

MOOCs – why (not)? Opportunities and barriers for European universities and organisations

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Abstract

This paper discusses the preliminary outcomes of a European-wide research endeavour to identify opportunities and barriers for European universities and organisations to increase the uptake of Massive Open Online Courses (MOOCs). It seeks to determine which support measures could unlock the full potential of MOOCs in Europe in relation to improving workplace training and the development of skills necessary of today's labour market.

MOOCs are now a feature of the European educational system, with European growth rates overtaking those within the United States. Nevertheless, most initiatives remain isolated, both geographically and by their sectors. MOOCs lack impact on the university system as a whole, and have yet to make their mark on the business community.

The aim of the EU-funded *BizMOOC* research project is to explore the challenges of maximising the potential of MOOCs across the European education and business landscape. In 2016, the project conducted qualitative interviews with 110 institutions (both universities and business organisations), as well as an online survey to address the learner's perspective. This paper discusses the findings from the first phase of this research.

Keywords: MOOCs, e-learning, business, workplace training, higher education, skill development

1. Introduction

Stimulated by the prospect of global recognition and huge numbers of international learners, European higher education finally got onboard the MOOC train in 2012 (EC, 2013, pp. 64–66). In response to the largely US-dominated market, European MOOC platforms (iversity/DE, Futurelearn/UK, Miriada X/ESP, FUN/FR) began to emerge. Since March 2013, MOOC growth rates have increased exponentially in Europe – from 81 MOOCs in July 2013 to 376 by November 2013 – and even outpaced the non-European growth rate. What’s more, the number of MOOCs available is still increasing. By the end of 2015, approximately 4,200 courses were offered by 500+ universities to 35 million students.

Although MOOCs have gone through a ‘fast cycle of hype and disappointment’ (Banerjee & Duflo, 2014, p.514), growth rates in Europe have maintained a steady level. Jansen & Goes (2016) report that four independent surveys indicate that over 45% of higher educational institutions (HEIs) intend to offer MOOCs. This is in contrast to the US where the number of HEIs that either offer a MOOC or plan to do so has remained stable at 12-13% for the last three years (Allen & Seaman, 2016).

Despite this, the European MOOC revolution is “nationally isolated” and is fuelled from the efforts of individual universities, scientists or companies, rather than a common European-wide strategy (Gaebel, 2013). The distribution of MOOCs is not equal throughout the continent, and can be found concentrated around certain countries. With some exceptions, the main players in the European MOOC game derive from Western Europe (Dillenbourg, 2013), with Eastern European HEIs only just joining in. Muñoz *et al.* (2016) show that the uptake of MOOCs by HEIs ranged from 25% in Germany to about 60% in France. Jansen & Goes (2016) show uptake ranged from 45% in Turkey to 90% in Italy and Portugal. They indicated also an increased uptake of MOOCs in the Czech Republic¹ and Lithuania².

2. Needs and gaps for MOOCs in Europe

Even though MOOCs are a relatively recent phenomenon, they are starting to be used outside of the Higher Education context; for example, in the recruiting process, the training of new employees, Human Resource Development provision, marketing, and even brand awareness (Grossman, 2013; iversity, 2015; Radford et.al., 2015; Sreeleakha and Manikandan, 2015).

One of the aims of the *BizMOOC* project is to identify the main opportunities and barriers to maximising the potential of MOOCs within the business community at the European Union level. During the first phase of the project, an in-depth study was carried out to identify **reasons why** some business organisations and HEIs **are not yet** part of the MOOC movement.

In an era of ubiquitous technology which dominates a great part of our daily life, the low or zero penetration of the MOOC movement in some European countries is surprising. Furthermore, despite high interest in MOOCs, there are still many organisations that are not aware of this mechanism for learning. Albeit, the “percentage of companies that feel comfortable incorporating MOOCs into their learning platforms rose to 43 percent from 30 percent last year” (Schwartz, Bohdal-Spiegelhoff, Gretczko & Sloan, 2016, 6).

¹ http://eadtu.eu/images/publicaties/Czech_Republic-Comparing_Institutional_MOOC_strategies.pdf

² http://home.eadtu.eu/images/Results/Lithuania_Country_report_of_MOOCs.pdf

3. Methodology

To address the aims of the project, a semi-structured interview instrument was developed. This style of qualitative interview was selected due to its flexibility, which allows for an open dialogue beyond the parameters set by the interview schedule. Table 1 summarises the overall research design.

