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A Massive Open Online Course Designed to Support the Development of Virtual Mobility Transversal Skills: Preliminary Evaluation Results from European Participants

Antonella Poce

Università degli Studi Roma Tre - Department of Education (Italy)

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antonella.poce@uniroma3.it

UN MOOC PROGETTATO PER SOSTENERE LO SVILUPPO DELLE ABILITÀ TRASVERSALI DI MOBILITÀ VIRTUALE: RISULTATI PRELIMARI DI VALUTAZIONE DAI PARTECIPANTI EUROPEI

ABSTRACT

In the last years, the concept of «Virtual Mobility» has receiving a 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. Virtual Mobility could be defined as institutional ICT-supported activities that trigger or facilitate international collaborative experiences in the context of teaching and/or learning. Despite the interest, there is still a few empirical researches regarding actual effectiveness of Virtual Mobility implementation and which technological solutions could be adopted. The present paper describes a research project aimed¹ at designing an Open and Accessible Virtual Mobility Massive Open Online Course, by involving students and teachers from six European countries and higher education institutions. 716 participants completed and assessed the Open Virtual Mobility MOOC. Participants expressed a positive

¹ Research Project, «E-learning for higher education: definition of an integrated model for the qualification of learning and online educational relations» (PRID) 2016-17, funded by the Department of Education, University of Rome Roma Tre.

evaluation of different MOOCs features: (1) Badges; (2) Technical features; (3) Gamification. Four out of eight MOOCs obtained the highest evaluation: (1) Collaborative learning; (2) Autonomy-drive learning; (3) Open-mindedness; (4) Intercultural Skills. Future research trajectories would be addressed.

Keywords: Evaluation; Higher Education; MOOCs; Open Education; Virtual Mobility.

1. INTRODUCTION

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 *et al.*, 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 by the authors of the paper in the context of the Erasmus+ project «OpenVM: Opening Education for Developing, Assessing and Recognising Virtual Mobility Skills in Higher Education»². 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 (Wilson *et al.*, 2011; Tovar & Lesko, 2014). Open education is understood

² https://www.openvirtualmobility.eu/es_ES/. The project is coordinated by Beuth University which contributed to the assessment pilot phase, presented here, drafting the questionnaire administered with the first group of MOOC users. Data collected are described below.

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 Consortium³, the word «Open» in MOOC does not necessarily mean open licence – because it mainly refers to 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).

2. THE OPEN VM MOOC DESIGN AND STRUCTURE

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

³ Retrieved from: <https://www.oecconsortium.org/info-center/topic/moocs-and-oers-which-one-to-go-with/>.

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.

Three levels are then proposed for each miniMOOCs:

- *foundation level*: focused on knowledge acquisition;
- *intermediate level*: focused on knowledge application in a collaborative learning environment;
- *advanced level*: focused on self-reflection and meta-reflection.

Each miniMOOC has a pre-assessment activity: participants are required to fill in a quiz and, according to the score they obtain, they will be directed to the foundation level, intermediate level or advanced level. Each combination between the level and the miniMOOC is defined a subMOOC. Thus, the OpenVM MOOC is composed by 24 subMOOC, 8 miniMOOCs for 3 levels (*Fig. 1*). Each subMOOC has different forms of assessment and tasks. More specifically, in the foundation and in the intermediate levels there are mainly quizzes (e.g. multiple choices, true or false and drag and drop exercises), whilst in the advanced level there are also e-portfolio and peer-assessment activities. In the intermediate level, there are also collaborative learning activities, supported by the use of the Matching tool, an algorithmic solution for building learning groups (Konert, Burlak, & Steinmetz, 2014). At the end of each subMOOC, participants obtain a badge that certifies the skills acquired in that specific subMOOC.

All the miniMOOCs contain approximately 9 study materials (3 for the foundation level, 3 for the intermediate level and 3 for the advanced level). In the OpenVM MOOC, the study material that participants could read, listen to, download and re-use for their personal purposes are Open Educational Resources. OERs include slide shows, supplementary audio files, URLs to other resources, online articles and video lectures. The pedagogical approaches that guide the OpenVM MOOC design are collaborative and social learning (Andriessen, Baker, & Suthers, 2013),

reflective practices (Schön, 1991) and self-regulated learning (Zimmerman, 2013).

