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From Virtual Mobility to MOOCs: Drawing On UbiCamp Experience To Set Up A Network For Massive Open Online Courses

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Abstract: Online course and MOOCs are revolutionising education worldwide, as a radical shift is taking place in education as concerns delivery modes, from face-to-face classes to online patterns. Distance education, both in Virtual mobility mode and by means of the MOOCs, offers students the opportunity of learning and gaining experience in international environments, without moving from their home or study place.
The aim of this paper is to explore the possibility of transferring the experience made in the UbiCamp project, which implemented a Virtual mobility experience among seven universities, into a MOOC network, by identifying the advantages as well as the limits of this modality of e-learning. This will give the universities the opportunity to experiment new and effective ways to expand the online offer, and to combine the two modes of learning for the student (face-to-face interactions and self-paced online tuition), to make this a more and more regular way of cooperation among HEIs.

Keywords: UbiCamp Project, Virtual Mobility, MOOCs, Distance Learning, University Networking

1. Introduction

My aim in this paper is to explore the possibility of transferring the experience of a project called UbiCamp regarding Virtual Mobility among seven European universities, into a MOOC network.
In a first part of this paper I will describe the UbiCamp project as is was, the activities and the results. Then I will describe the state of the art of MOOCs, Finally I will illustrate the proposal to developing UbiCamp experience into a MOOC. I'll outline reasons to make UbiCamp into a MOOC and the advantages of choosing Pegaso University platform to distribute the courses.

2. Virtual mobility

The main aim of UbiCamp was to provide students with an innovative method that could at the same time respond to the multifaceted demands of virtual mobility. Although 'Virtual Mobility' is not yet a widely-spread concept, the European Commission, along with national agencies is positively promoting Virtual Mobility, mainly funding dedicated projects, previously in the framework of programmes like SOCRATES/Minerva, Erasmus, and with the eLearning programme and Lifelong Learning Programme, currently within Erasmus + (Vriens, M; Achten M. Van Petegem, W., Op.de Beeck, I., 2010).

The European Commission suggests a broad definition of VM "Virtual mobility:

> "Cross-border e-learning (i.e. when a student follows distance learning courses offered by a higher education institution abroad). Virtual mobility can be useful in promoting and complementing physical mobility. Virtual mobility can play an important role in the internationalisation strategy of an institution (Mapping University Mobility Project, 2015)".[1]

Virtual Mobility is an alternative to the courses attended by students abroad in physical mobility, which is often an all too short experience, and can overcome language and cultural barriers, also fostering and maintaining "social" relations, which are an important issue of exchange programmes.

It is important to highlight that, as students in Higher Education can attend courses in another institution outside their own country for a limited time, without leaving their home, VM consents a form of mobility for all, especially when scarce funding opportunities reduce the possibility of physical mobility. From this point of view, MOOCs can be considered a democratized access to knowledge of which everyone can benefit.

2.1 Main issues of VM

In dealing with Virtual Mobility, we have to take into account many facets in order to implement a broad strategy to overcome the existing hindrances. There is a number of issues HEI's need to address in order to increase recognition

[1] http://ec.europa.eu/education/ects/users-guide/glossary_en.htm

and to further implement distance education and virtual exchanges.
These mainly concern organisation (credit recognition, institutional agreements, tests and exams validation, etc) and technology issues, as for the common ICT standards to adopt to make it possible to access and (re)-use online resources, etc. Finally, the challenge concerns how to adapt the study subject to multi-institutional, multi-cultural learning, and how to deal with the sociocultural and linguistic topics as to the country the students visited virtually.

3. The project UbiCamp

The project UbiCamp "Integrated Solution to Virtual Mobility Barriers" was an Erasmus Multilateral Project carried out by seven universities, where the students attended other universities' course in Virtual Mobility.

VM is a kind of mobility that substitutes, or complement, the real mobility, whose innovative model is based on a common framework for carrying out student virtual exchanges, to be assessed not only from an academic point of view but also for the sociocultural aspect. Most importantly, "the model designed within UbiCamp project defines the minimum requirements for VM recognition in students and lecturers' curriculum, and not simply as an international e-learning process" (Juan Fuente, A.; Hodas, T.; Menéndez Ferreira. R., 2013). UbiCamp technological model could easily integrate new partners into the project. The project produced also a number of OERs (Open Educational Resources) concerning sociocultural learning materials, training material, etc., to be accessed by the participants.