Building on prior literature in the field of qualitative business research, a three-part interview guide was designed which focused on:

1. A short introduction to the MOOC concept and the interviewee's perception of this, including:
 - a. familiarity with the concept
 - b. added values associated to MOOCs
 - c. expectations
 - d. benefits.
2. More specific aspects of online courses and MOOCs, including:
 - a. identification of the main activities of the organisation/HEI connected to online training and MOOCs
 - b. identification of the availability and interest of the organisation/HEI in using MOOCs.
3. Needs (and/or interest) for collaboration with other organisations/HEIs on MOOCs, including:
 - a. identification of the main reasons for the organisation (not) to collaborate with others on MOOCs
 - b. identification of the topics and services on which the organisation/HEI is willing to collaborate with others.

In order to address appropriately the needs of the target groups, the guidelines were tailored to either business organisation or HEIs. This resulted in five lead questions and 17 follow-up questions for universities, and eight lead questions and 12 follow-up questions for organisations. In the HEI interview guideline, a fourth aspect covering "regional and national infrastructure on open education availability" was added to identify barriers and opportunities at a policy level.

The business organisation interviews were carried out with representatives of national and multinational companies, small and medium enterprises (SMEs), and even micro SMEs (with less than 10 employees). Interviews were also carried out with research institutes and industrial associations, among others. The geographical spread of all these organisations allowed for different perceptions and approaches of the MOOC concept. Overall, 55 interviews with business organisations were conducted. The analysis presented in this paper is based on the findings of 42 interviews. The representatives from the organisations were in charge of Human Resource Development or eLearning division within their companies.

The HEI interviews were carried out with representatives of different HEIs with no or limited previous experience in MOOCs. Interviewee institutions were located across 20 countries within the European Union. In order to select the most suitable HEIs for inclusion, a long list was created among the consortium of the *BizMOOC* project. The selection of the final institutions for interview was based on the following criteria:

- The HEI has not offered a MOOC to date.
- The HEI contributes to an equally distributed geographical perspective (between Eastern and Western Europe), but with a clear focus on Eastern European countries which are less experienced in this movement.
- The HEI contributes to a diverse range of institutions; for example, traditional, technical, medical, applied sciences, etc.
- A representative from the HEI is of an appropriate level of seniority and has some connection with eLearning.

Overall, 40 interviews with HEIs were conducted. Fifteen additional interviews, which have not been evaluated as yet, will be used to verify the results.

Table 1: Summary of the research design

Research Design	
Method	Qualitative, semi-structured interviews
Data generation tool	Telephone / Skype / Personal interviews
Structure	Qualitative interview guideline with open questions; one for HEI (5 lead and 17 follow-up questions) and one for organisations (8 lead and 12 follow-up questions)
Sample	42 business organisations and 40 HEIs
	44 in Western Europe and 38 in Eastern Europe
	54% from Western Europe and 46% from Eastern Europe (and Cyprus) ³
Timeframe	01/04/2016 – 15/09/2016
Analysis method	Qualitative content analysis and quantitative analysis (mixed analysis) by Bryman (2007)

Source: own elaboration

For the purpose of analysis, five categories were created based on the outcomes of the interviews:

1. Awareness and perception of MOOCs.
2. Involvement in online and MOOC activities.
3. MOOC expectations, reasons, benefits and barriers.
4. Opportunities for and interest in collaboration with others.
5. Existing infrastructure for promoting MOOCs at a regional and national level.

For the purpose of this paper, the preliminary results of the first, third and fourth categories are presented.

3.1 Limitations

Data from the interviews with organisations and HEIs are still undergoing analysis. As such, this paper offers findings derived from a preliminary set of results. Further planned activities within the *BizMOOC* project include the preparation and publication of guidelines and recommendations to maximise the potential of MOOCs for different target groups; the production of three MOOCs based on these guidelines; and an evaluation and subsequent revision of the guidelines. These activities will draw on the full data set and it is anticipated that they will include other suggestions and recommendations not explored within this paper.