The OpenVM MOOC is integrated into a Virtual Mobility Learning HUB (Buchem *et al.*, 2018) that provides a Personal Learning Environment. The overall structure of the MOOC is shown in *Figure 1*.

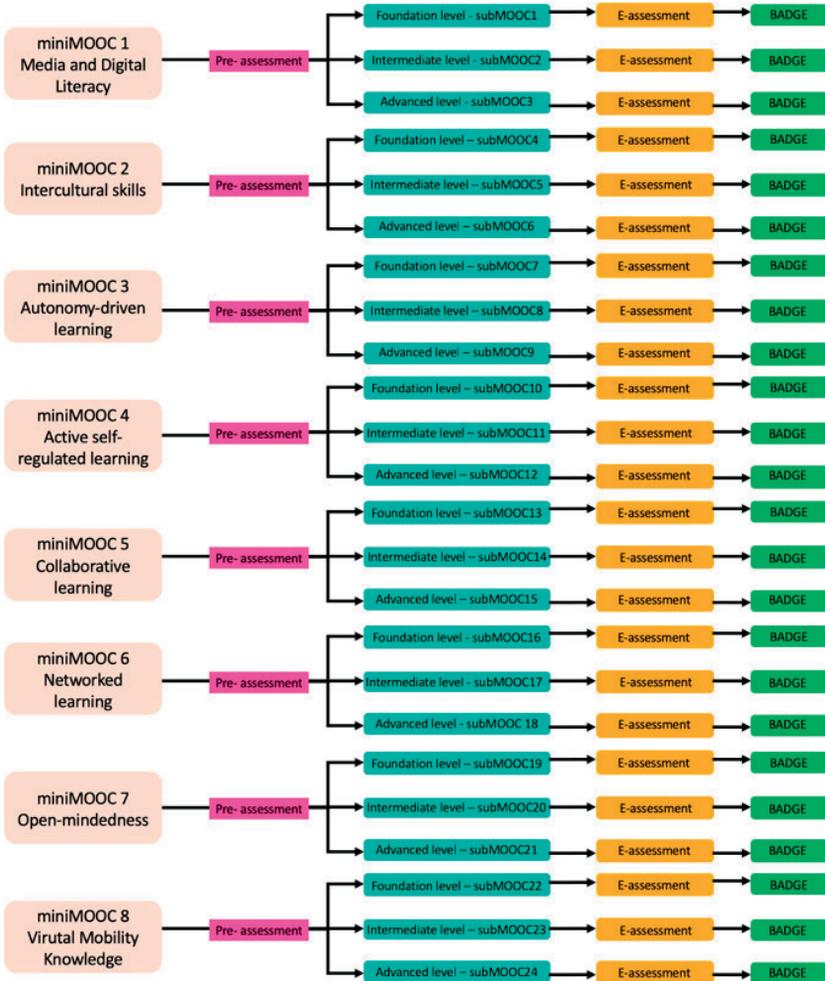


Figure 1. – The OpenVM MOOC structure.

3. METHODOLOGY

3.1. *The pilot-phase iterations*

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 miniMOOC «Media and Digital Literacy» was the first to be launched and tested, as it was considered functional to navigate the OpenVM 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 for the first pilot phase cycle from the beginning of October 2019 to December 2019. To ensure a broader participation, partners were asked to test one or more miniMOOC within their university course. The *Figure 2* shows the miniMOOCs that were tested in the partners university courses: MDL (Media and Digital Literacy); SRL (Self-regulated learning); IL (Intercultural Learning). The partners involved are: Beuth University; AUNEGE; UIB; Roma Tre.

	7/10 - 20/10	21/10 - 10/11	11/11 - 01/12	Deadlines
MOOC and University	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 - UJB	Foundation			No Deadline
SRL - Roma3	Foundation			No Deadline
IL - BEUTH		Foundation	Intermediate starts on 4 nov. Groups work from 7 to 11 nov.	Group Formation - 15 nov. e-portfolio - 26 nov. peer assessment

Figure 2. – miniMOOCs delivery during the first pilot-phase cycle.

3.2. *Data collection and data analysis*

At the end of the subMOOC, MOOC participants (N = 716) 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). OpenVM Evaluation Questionnaire 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.