Each partner delivered their course(s) through their own platforms: they not only provided the subject contents but also allowed teachers and students to interact. In this sense, we can say that the courses in the Ubicamp project were already miniature MOOC's. The students were all regularly enrolled at one of the universities which took part in the project, and worked on assigned tasks in a virtual environment.

The project started on the basis of a direct acquaintance among some of the partner universities, who chose to cooperate by using information and communication technologies. To reach these objectives, the availability of Distance Learning technologies was a key factor, as was an open policy towards Open Education Resources. The components which were considered fundamental for a fruitful implementation of the UbiCamp project were:

- Information: to give students all necessary information in order to take one semester "abroad", they were given clear and detailed info of their virtual semester in a partner institution, both on administrative steps and the social issues involved to be documented.
- On line courses: the central part of the project was based on the idea to deliver the courses online, which could be attended from any possible place they wished.
- Interactivity: students had the chance of truly interacting with peer students and tutors abroad. Technology played a crucial role in all this, as it created an interactive workspace for all participants.
- Didactical: partners shared study curriculum and assessment methodologies;
- Sociocultural elements: learning resources created to enhance intercultural exchanges.
- Open educational resources: contents were based on the subjects and standards identified by partners. The Learning Objects were designed in order to achieve maximum usability at European level.

3.1 The partners

UbiCamp program was developed by seven European universities, each of them providing courses to be recognised in the partners' curriculums. The seven universities offered the online courses on their own websites and the students were all students regularly enrolled at the partner institutions, one of which, the Italian Pegaso, is an Online University.

The idea to make up a consortium was put forward by the Spanish university of Oviedo in 2009. The other partners were: University of Southampton (UK), Vytautas Magnus University (Lithuania), Universidad Autonoma de Madrid (Spain), Yasar Universitesi (Turkey) and Kaunas University of technology (Lithuania). Pegaso Online University (Italy) joined the consortium in the phase of piloting of the online courses.

4. The MOOC revolution

The acronym MOOC stands for Massive Open Online Course. A MOOC is course delivered online, integrating different features: unrestricted and free accessibility to higher education, the expertise of a teacher academically accredited in a field of study, a repository of resources available online. A MOOC requires the active commitment of students who establish autonomously their learning goals and interests.

Hundreds of thousands of people around the world are using opportunities to take courses online as MOOCs are becoming mostly popular. Online courses are offered by more and more colleges and universities worldwide. Online portals such as Coursera and Udacity work with several universities and make selected courses available on the Net. Less famous universities are including virtual education options offered from more prominent institutions, and this makes them more attractive, while at the same time they can make their best courses accessible to an international audience.

A MOOC generally has no fees, nor does it require formal accreditation, the only requisites being motivation and Internet access. Universities developing them are persuaded that MOOCs can involve thousands of new students all over the world. Until a few years ago, it was mostly top tier universities that offered MOOCs (Tschofen & Mackness, 2012). In recent years, though, this situation has evolved as other institutions of higher education are offering MOOCs.

The reasons of the favourable opinion enjoyed by MOOCs are their usability and the growth potential. Universities are interested in MOOCs in the view of extending their "brand", attracting new students, experimenting innovation in their didactic offer and, of course, reducing costs.

MOOCs learners' main motivation is, in an early stage, satisfaction from studying high level contents and curiosity about the experience, but now more and more learners are also looking for some form of certification or award.

It is easy to predict that the influence of MOOCs on higher education will be deep and long-lasting. Nonetheless, it is controversial whether MOOCs will bring more advantages or disadvantages to HEI's. Many universities are positively changing their approach, following the debate which is taking place in the press as well as in the academy, concerning the massive growth of this phenomenon.

4.1 A short history of MOOCs

The acronym MOOC was first used in 2008 by Dave Cormier of the Prince Edward Island University, to describe an open course created by Siemens and Downes and offered to a group of students at the Manitoba University, and they also allowed students from other universities to enroll. (Downes, 2012).

MOOCs were conceived as "an environment for enacting connectivist pedagogy, an approach to teaching focused on building networks between participants, based on, but moving rapidly beyond, a foundation of shared content" (Mahraj, 2012), and using social networking to foster interaction and collaboration among students.

Since then, MOOCs have been proposed by more and more universities, and became highly popular in 2011, when "two courses taught by Stanford professors Sebastian Thrun and Peter Norvig, the founders of Udacity, enrolled 90,000 and 160,000 students, respectively"[2].

