What do higher education students know about massive open online courses?

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Abstract

In the framework of higher education there has been an evolution of access to open educational resources and, more recently, to the new Massive Open Online Courses (MOOCs). Nowadays there are already many universities in Europe that have begun offering MOOCs and certifying their students for it. But, do these students know what these types of courses are? As part of a doctoral thesis this paper presents a first stage consultation to the learners of the University of Barcelona (UB) (Spain) in order to identify their state of knowledge about MOOCs. Through a quantitative methodology based on a closed questionnaire some of the findings of this analysis show that although this is a learning modality aimed specifically at undergraduate students, in the Spanish context this could not be totally true.

Keywords: Massive open online courses; higher education; students, online learning; university.

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1. Introduction

In recent years there has been an evolution from OpenCourseWare and Open Educational Resources (OER) platforms with some universities not only sharing materials but also offering courses for students around the world. Therefore there has been a development of open access into open educational resources and, more recently, to these new Massive Open Online Courses (or MOOCs) (Valverde, 2014; Yuan & Powell, 2013). MOOCs have proliferated and have generated much debate (Conole, 2013; Caballo, Caride, Gradaille & Pose, 2014) as they have been presented as a technological educational practice that has broken some strongly consolidated principles of higher education (Cabero, Llorente & Vazquez, 2014) and constitute a turning point in the university context (Vazquez, Lopez & Sarasola, 2013).

As a result of this new learning modality millions of people have been enrolled in a Massive Open Online Course in a relatively short period of time (Alraimi, Zo & Ciganek, 2015; Fernandez , 2014,) and there are thousands of citizens who nowadays have followed one of these courses (García, 2015). By 2013 10 million students from all around the world had already registered in a MOOC (Shah, 2013). In less than five years this modality has become a global interest proposal going from a first course in 2007 that counted with only 2,500 learners enrolled, to the more than 2.5 million registered, for example, in 2013 in the Coursera platform (Pedreno, Moreno, Ramon & Pernías, 2013). Even during 2014 MOOCs were expected to increase by 100% relative to their student enrollment (Lee, Stewart & Claugar-Pop, 2014).

There are many factors that influence the motivation of students to enroll in a Massive Open Online Course. These factors include, for example, future economic benefits, personal and professional development, simply for pleasure (Yuan & Powell, 2013), or the curiosity or desire of students to move forward in their jobs (Breslow et al., 2013, Castano, 2013; Christensen et al., 2013). Other studies show that many learners participate in a MOOC because they have a general interest in the subject (87%) (Castano, 2013), because the course may help them decide if they want to take university classes (15%), and even a minority also argue they could not afford formal education (10% (Yuan & Powell, 2013). It should be borne in mind that MOOCs are free and this is another clear incentive for students to enroll in this learning modality. Other groups of students just want to experience completing an online course with thousands of other students around the world and interacting with them and the professor. And there are participants who simply seem to be obsessed with the MOOC format and they perceived online readings as a hobby (Hew & Cheung, 2014). Other factors that have influenced these citizens to become students of the new Massive Open Online Courses have been (Belanger & Thornton, 2013): to support lifelong learning or to gain knowledge on a topic of interest without particular expectations on completing the course or in having success; for pleasure, entertainment, social experience or intellectual stimulation; for convenience, usually in conjunction with encountered barriers to access traditional education; or for exploring online education in general. Also there are participants who are curious about MOOCs as a personal challenge (Hew & Cheung, 2014).

In any case these online courses are used many times to support informal learning where students can either complete the entire course or immerse themselves in different aspects of this course in order to receive full accreditation and to become a part of a learning modality provided by a prestigious institution (Conole, 2013). Although there are many authors who refer to the desire of learners to collect the more certificates of completion as possible (Hew & Cheung, 2014), other studies assert that many students in a MOOC are not interested in any type of accreditation or in earning academic credits (Gibson, 2014; Pirani, 2013). Moreover once the course is over some researches carried out over the past few years show that 5% of the students who followed a MOOC ensured that they would use what

they had learned in their daily lives, 23% several times a month and 50% several times a year (Krauth, 2014).

