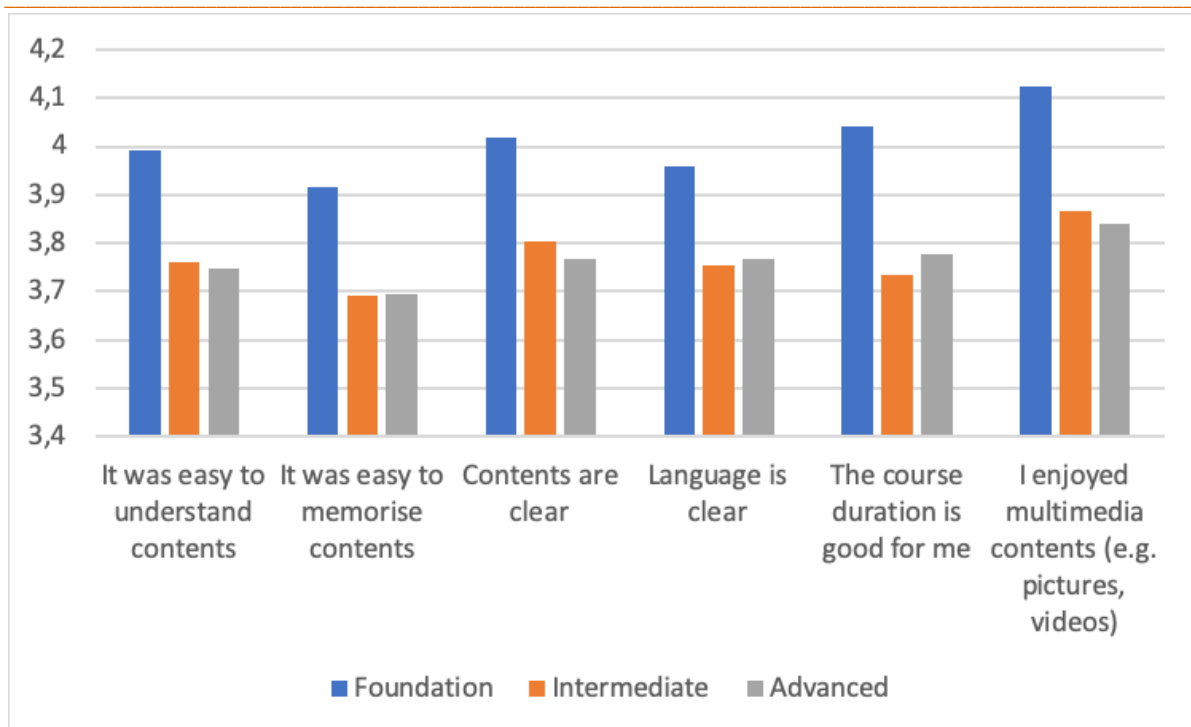


Figure 4 a comparison of the average scores obtained for foundation, intermediate and advanced levels of the OpenVM MOOCs.

From the qualitative analysis of the open-ended answers provided to the last section of the questionnaire, 6 different themes has emerged, as summarised in the table 3.

Table 3 Thematic analysis of the open-ended answers

Themes	Frequency	Examples
Helpful to improve strategy of study	14	It helped me to use new Technologies to learn and to exercise my brain
SRL skills development	10	I have developed self-observation strategies
General Enjoyment	9	I enjoyed doing the Course
Generally Useful/Helpful	9	It helped me a little bit
Refers to technologies	5	It helped me to use new Technologies to learn and to exercise my brain
Negative comments	3	Need more explanation

5. Conclusion

In the last few years, the concept of *Virtual Mobility* has received growing attention from educational policy makers and institutions, because it has the potential to make more accessible and effective students and teachers' mobility in Higher Education. Having said that, only a few research has investigated the impact of Virtual Mobility initiatives on participants (Hilliard, 2004; Frydenberg, & Andone, 2010; Costa, & Balula, 2014; Poce et al., 2020).

In the context of the Erasmus + Open Virtual Mobility, a Massive Open Online Course (MOOC) aimed at developing the eight transversal skills identified by Firssova and Rajagopal (2018) has been developed. MOOCs are now being considered and applied by many institutions around the world as a valid internationalization instrument (Knight, 2014) and in the OpenVM Project a MOOC was designed and developed based on the idea that VM could be enhanced by adopting the principles of open education (Buchem et al., 2018; Buchem, Tur, & Urbina, 2018). The present study describes the assessment results collected by 1391 participants who participated in a pilot phase from October 2019 to June 2020. Participants expressed a positive evaluation of different MOOCs features: 1. Badges; 2. Technical features; 3. Gamification. Three out of eight MOOCs obtained the highest evaluation: 1. Intercultural skills; 2. Autonomy-driven learning; 3. Open-mindedness.

Future research would be necessary to understand the reasons why these four MOOCs are preferred compared to the other. One possible explanation is that the other MOOCs, specifically the Media and Digital Literacy MOOC, the Networked MOOC and the Open Education and Virtual Mobility are based not only on transversal skills but also on digital and technological skills and they could be considered more difficult. In order to better understand the impact of the MOOC on the student's experience, it would be necessary triangulate different sources of information. In future research, we are going to integrate the survey results with analytics collected by the platform.

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8. Appendix

The questionnaire is here available:

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