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

3.3. *Results*

716 (F = 498; M = 215; Not specified = 3) participants took part in the pilot-phase. Most of the participants were university students and only 14 teachers participated in the survey.

Table 1. – Survey participants personal information.

GENDER	NUMBER	%
• Female	498	69,6
• Male	215	30
• Prefer not to say	3	4
ROLE		
• University student	699	97,6
• Teacher	14	2
• Other	3	0,4
AGE		
• Less than 20	153	21,4
• Between 21 and 23	348	48,6
• Between 24 and 26	100	14,0
• Between 27 and 30	44	6,1
• Between 31 and 35	34	4,7
• More than 36	37	5,2
Total	716	100

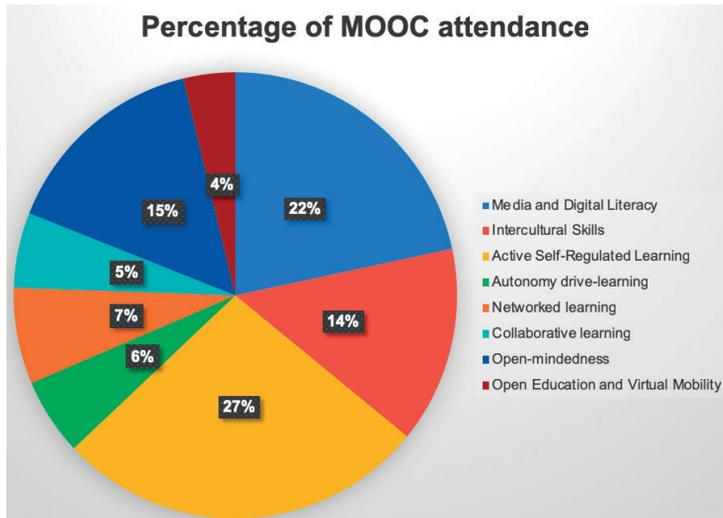


Figure 3. – Percentage of participants who attended each miniMOOC.

As shown in *Figure 3*, 27% of participants participated and assessed the MOOC «Active Self-regulated Learning», followed by Media and Digital Literacy (22%), «Open-mindedness» (15%), «Intercultural Skills» (14%), «Networked Learning» (7%), «Autonomy-drive learning» (6%), «Collaborative learning» (5%) and «Open Education and Virtual Mobility».

In addition, 92% of participants took part in the foundation level, 51,6% in the intermediate level and 30,6% in the advanced level in one of the 8 miniMOOCs.

In the *Table 2*, the association between participants' affiliation and MOOC assessed is presented. It is possible to see that generally the distribution of the participants is coherent with the planning presented in the *Figure 2*.

More specifically, the majority of participants from Roma Tre University (N = 132) followed the MOOC «Active Self-Regulated Learning», 74 participants from Beuth followed the MOOC «Media and Digital Literacy», 21 participants from UIB «Active Self-Regulated Learning» and 11 participants from AUNEGE followed the «Media and Digital Literacy». However, it is possible to see that 58 students from the same institutions followed MOOCs different from the ones introduced formally by the teachers. Participants from external institutions were 25 and most of them (N = 13) attended and assessed the MOOC «Intercultural Skills», followed by «Media and Digital Literacy». Most of the students from Timisoara University attended the MOOC «Open-mindedness» (N = 100) followed by the MOOCs «Intercultural Skills» (N = 76) and «Media and Digital Literacy» (N = 61).

In *Table 3*, the results of the OpenVM MOOC evaluation and its main components are presented.

The general evaluation of the MOOCs quality was quite positive. The average score for each MOOC is always higher than 3,5 out of 5 points (we used a Likert Scale from 1 to 5, where the median is 3).

The total average was 3,77. Three MOOCs out of eight obtained scores higher than the average: (1) Open-mindedness; (2) Autonomy-drive learning; (3) Intercultural skills. Also, the general evaluation of the badges was quite positive. The average score for badge is always higher than 3,5 out of 5 points.

Participants expressed a more positive attitude toward badges in three MOOCs: (1) Open-mindedness; (2) Collaborative learning; (3) Autonomy drive-learning. The general evaluation of the gamification features was still satisfactory because the average score was more than 3. However, it was lower than 3,5. Participants expressed a more positive attitude toward gamification in three MOOCs: (1) Open-mindedness; (2) Autonomy drive-learning; (3) Intercultural Skills.