One of the major concerns about the new Massive Open Online Courses since its appearance has been the alarming statistics of dropout that indicate that only a minimal percentage of those starting a

MOOC finish the course (Bartolomé, 2014; Biemiller, 2013; Cabero et al., 2014; Jordan, 2013; Koller, Ng, Dp & Chen, 2013; Sangra, 2013; Yang, Sinha, Adamson & Rose, 2013; Zapata-Ros, 2013). Despite its high enrolment rates the students of this new learning modality leave the course for a number of reasons (Hew & Cheung, 2014; Mackness, Mak & Williams, 2010; Raposo Rivas, 2014; SCOPEO, 2013): the lack of incentives; the insufficient knowledge on the topic or the errors in understanding the content; the lack of help; the lack of time; the interest just in a particular topic; the poor pedagogical design of this type of courses; the lack of introduction to technology and the technical problems; the hidden costs of the course (for example, in the case of wanting to obtain some type of accreditation); the lack of necessary competencies in order to be able to follow the course; the predisposition of learners to the course; the lack of clarity about the aims of the MOOC; the lack of feedback and follow-up by the course teachers; or simply the economic unconcern as students does not have to pay to participate in this new learning modality.

As the literature presented so far shows, the new Massive Open Online Courses have appeared in the last years as an alternative learning modality of which many of the citizens of the whole planet have already been or are becoming their students. There are several researches that indicate the high participation rates, the profile of their students, the dropout numbers, the reasons for insertion and desertion, etc. But what is the situation in the Spanish context and, specifically, which are these numbers if we focus specially on a particular institution of higher education?

2. Methodology

The work presented below aims to identify the state of knowledge about MOOCs by the university population (the main beneficiaries of this new learning modality). Specifically, based on the analysis of the results of this research, the following study intends:

1. To know if higher education students are familiar with Massive Open Online Courses.

2. To identify how many higher education students have been or are enrolled in a MOOC course.

3. To know the motivation and personal expectations of the participants in this learning modality.

4. To know the reasons for learners' dropout.

5. To know the final general satisfaction of students participating in a MOOC.

6. To know the students' opinion about the MOOCs for potential professional development.

7. To understand the role of this new learning modality in the labor context.

In order to meet these objectives a quantitative methodology based on the administration of a closed questionnaire was used. If the informants of the research had not enrolled in any MOOC the participation to the questionnaire ended in the second question.

For the selection of the informants of this study the data collection process focused on all the students of the 18 faculties of the Universitat de Barcelona, in Spain (which occupies a competitive position at national, European and worldwide levels): Biology, Chemistry, Dentistry, Economics and Business, Education, Fine Arts, Geography and History, Geology, Law, Library and Information Science,

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Mathematics, Medicine, Nursing, Pharmacy, Philology, Philosophy, Physics and Psychology. The data collection process was carried out in two periods:

a)   A first period during the second semester of the academic year 2014/2015 in which the instrument was administered during the months of May and June of 2015.

b)   And a second period during the first semester of the academic year 2015/2016 in which this administration was carried on during September and October of 2015.

Currently the administration of this questionnaire is still being carried out in a third period in order to obtain more responses. For this reason the analysis presented in this paper shows only the first results of a first stage consultation.

For the administration of the questionnaire there were two possible ways: in paper or online. Specifically, the administration of the online version of the closed questionnaire was carried out through one of the tools of Google Drive. Google forms allowed a simple elaboration of the test guaranteeing the anonymity of the participants and favoring the processing of the basic statistics data with the help of Excel. The data obtained from the closed questionnaire, both administered in paper format and online, were entered in the same file and processed using this Excel statistical data analysis tool. From here, as the following results show, a brief statistical study of the closed questions was performed.