4. Results

4.1. Awareness

The research instrument sought to establish how familiar the interviewees are with the MOOC concept. Of all the business organisations interviewed, 70% stated they are already familiar with MOOCs (Table 2a); however, only 34.78% of them are offering and/or producing MOOCs at present.

³ Eastern Europe includes all European countries (developed or developing economies according to the International Monetary Fund) which entered the European Union since the enlargement of 2004 onwards as well as countries which are not yet a member of the union.

Table 2a: Familiarity with MOOCs (business organisations)

	YES	NO	Offer/produce MOOCs
Familiar with MOOCs	23	19	8
% over total interviewed	54.76%	45.24%	34.78%
Western European countries	14	12	7
% of western European countries	60.87%	63.16%	87.50%
Eastern European countries	9	7	1
% of eastern European countries	36.13%	36.84%	12.50%

Source: own elaboration based on in-depth interviews

A total of 95.45% of the HEIs interviewed and located in Eastern European countries and Cyprus are familiar with the MOOC concept (Table 2b); however, only 25.71% of them are offering and/or producing some form of non-traditional learning activity (similar to MOOCs).

Table 2b: Familiarity with MOOCs (HEIs)

	YES	NO	Offer/produce MOOCs
Familiar with MOOCs	35	5	9
% over total interviewed	87,5%	12.5%	22.50%
Western European countries	14	4	2
% of western European countries	40.00%	80.00%	22.22%
Eastern European countries	21	1	7
% of eastern European countries	60.00%	20.00%	77.78%

4.1.1 Definition

The *BizMOOC* project offered a definition of MOOCs and asked interview participants whether they agreed:

MOOCs are courses designed for large numbers of participants that can be accessed by anyone anywhere as long as they have an Internet connection; they are open to everyone without entry qualifications, and offer a full/complete course experience online for free.

This definition was developed by different European MOOC projects (OpenupEd, 2014) and validated using a survey by Jansen & Schuwer (2015).

Of the number of organisations interviewed, 88% agreed with the definition compared with 90%⁴ of the HEIs interviewed. Several interviewees who are already familiar with the concept provided additional insight into defining MOOCs:

⁴ People who were not familiar with MOOCs were provided with an additional explanation about MOOCs.

- The characteristic **“for free”** is no longer mandatory as there are costs associated to MOOCs and other MOOC-type courses (for example, certificates available for a fee).⁵
- The characteristic **“open to anyone regardless of previous experience or academic qualifications”** does not seem to be applied in practice with existing MOOCs. This is because ‘some MOOCs would make it difficult for learners with a non-traditional background to engage or even feel welcome’. The definition in this sense covers mainly the *openness* of the access. Furthermore, in many cases, introductory courses, or even a diagnostic test to identify the level of the potential participants, might be necessary to enable learners to choose a suitable MOOC. This aspect was one of the main concerns of the interviewees regarding the definition⁶.
- There are doubts that a MOOC offers **“a full/complete course experience”** as it depends, among others, on the rate of completion of this type of course⁷.
- Most MOOCs have a start and end date⁸.
- MOOC certificates and their recognition should be included within the definition⁹.
- MOOCs do not appear to be tailored for a large/massive audience, but rather to specific learners¹⁰.
- Intellectual Property Rights and personal data protection are sensitive issues for organisations offering and for learners enrolled in this kind of courses due to its **“for free and online”** characteristic.

4.2. Expectations

The findings from the analysis of expectations of MOOCs from both the business organisation and HEI data suggest MOOCs could:

- Be **the way of training** employees on very specific and concrete topics.
- **Educate and orientate new employees** of an organisation.
- **Complement the existing experience of employees** with underlying theory and knowledge.
- **Support personal educational interests** that are not provided by the organisation.
- Be a **low-cost version of high-class courses**. Learners cannot always afford to attend valuable training due to the high price or to extra costs (as a consequence of the location of the training/course). MOOCs may provide a solution even though it may incur some cost (i.e. for obtaining the corresponding certificate).

⁵ Note that most courses are still offered for free but additional services are offered to MOOC participants as part of freemium business models.

⁶ There is a difference between entry requirements (certain age, completed secondary school and/or have a certain language/ math skill) and prior knowledge. Most MOOC providers don't pose any entry requirements so anyone can start the MOOC. However, to be successful some prior knowledge is recommended.