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

	AFFILIATION								Total
	Roma Tre University	Beuth University of Applied Sciences	Universitatea Politehnica Timisoara	Universitat de les Illes Balears (UIB)	AUNEGE	Open Universiteit – Welten Instituut	External institutions		
Media and Digital Literacy	0	74	61	1	11	1	7	155	
Intercultural Skills	6	1	76	1	3	2	13	102	
Active Self-Regulated Learning	132	24	17	21	0	0	0	194	
Autonomy drive-learning	4	0	34	1	0	1	0	40	
Networked Learning	1	6	40	0	0	0	3	50	
Collaborative Learning	2	1	36	0	0	0	0	39	
Open-mindedness	5	2	100	1	1	0	0	109	
Open Education and Virtual Mobility	8	9	4	4	0	0	2	27	
Total	158	117	368	29	15	4	25	716	

Table 3. – The results of the OpenVM MOOC evaluation and its main components.

GENERAL EVALUATION OF THE MOOCs			
	Average	N	SD
Networked Learning	3,5945	50	1,02593
Media and Digital Literacy	3,6938	155	0,65947
Collaborative learning	3,7203	39	0,72619
Active Self-Regulated Learning	3,7381	194	0,6769
Open-Education and Virtual Mobility	3,7542	27	0,61802
<i>Average</i>	<i>3,7689</i>	<i>716</i>	<i>0,72937</i>
Open-mindedness	3,8182	109	0,769
Autonomy drive-learning	3,8477	40	0,72797
Intercultural Skills	3,9661	102	0,71558
BADGE EVALUATION			
	Average	N	SD
Active Self-Regulated Learning	3,5351	194	0,78093
Networked Learning	3,56	50	1,06904
Media and Digital Literacy	3,591	155	0,84741
Intercultural Skills	3,6922	102	0,76853
Open-mindedness	3,7193	109	0,84989
Collaborative learning	3,7385	39	0,83874
Autonomy drive-learning	3,93	40	0,72402
GAMIFICATION FEATURES EVALUATION			
	Average	N	SD
Networked Learning	3,18	50	0,94868
Collaborative learning	3,2487	39	0,69995
Media and Digital Literacy	3,2613	155	0,66189
Active Self-Regulated Learning	3,2964	194	0,62216
Open Education and Virtual Mobility	3,3148	27	0,6125
<i>Average</i>	<i>3,3226</i>	<i>716</i>	<i>0,68037</i>
Open-mindedness	3,3917	109	0,69949
Autonomy drive-learning	3,41	40	0,68605
Intercultural Skills	3,4578	102	0,63315
TECHNICAL FEATURES EVALUATION			
	Average	N	SD
Open Education and Virtual Mobility	3,5704	27	0,66957
Networked Learning	3,6449	49	1,09412
Media and Digital Literacy	3,6768	151	0,8339
Active Self-Regulated Learning	3,7403	191	0,71642
<i>Average</i>	<i>3,7946</i>	<i>704</i>	<i>0,8078</i>
Collaborative learning	3,8378	37	0,78717
Autonomy drive-learning	3,88	40	0,77499
Open-mindedness	3,9	108	0,83184
Intercultural Skills	4,0436	101	0,74222

The technical features evaluation of the MOOCs was quite positive. The average score for each MOOC is always higher than 3,5 out of 5 points and the total average was 3,79. Four MOOCs out of eight obtained scores higher than the average: (1) Collaborative learning; (2) Autonomy-drive learning; (3) Open-mindedness; (4) Intercultural Skills.

From a general overview we can conclude that four MOOCs at the moment were the best assessed considering the following four variables: (1) general features (2) badges (3) gamification (4) technical features:

1. Collaborative learning;
2. Autonomy-drive learning;
3. Open-mindedness;
4. Intercultural Skills.

The *Figure 4* shows a comparison of the average answers given for foundation, intermediate and advanced level. For each statement, in all the levels average scores are higher than 3,55. We can see that course duration is considered better in foundation level than intermediate and advanced level. Usually foundation level achieved higher average scores. However, multimedia contents, and language are more appreciated in advanced level.