3. Results

As a part of this firs stage consultation 1281 responses from higher education students from the Universitat de Barcelona were obtained: 30.6% men and 69.4% women. Most of these informants belonged to the faculties of Education (20.4%) and Pharmacy (25.8%), followed by Medicine (13.7%) and to a much lesser extent Law (5.7%) and Chemistry (4.8%). Of these students most were not working at the time they answered the questionnaire (66.7%) and of those who were working only 2.2% were doing it full time and 31.1% part time. However, in most cases their jobs were not related to their studies and neither to their area of knowledge (46.7%).

The profile of a participant in a MOOC can be a key element to describe how should it be an ideal student of a virtual or distance learning modality and, specifically, of a Massive Open Online Course. In this study it is necessary to emphasize the positive self-perception of these students about their competencies, being the most valued the ability to work independently (84.4% of the students rated it between 4 and 5 out of 5) and the ability to manage digital information (56.6% of respondents rated it
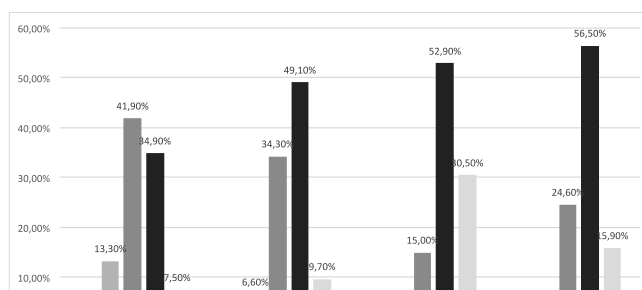
Figure 1. Answer to questions "e", "f", "g" and "h" of the questionnaire: "Rate your English level, your level of mastery of technologies, your ability to work independently and your ability to manage digital information.

When in the first question learners were asked if they knew what is a MOOC, only 10.6% answered affirmatively compared to 89.4% who said they did not know anything about this learning modality. Specifically this group of students who had heard of a MOOC course in recent years defined it mainly with words like learning (22) and distance (20), followed by others as free (17), accessible (13), autonomy (12), internet (10) and online (10).

Relating to the participation of higher education students in one or more Massive Open Online Courses, the figure below shows that curiously there were 86% of students from the Universitat de Barcelona who had never participated in a MOOC in front of just a 4% of students that had done it: 3% in a single occasion and 1% in two or more occasions. In addition, and interestingly, there were 10% of learners who did not even know if they had done so because they had doubts about what was really a MOOC and how it was distinguished from other modalities of distance and virtual education in which perhaps many of them had participated.
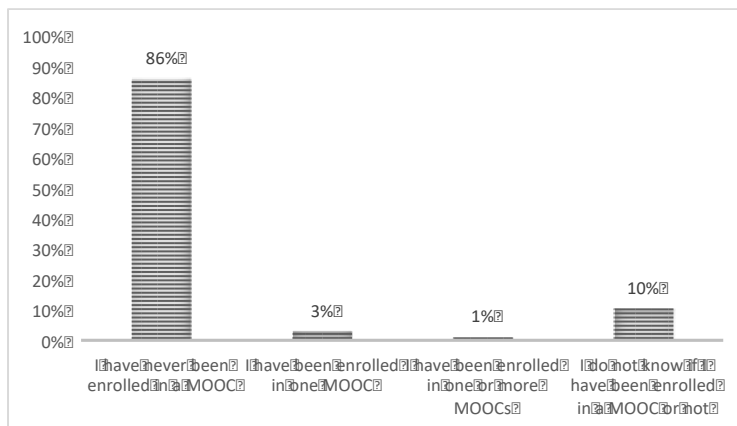

Figure 2. Answer to question 2 of the questionnaire: "Have you ever participated in a MOOC?"