⁷ The authors of this paper suggest to approach this the other way round: Because anyone can follow a MOOC (without entry requirements), many will fail, because they lack the prior knowledge, motivation or other objectives before enrolling. Therefore, we do not agree that completion rates could determine a full course experience.

⁸ However, the criteria as part of the MOOC definition (OpenupEd, 2014) includes the possibility to have start and finish dates whenever the participant wants. OpenupEd was the first one that already included these self-paced MOOCs. It took until 2015 for the main MOOC providers to widely starting to offer them as well (although most of them are offered within a specific time-frame): <https://www.class-central.com/report/mooc-trends-2015-rise-self-paced-courses/>

⁹ Recognition and certificates are indeed part of the criteria of a full/complete course experience. See page 2 of http://www.openuped.eu/images/docs/Definition_Massive_Open_Online_Courses.pdf

¹⁰ There is a difference between tailoring a online course to a specific target group, which limit the number of participants, and designing a course for massive audience. I.e. that the efforts of all services (including of academic staff on tutoring, tests, etc.) does not increase significantly as the number of participants increases. However, recently the big MOOC providers are tailoring their course offering to business (employees) - introducing other abbreviations like SPOC (Small Private Online Courses).

- Be **reused and enhanced** with practical activities. Learners might use MOOCs for acquiring fast and free-of-cost knowledge; for example, to write a report on a specific topic. The report could be graded “on-site” and the student could receive credit through a formal programme of learning.
- Provide learners with the means to work on a topic with which they are **unfamiliar**.
- Be useful for **personal and professional development, lifelong learning, adult learning, learning new languages etc.** This suggests one of the main strengths of MOOCs is for **continuous professional development (CPD)** or **professional networking** purposes (i.e. for colleagues to keep abreast of new developments in their field, or to look at topics that they are interested in, but have not had time to investigate in depth). By this, it can
 - Provide **easier to access new knowledge** and **new research findings** on a global level.
 - Provide a taste of a new subject area for those wishing to explore a change in career.
 - Be suitable for **disabled persons** and for people located in the **rural and extra urban areas**. MOOCs could also be suitable for those with a **busy schedule** because of the autonomy of these courses.
 - Be suitable for **employees and specialists** in order to update knowledge on specific topics necessary for completing their daily tasks.
 - Be a good option to **acquire knowledge and certificates from other HEIs**.
 - Be a great **tool for improving skills**, not just in the chosen MOOC area, but for developing **soft skills, digital skills or competencies** which will improve employability as well as the learning methods employed by learners.

This suggests MOOCs are not just a way of ensuring employees’ training for free, but they are also a complementary tool for higher education, vocational education and lifelong learning. In terms of the added value of MOOCs, representatives of the business organisations stated the characteristic “openness” is the most relevant, followed by the characteristics: “free”, “massive”, “state-of-the-art”, “scalable”, “without entry requirements”, “interactive” and “collaborative”.

Representatives of the HEIs on the other hand suggested that the added value of MOOCs was in relation to “internationalisation” - not just as a learning experience in a global context, but also in terms of networking with specialists in the field or practitioners in specific areas at a global level. The “open” ethos is a clear advantage for the student community as well (independent of their enrolment on any official degree). Moreover, MOOCs are highly valued as a marketing tool and seem to be highly rated by the interviewed HEIs in terms of quality and the capacity for improving specific abilities, skills and competences.

4.3. Reasons not to be involved in MOOCs

While potential opportunities have emerged from the data, the research instrument also sought to identify barriers to the use of MOOCs. The data was therefore analysed to ascertain **reasons why organisations are not involved in offering/producing MOOCs** (Table 3), and the **challenges faced by HEIs when offering/producing online training**.

Table 3: Reasons organisations are not involved in offering/producing MOOCs

Cons
Low awareness
Lack of experience
Not a priority for now
Lack of capacity to offer/produce MOOCs
Acknowledged certificates needed
Intellectual Property Rights
Legal limitations/legal differences
Risk of revealing company secrets
Not covering the requirements of the company

Social media, videos, interactive content etc. restricted by the company firewalls or code of conduct

Sources: own elaboration based on in-depth interviews

Other barriers organisations are facing with when offering/producing a MOOC were also highlighted. It was found that many organisations use training to improve the performance for their employees. However, the use of MOOCs for employee training might not be suitable in this context. Moreover, it appeared there is a strong stigma of eLearning due to negative prior experiences. Low cost, or even free, courses are considered as being of poor quality by many people. Changing this perception is not an easy task.