Many other preeminent professors have been creating MOOC courses, or, like Daphne Koller and Andrew Ng, have set up their own MOOC providers, such as edX, Coursera, MITx and Udacity (Mahraj, K . , 2012).

MOOC providers like Udacity, Coursera, and edX are meant to "democratize education", with massive enrolment in their free courses. Daphne Koller in a TED talk claimed that Coursera's goal "is to take the best courses from the best instructors at the best universities and provide it to everyone around the world for free" [3]. One necessary corollary is that courses be available for free to anyone with an Internet connection, thus contrasting the high costs of post-secondary education and at the same time meeting the increasing demand for higher education.

4.2 Main MOOC features

As said before, MOOCs offer learners the opportunity to attend courses delivered by renowned experts without any prerequisites. Videotaped lectures based on a set syllabus are presented over a fixed period, with assignments to students, online resources, midterm and final tests. There are no expectations and students are free to complete "as much of the course as they wish and at their own pace" (Martin, 2012).

The courses' structure varies depending on the university. In some cases, lecturers offer virtual tutorial hours for student guidance with 'live' discussion, in others they only ensure discussion in forums, without any direct contact.

In Kop, Fournier, and Hill (2011), activities in MOOCs are divided in four categories: (1) aggregation, where "access is provided to a wide variety of reading, video and web resources in the course"; (2) remixing, where "after using resources in the course, that content is then reused in another format, in a blog, or in discussion board postings elsewhere"; (3) repurposing, where "participants were encouraged to create something of their own"; and (4) feeding forward, where "participants are encouraged to share their work with other people in the course and with the world at large".[4]

As in MOOCs "knowledge is distributed across a network of connections", learning consists of the learners "ability to construct and traverse those networks"[5]. Another feature is that MOOC students are very diverse as age, gender and world distribution are concerned. However, even if not all are native English speakers, they use this language to study and communicate, and also share common interests.

Learners in this worldwide connectivity "interact with one another" and share "ideas, hunches, queries…in the hope that these interactions will trigger other insights". (…) knowledge is social in nature and constructed through a process of collaboration, interaction and communication among learners in social settings" (DeWaard et al., 2011). Moreover, even in presence of a coordinator, in the end, when participants suggest discussion topics these are taken up by others showing that that participants can easily manage their learning pace.

[2] (Mehaffy, G.L., 2012).
[3] Retrieved at: https://www.ted.com/talks/daphne_koller_what_we_re_learning_from_online_education/transcript
[4] Kop, R., Fournier, H., & Mak, J. (2011).See also Creed-Dikeogu, G., & Clark, C. (2013).
[5] Mahraj, K. (2012).

4.3 Some problems with MOOCs

MOOCs are facing some hindrances in achieving full effectiveness, which are caused by problems still to be solved. One major question is whether MOOCs will just transfer ordinary courses online, or will force the academy to develop new didactic schemes. For example, one major issue is that professors grade papers of their MOOC students by means of digital self-graders, so that inevitably all assignments are made of multiple choice questions. Many courses are graded on a pass/fail system, but in this context, what does a 'pass' mean? Students should have more opportunities to write papers extensively on issues taught in their MOOC course, and to build a fruitful relationship with the lecturers or get systematic response on how their learning progress is going on.

More complicatedly, many MOOCs lack effective instructional strategy, as they do not include the student-teacher interaction that should be needed for most lectures; they appear insufficient as regards enabling dialogue and collaboration between participants and lecturers.

Moreover, students not taking part in forums or chatrooms miss the opportunity to exchange ideas and opinions with other students about the course(s) they are attending, and this represents a problem as interaction among students in a learning environment is extremely important. Also, a positive attitude of students and staff towards online learning teaching is necessary, as well as effective tutoring and assistance should be ensured to help students to actively participate in online courses.

Nevertheless, the number of MOOCs offered is continually growing, and universities are going to get more and more involved, and must be prepared to support the MOOCs development as well as their implementation. Their strength (being open to students of all backgrounds without prerequisites) becomes a weakness when it comes to more high-level classes, as it is more difficult to teach advanced topics to a wide range of students with dissimilar backgrounds.

Even if they are a new way of accessing learning, MOOCs maintain many features of traditional education. As in ordinary courses, students have the right to access reliable content and to be instructed on how to find, assess, and use information. Professors will be required to make sure this information is complete and handy, and to support their institution and students participating in MOOCs.

Though universities are not homogenous organisations, the prevalent opinion is that, whatever their pros and whatever their cons, MOOCs diffusion is unstoppable, and will transform the traditional system of Higher Education.