The following graph 3 shows that when university students are enrolling in these types of courses it is mainly because they have an interest in the subject (72.20%). Two other good reasons for informants to participate in MOOCs are to have access to the materials and resources of the course (31.50%) and to be able to continue learning (29.60%). Finally, their motives that also appeared as recurring when higher education learners are deciding whether to enroll in a MOOC or not are to obtain a certificate (24.10%), for entertainment (22.20%) and to improve their personal or professional development (22.20%).
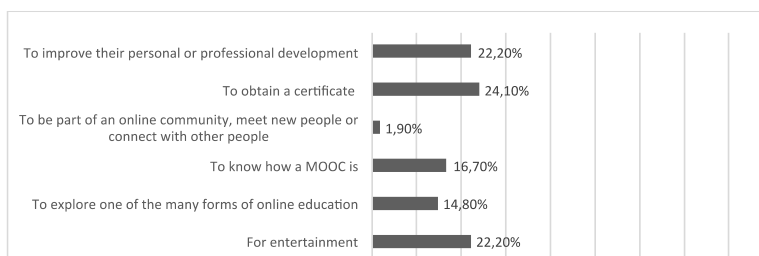
Figure 3. Answer to question 2.2. of the questionnaire: "If yes, why did you enroll in this course?"

Once a Massive Open Online Course has already its thousands of students enrolled, the subject of dropping out of the course has been one of the most questioned elements around this learning modality. In this case university students in particular leave the MOOCs in 50% of the cases and when they do it is, according to them, for lack of time mainly (66.70%). Another factors were for personal reasons (16.70%), for the lack of interaction with the teacher (12.50%) or because they did not have the intention to finalize the course, neither in the beginning of it (12.50%).

According to the perception of the students these Massive Open Online Courses of which 4% of the university population has participated have an average duration of 10,20 weeks and an average dedication of 8.30 hours per week. Moreover learners assures they were informed about this estimated time of dedication before enrolling in the course (84.30%) and only 15.70% of the students did not receive any type of indications about it (15.70%). Once theses course details were provided by the designers of the MOOCs (the number of weeks and the number of estimated hours dedicated per MOOC), they did correspond to reality (74.40%).

Regarding the perception of leaners about these courses as a valid platform for their personal and professional expectations, only 19.20% of the informants considered that the concepts or ideas learned during the MOOC were very applicable in their natural environment against the 30.80% who considered that little and 26.90% who considered that just enough. In addition, there were 13.50% of the participants of these courses who did not consider that the learning acquired in this context would serve them professionally. The same thing happened relating to the job search processes of which the majority of the students (44.20%) believed that the completion of the Massive Open Online Course would be a positive factor to find a job, while 26.90% considered that yes but little and 19.20% considered simply that no.

It is still uncertain why this new learning modality emerged and what is its real purpose in the context of distance education and, specifically, in the context of higher education. According to the university students MOOCs could be a solution for universities to basically have more educational offer (55,80%) and, in general, to improve the learning of their students (55,80%). Other informants' contributions were in line with Massive Open Online Courses as a solution to reduce the costs of education for students (34.60%) and to carry out new innovative and creative pedagogical strategies (34.60%).

Finally, when the university population was asked if once they participated in these courses they would encourage their classmates and colleagues to participate in a MOOC 88.20% said yes compared to 11.80% who have responded negatively to the question.

4. Conclusion

For students in higher education the first reason for enrolling in a Massive Open Online Course would simply relate to a personal willingness to learn more about a topic that may be of interest to them, away from their academic perspectives or to improve their job conditions. Once they finish the course these learners do not consider that the learning acquired in this online context would serve them

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professionally, perhaps because (and as we saw in the reasons why people are enrolling in a MOOC) they did not have this professional objective neither at the beginning of the MOOC.