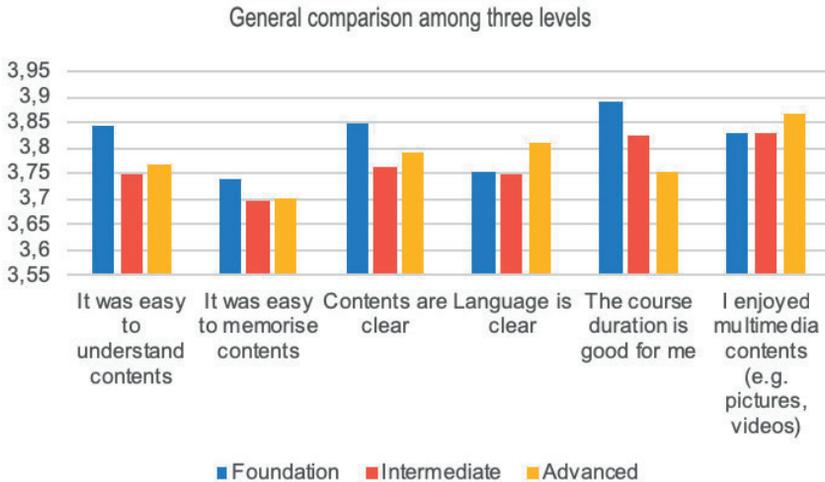


Figure 4. – General comparison among foundation, intermediate and advanced level.

4. DISCUSSION AND FINAL REMARKS

In the last years, the concept of *Virtual Mobility* has receiving a 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 researches has investigated the impact of Virtual Mobility initiatives on participants (Hilliard, 2004; Frydenberg & Andone, 2010; Costa & Balula, 2014; Poce *et al.*, 2020). Although more research is required, the results of the previous experience suggest the critical role of participants transversal skills in Virtual Mobility Experience (Poulová, Černá, & Svobodová, 2009).

In the context of the Erasmus + Open Virtual Mobility, a Massive Open Online Course (MOOC) aimed at developing the eight transversal skills identified by Firsova 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 716 participants who participated in a pilot phase from September to December 2019. Participants expressed a positive evaluation of different MOOCs features: (1) Badges; (2) Technical features; (3) Gamification. Four out of eight MOOCs obtained the highest evaluation: (1) Collaborative learning; (2) Autonomy-drive learning; (3) Open-mindedness; (4) Intercultural Skills. 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 addition, the MOOCs *Collaborative learning*, *Autonomy-drive learning* and *Open-mindedness* were not formally introduced by University teachers partner but they were chosen spontaneously by the participants. This could indicate that they were more motivated and interested in the topic of the MOOCs compared to the participants who were formally invited to follow a specific MOOC chosen a priori by the teacher.

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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RIASSUNTO

Negli ultimi anni, il concetto di mobilità virtuale ha ricevuto una crescente attenzione da parte dei responsabili delle istituzioni educative per la sua potenzialità di rendere più accessibile ed efficace la mobilità degli studenti e degli insegnanti nell'istruzione superiore. La mobilità virtuale potrebbe essere definita come l'insieme di attività istituzionali, supportate dall'uso di ITC, volte a facilitare la collaborazione internazionale nel contesto dell'insegnamento e/o dell'apprendimento. Nonostante l'interesse, il numero di ricerche empiriche sull'efficacia dell'implementazione della mobilità virtuale e su quali soluzioni tecnologiche potrebbero essere adottate risulta insufficiente. Il presente contributo descrive un progetto di ricerca finalizzato alla progettazione di un Massive Open Online Course (MOOC), aperto e accessibile, rivolto a studenti e insegnanti di sei paesi europei e istituti di istruzione superiore. 716 partecipanti hanno completato e valutato il MOOC sulla mobilità virtuale aperta. I partecipanti hanno espresso una valutazione positiva delle diverse caratteristiche dei MOOC: (1) Badge; (2) Caratteristiche tecniche; (3) Gamification. Quattro tematiche dei MOOC hanno ottenuto la valutazione

più alta: (1) Apprendimento collaborativo; (2) Apprendimento autonomo; (3) Apertura mentale; (4) Competenze interculturali. Nella parte conclusiva, verranno descritte le implicazioni e le future traiettorie di ricerca.

Parole chiave: Istruzione superiore; Mobilità virtuale; MOOC; Open Education; Valutazione.

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