5. Turning Virtual Mobility into MOOCs

The UbiCamp courses not only delivered the subject information but also allowed students and teachers to interact. However, sharing online courses in the UbiCamp project was thought as a one-off activity which has not been included as a stabile form of cooperation among partner universities. One reason is probably that online and traditional courses in many cases are not fully compatible, and cannot be easily harmonised.

In my opinion the UbiCamp courses do include the potential to become a MOOC network, as partners can count on a two years' experience with sharing distance learning. As a matter of fact, UbiCamp was in the first place "a virtual community of teachers and students", and it should not be a big step to turn into a MOOC system. Offering the students a number of MOOCs stemming from the UbiCamp courses would represent an advantage in that UbiCamp also integrated the sociocultural aspects, while MOOCs normally have a stronger focus on learning with peer students. Students are more motivated if they can make their learning a social process. A student can start a learning interaction with a fellow student in a larger group of students, whereas in the UbiCamp courses we had only some tens of students. In this sense, a MOOC platform would have much more impact than the UbiCamp courses had, while the latter represents an example of how sociocultural aspects are important in the learning process.

A MOOC network will also potentially give much more added value to the UbiCamp partners, making their programmes attractive to students from all over the world. With the aid of a MOOC platform, the partners could also enhance their 'internationalization drive': the foreign student exchanges will be necessarily more numerous than in bilateral collaboration between universities. Moreover, if the experience with the MOOCs will prove successful, this will make students consider with increased interest physical mobility to a partner's campus.

In order to implement a network, the information among both MOOCs and Virtual Mobility experts from the different partner HEIs must be made easier, and existing examples and good practices of MOOCs and Virtual Mobility must be integrated in coherent collaboration agreement.

6. The platform choice

In the case UbiCamp partners decide to implement a MOOC network, a crucial question is which platform to choose. All partners have already some experiences in using platforms that are unrestrictedly available to teachers who want to deliver online courses, and Pegaso more than others, as all its courses are online.

Naturally, the platform to be chosen must fulfill the needs required in online education delivery, *i.e.* it must be intuitive, have a well-neat and easy design as a learner doesn't have to need to be particularly expert as far as computer skills are concerned. The interoperability of learning tools should be essential, in order to easily access social media and repositories.

One real possibility could be the *Pegasonline* e-learning platform that allows the management of on-line courses based on the Learning Management System (LMS). It can integrate higher technological, interactive, educational tools, such as TV Learning, Radio Learning, Social Learning and even Games Learning, which can involve learners in a wide spectrum learning experience.

The platform is an operative space which is always available, easily accessible, where everyone can find contents, tools, technical supports and also a wide library. Any resource on the platform is linked to any other, and can be reached also through tablets and smartphone. Its use is tracked for both teachers and students in order to have reports, such as a dynamic profile of learning improvements and a list of critical elements.

Thus, teachers of any institution in the MOOC network can create assignments where learners can make questions and comments, and have a dialogue with students from different backgrounds. One issue to be agreed upon is whether students who are registered in one of the networked universities can interact with the unregistered MOOC subscribers and receive the same assignments, or it would be advisable to create different feedback and grading areas, and also the possibility of devising a credit (sub)-subsystem for MOOC subscribers.

7. Conclusions

The framework and the standards defined within the UbiCamp project, along with the digital tools and materials produced, can support the HEIs authorities and the evaluation institutions to recognize the Virtual Mobility as an innovative global e-learning model. Combining online courses with face to face courses offered the UbiCamp students an international network and an overall viewpoint on study opportunities.

More interestingly, the Virtual Mobility experience showed that a decentralized, widespread MOOC network is possible, in which participating institutions merely have to meet the quality requirements, while the technology integration can be a simple process.

New technologies, along with different pedagogical approaches offer both students and lecturers a more challenging experience. In this way our work with UbiCamp was part of a wider on-going process to continually increase the quality of the study programs provided by Universities.

However, issues such the technological infrastructure, the accreditation of MOOCs, a good and agreed assessment system still need to be addressed. It is crucial that universities in their policies support integration of MOOCs, as long as they are want to assimilate new learning technologies and pedagogies in the traditional systems The MOOC revolution raises new questions and universities are requested to respond to these, and to implement their capacity to innovate, in order to survive and grow, and (last but not least) also to compete with the massive investments that non-educational providers are making in this field.

Finally, the universities can use MOOCs to attract international students to their study programmes, and improve access to life-long learning in Europe and worldwide.

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