As the informants of this study have shown through their responses to the closed questionnaire MOOCs are a new learning modality that require a total effort of 84,66 hours in general per course (approximately). Most of the learners receive the information about this estimated time of dedication before enrolling in a MOOC. This is very relevant for these higher education students in order to be able to organize and to avoid experiences of dropout, a criticism very popular in this learning modality. Half of the students consulted left the course before completion. Lots of them because the lack of teacher's feedback that they are accustomed to have in their formal education environment, or because they simply did not intend to finish it from the beginning. There are many students who enroll in these courses simply to be able to obtain some resource or material in particular or to acquire some particular information. Once they have met this goal they do not continue or simply they remain enrolled and connected but are not interested in performing teaching and learning activities or in participating to the assessment process.

It is still uncertain why this new learning modality emerged and what is its veritable purpose in the context of distance and higher education. Students highlighted the reduction of the costs of education for students (which could benefit the university population worldwide) and the appearance of new innovative and creative pedagogical strategies (which could benefit both teachers and students in the university context). In any case, the goals related to reducing the costs of education for institutions (17.30%) and increasing the reputation of universities (15.40%), two of the main objectives that according to the literature appeared to be the key when MOOCs arrived, were elements very little valued by the students of higher education.

All the results of this work could provide clues to MOOCs' designs. Nevertheless it is important to note that the information presented in this paper is part of a first stage consultation in the context of a doctoral thesis. For this reason all the data have not yet been shown and have to be exposed to a deeper inferential statistics.

References

Alraimi, K. M., Zo, H. & Ciganek, A. P. (2015). Understanding the MOOCs continuance: The role of openness and reputation. *Computers & Education Journal, 80,* 28-38.

Bartolomé, A. (2014). Qué se puede esperar de los MOOCs. *Comunicacion & Pedagogía*, *5,* 40-55.

Belanger, Y. & Thornton, J. (2013). *Bioelectricity: A quantitative approach*. Retrieved from http://dukespace.lib.duke.edu/dspace/bitstream/handle/10161/6216/Duke_Bioelectricity_MOOC_Fall2012.pdf on 5 February 2017.

Biemiller, L. (2013). *From a Million MOOC Users, a Few Early Research Results, The Chronical of Higher Education*. Retrieved from http://www.chronicle.com/blogs/wiredcampus/from-a-million-mooc-users-a-few-early-research-results/48841 on 4 February 2017.

Breslow, L., Pritchard, D. E., DeBoer, J., Stump, G. S., Ho, A. D. & Seaton, D. T. (2013). Studying learning in the worldwide classroom: Research into edX's first MOOC. *Research & Practice in Assessment, 8,* 13-18.

Caballo, M.B., Caride, J. A., Gradaille, R., & Pose, H.M (2014). LOS MASSIVE OPEN ON LINE COURSES (MOOCS) COMO EXTENSION UNIVERSITARIA. Profesorado. *Revista de curriculum y formacion del profesorado*, 18(1), 43-61.

Cabero, J., Llorente, M. & Vazquez, A. (2014). Las tipologías de MOOC: Su diseno e implicaciones educativas. *Profesorado. Revista de Curriculum y Formacion del Profesorado*, *18*(1), 14-26.

Castano, C. (2013). Tendencias en la Investigación en MOOCs: Primeros resultados. *Ikasnabar 2013 Open Education And Technology,* 128-143.

Christensen, G., Steinmetz, A., Alcorn, B., Bennett A., Woods, D. & Emanuel, E. J. (2013). *The MOOC phenomenon: Who takes massive open online courses and why? University of Pennsylvania.* Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2350964 on 2 February 2017.

Conole, G. G. (2015). MOOCs as disruptive technologies: Strategies for enhancing the learner experience and quality of MOOCs. *Revista de Educación a Distancia, (39),* 1-17.

Fernandez, C. F. (2014). Los MOOC dentro del abanico de posibilidades de la Me gusta 20 formacion online. Retrieved from http://www.educaweb.com/noticia/2014/01/13/mooc-dentro-abanico-posibilidades-formacion-online-7974/ on 1 March 2017.