Some organisations reported the lack of digital skills of some staff, together with Internet access difficulty in some regions, are also serious barriers for MOOCs as a training and education tool. Self-directed learning pathway policy, and the idea that MOOCs serve mainly “trendy” topics instead of core business competences, are not helping to increase the number of institutions involved in offering/producing MOOCs. Confidentially issues are also considered as a barrier by many of the interviewees.

HEIs are also facing barriers and challenges when offering/producing or even re-using¹¹ online training. Data from the interviews suggest the main challenge is the high cost of producing online courses, as well as the costs related to the MOOC platform used (Table 4). In this respect, the “free” characteristic, normally associated to the MOOC concept, is a major challenge to HEIs due to the perceived lack of profitability. It was suggested that there needs to be evidence of sustainable income in order to support the production infrastructure, and the staff involved.

Table 4: Main challenges faced in online training

Main challenges and concerns	
Motivate the participants to be active and do their work MOOCs or online courses cannot be for free	Legal limitations for imposing fees for education (traditional or online) <i>Different approaches of traditional and online education/training</i>
Mind shift towards different ways of teaching/learning necessary in both learners and employers To find and create a suitable, flexible production model To reach the target group	Need of enhancing e-study content and management of online tutors Give actual and good examples and demonstrations of workable solutions Collaboration with business, which is in a continuous movement
To maintain partnerships, links and relationships	Making sure links with industry are woven into the curriculum
The cost of producing the multimedia materials, to set up and host the MOOC platform The time limitation	Lack of knowledge necessary in digital skills

Source: own elaboration based on in-depth interviews

At least one aspect is somehow contradictory in the challenges highlighted by the interviewees: online courses and MOOCs cannot be for free as the interviewees assumed there would be high production costs (which is only true if MOOCs are not scaled up to a massive amount of users¹²), but in some countries (e.g., Hungary)

¹¹ Chapter 2.2.5 is dedicated to collaboration among organisations in MOOCs

¹² MOOC platform providers are in business, because they offer scalable services that are too costly for one organisation, but when shared nationally or even globally reduces the costs significantly.

education is for free and fees are not charged, even for online education¹³. This suggests legal frameworks could also end up being a challenge in the case of MOOCs as they are offered to “everyone, everywhere” without geographic restrictions.

4.4. Opportunities for collaboration

It could be suggested that not every organisation or HEI needs to produce their own MOOC. More than 75% of the HEIs from our sample are interested in collaborating with the business community to offer/produce MOOCs. Of these HEIs, more than 20 (67%) are located in Eastern European countries. Suggestions of types of organisation with which to collaborate include: IT companies, multinationals which outsource certain training activities, call centres, support services, medical companies, cultural heritage presentation, preservation and advertising, banks, trainings and consultancy companies, employment offices, NGOs, sport clubs/organisations, and other HEIs.

The primary reason for this kind of collaboration is the perceived high costs associated with offering/producing MOOCs. Additional reasons include around quality, experience, knowledge-exchange to tackle the challenges, and authentic learning. The need to adapt course content to real life contexts strengthens the need to collaborate with the business community in order to bring insight into the current and future demands of labour market.