Ferrer, F. M. (2017). What do higher education students know about massive open online courses?. *New Trends and Issues Proceedings on Humanities and Social Sciences.* [Online]. 4(1), pp 115-122. Available from: www.prosoc.eu

García, A. L. (2015). MOOC: ¿tsunami, revolucion o moda pasajera?. *RIED, 18*(1), 9-21.

Gibson, R. (2014). Four strategies for remote workforce training, development, and certification. In *S. HAI-JEW (Ed.), Remote Work force Training: Effective Technologies and Strategies* (pp. 1-16). Hershey, PA: Business Science Reference.

Hew, K. F. & Cheung, W. S. (2012). *Student participation in online discussions: Challenges, solutions, and future research*. New York: Springer.

Jordan, K. (2013). *MOOC completion rates: The data*. Retrieved from http://www.katyjordan.com/MOOCproject on 1 March 2017.

Koller, D., Ng, A., Do, C., & Chen, Z. (2013). Retention and intention in massive open online courses: In depth. *Educause Review, 48*(3), 62-63.

Krauth, W. (2015). Coming Home from a MOOC. *Computing in Science & Engineering, 17*(2), 91-95.

Lee, P., Stewart, D. & Calugar-Pop, C. (2014). *Technology, media & telecommunications (TMT) trends: Predictions 2014*. Retrieved from http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Technology-Media-Telecommunications/gx-tmt-predictions-2014.pdf on 2 March 2017.

Mackness, J., Mak, S. & Williams, R. (2010). The ideals and reality of participating in a MOOC. In *Proceedings of the 7th International Conference on Networked Learning 2010.* University of Lancaster.

Pedreno, A., Moreno, L., Ramon, A. & Pernías, P. (2013). La crisis del modelo actual. Los MOOC y la búsqueda de un modelo de negocios. *Campus Virtuales*, *2*(2), 56-65.

Pirani, J. (2013). A compendium of MOOCs perspectives, research, and resources. *Educause Review*. Retrieved from http://goo.gl/tVImJd on 1 December 2016.

Sangra, A. (2013). Luces y sombras de los MOOC. *Investigacion y Ciencia, 444,* 38-39.

SCOPEO. (2013). *MOOC: estado de la situacion actual, posibilidades, retos y futuro* (No. 2) Retrieved from http://scopeo.usal.es/informes/scopeo-informe-no-2-mooc-estado-de-la-situacion-actual-posibilidades-retos-y-futuro/ on 3 December 2016.

Shah, D. (2013). *MOOCs in 2013: Breaking down the numbers*. Retrieved from https://www.edsurge.com/n/2013-12-22-moocs-in-2013-breaking-down-the-numbers on 1 November 2016.

Valverde, J. (2014). MOOCs: Una vision crítica desde las Ciencias de la Educacion. *Profesorado. Revista de Currículum y Formacion del Profesorado, 18*(1), 93-111.

Vazquez, E.; Lopez, E. & Sarasola, J. (2013). *La expansion del conocimiento en abierto: los MOOC.* Barcelona: Octaedro-ICE de la Universidad de Barcelona.

Yang, D., Sinha, T., Adamson, D. & Rosé, C. P. (2013, December). Turn on, tune in, drop out: Anticipating student dropouts in massive open online courses. In *Proceedings of the 2013 NIPS Data-driven education workshop* (Vol. 11, p. 14).

Yuan, L. & Powell, S. (2013). *MOOCs and open education: Implications for higher education* Retrieved from http://www.smarthighered.com/wp-content/uploads/2013/03/MOOCs-and-Open-Education.pdf on 2 December 2016.

Zapata-Ros, M. (2013). MOOC, una vision crítica y una alternati- va complementaria: La individualizacion del aprendizaje y de la ayuda pedagogica. *Campus Virtuales, 1*(2), 20-38.