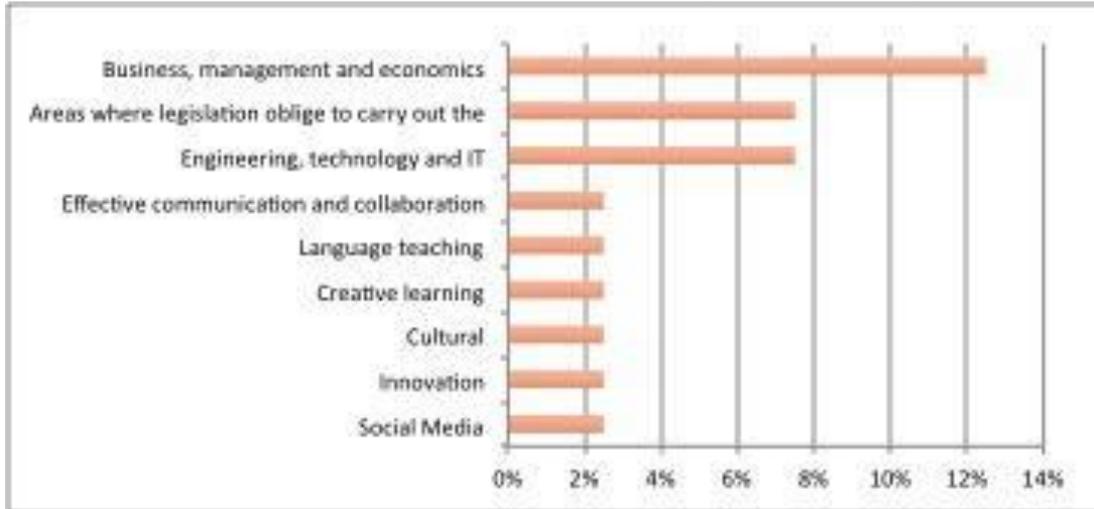
4.5. Skill alignment

In addition to the aims described, the *BizMOOC* project will produce and offer three MOOCs, each of which will address European key business and lifelong learning competencies. The subjects will cover learning how to learn, entrepreneurship, and creativity and innovation. It was therefore important to ascertain from the interview participants which skills they believe are key to their area of business, and society in general, in the next few years.

The HEIs interviewed are involved in offering/producing training in areas of engineering, technology, IT, in areas where the legislation imposes employees training (e.g. medicine and health, safety, fire fighting etc.), and in business-, management- and economics-related areas (Figure 1).

Figure 1: Areas where interviewed HEIs are offering/producing online training

¹³ The same counts for many European countries but mainly for regular bachelor and master students until mostly a certain age. Therefore the market potential in Europe is much higher for LLL/CPD. However, young people (and students) use these MOOCs as complementary to regular on campus education.



Source: own elaboration based on in-depth interviews

The most relevant areas of online training undertaken by the employees of the organisations participating in the research are IT skills and management skills development. Table 5 indicates the most relevant areas of their eLearning provision.

Table 5: Areas of online training undertaken by business employees

eLearning areas	
Mobile learning	Leadership
Digital competences	Entrepreneurship
Graphical design	Management
IT	Accounting
Mathematics and informatics education	Insurance
Compulsory labour training	Anti-money laundering and transparency
Vocational training	Foreign languages

Source: own elaboration based on in-depth interviews

5. Maximising the potential of MOOCs

Although only preliminary results of the research are presented in this paper, it is possible, along with prior literature in this field, to deduce actions that can be taken to maximise the potential of MOOCs:

- Raise awareness of the potential of MOOCs within the professional community.
- Assess the quality of the learning experience of a MOOC (i.e. does it provide practical, hands-on learning experiences grounded in real life).
- Collaborate to produce MOOCs of a high quality; that is, collaborations between entrepreneurs, MOOC platforms, educational providers and industry can align course content with the needs of the economy.
- Create a system for better recognition of online course achievements. Improved certification schemes would help online learners by documenting their newly acquired skills.

- MOOC providers help overcome the challenge of cost by supplementing existing study programmes by offering MOOCs on niche or emerging topics which cannot be covered otherwise.
- Create partnerships between different institutions in which MOOCs would be produced by universities and sponsored by industry or government bodies.
- Policy makers consider offering MOOC providers specific mechanisms that can help them to reduce the cost and raise the quality of the MOOCs they produce.

6. Conclusion

Results from the *BizMOOC* research to date show that both business organisations and HEIs are considering MOOCs as a new and free way of training/teaching their employees/students. Naturally, both groups experience challenges and barriers to doing so. From the findings presented in this paper, it is possible to conclude that proactive collaboration between different institutions and organisations could help to unlock the full potential of MOOCs in Europe. However, in order to achieve this, there is a need to raise the awareness of the potential of MOOCs within the professional community.

Cost is an important factor when considering to offer and/or produce MOOCs. To help address this challenge, this paper has presented some potential business models: MOOC providers could supplement existing study programmes with MOOCs; MOOCs are sponsored by industry or government bodies; and policy makers offer MOOC providers specific mechanisms that can help them reduce the cost and raise the quality of the MOOCs they produce.

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