



FLEXIBLE TRAINING MODELS: A RESPONSE TO THE CURRENT NEEDS

GAME-BASED LEARNING MOOCS, A FLEXIBLE TIME-SPACE SOLUTION FOR ENTREPRENEURSHIP EDUCATION

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1. **ABSTRACT:** Massive open online courses (MOOCs) offer the possibility of ensuring flexible lifelong learning opportunities to a massive number of participants. In response to the current need to develop entrepreneurship skills in adult citizens who face a complex work lifelong learning balance (WLLB), we have developed a game-based learning MOOC in Catalan that offers a flexible time and space learning opportunity for developing entrepreneurship.
2. **RESUM:** Els cursos en línia oberts i massius (MOOCs) són una oportunitat d'aprenentatge al llarg de tota la vida per una quantitat massiva de participants. Els MOOCs ofereixen un format que permet desenvolupar les competències emprenedores dels ciutadans, compatible amb el seu equilibri treball-vida-formació (WLLB). Presentem en aquest estudi un MOOC en català pel desenvolupament de l'emprenedoria basat en un aprenentatge basat en jocs.
3. **KEYWORDS:** Massive Open Online Course, Game Based Learning, Entrepreneurship Education, Distance education, Lifelong learning / **PARAULES CLAU:** Cursos en línia oberts i massius, Aprenentatge basat en jocs, Emprenedoria, Formació a distància, Aprenentatge al llarg de la vida.



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4. DEVELOPMENT

a) Objectives

The objective of this study is to analyse the time-space flexibility in the *massive open online course* (MOOC) ‘Introduction to Entrepreneurship’ that was offered to an open community of participants in late 2013. To analyse the time-space flexibility of this MOOC we start by discussing the need for a MOOC format to meet the adult lifelong learning needs for a *work lifelong learning balance* (WLLB) and the value of *game based learning* (GBL) approaches for raising the engagement levels of adult MOOC learners.

b) Description

b.1) Introduction

Entrepreneurship is an attitude that is being encouraged in the context of the current European crisis and the need to advance self-employment strategies and economic opportunities. According to Audretsch (2003, p. 5) “entrepreneurship has become the engine of economic and social development throughout the world”. Nevertheless, compared to Asians and North Americans, European citizens prefer salaried positions (Rodríguez, González-Sánchez, & Ríos Sastre, 2012). The Global Entrepreneurship Monitor (GEM) studies developed by Bosma and colleagues observed in 2007 that the Spanish were among the weakest in entrepreneurial intentions and among the most fearful of failure (Bosma et al. 2007). However, more recently, Giacomini and colleagues (2011) observed that Spanish students show a higher entrepreneurial disposition than Asian and North American students. A change in the entrepreneurial disposition could be partly attributed to the current economic crisis and the public and private encouragement to develop entrepreneurship as a self-employment strategy. Despite this change in recent years, altering the paradigm for creating job opportunities means fostering entrepreneurship attitudes and overcoming the idea of ‘finding a job’ created by someone else. Entrepreneurship education is especially important when entering entrepreneurship from



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unemployment, because of higher rates of failure among this type of entrepreneurs (Millán, Congregado, & Román, 2014).

Massive entrepreneurship education solutions are required to provide learning opportunities for a large number of citizens and so change orientations towards entrepreneurship. The *massive open online course* (MOOC) format offers an opportunity to deliver training for a large number of participants who require flexible learning solutions in terms of time and space. McAuley, Stewart, Siemens and Cormier (2010) introduce the testimonial of a MOOC participant which highlights the flexibility of the MOOC model because of the time and space implied in online learning, and because of the free level of engagement. Mackness, Mak and Williams (2010) also report the positive experience of autonomy and time flexibility in the learning process expressed by the MOOC participants. Participants can follow the course at the level of engagement they choose, without the constraints of an official higher education course enrolment. MOOC participants are free to complete or drop out the course without consequences. Traditional online education offers a flexible time-space; in addition, MOOCs offers a greater flexibility in the engagement and disengagement, without any major consequences in case of lack of activity or drop out.

b.2) Current limits of MOOCs

MOOCs aim to facilitate the sharing of materials and knowledge among a massive number of participants, and represent a mix between online learning and the massive participation opportunities offered by *asynchronous learning networks* (ALN). In recent years, major players in higher education such as Harvard and MIT have developed the ‘edX’ initiative, in addition to other start-up initiatives such ‘Udacity’ and ‘Coursera’. Most of these courses are content-driven, including pre-recorded lectures with basic interactive learning activities – such as automatically corrected quizzes (Osvaldo Rodriguez 2012). MOOCs distribute knowledge and basic interactive learning activities through the Internet to a massive number of participants with a small number of instructors. The transposition of face-to-face methodologies to MOOCs, including constructivist and connectivist approaches (Siemens,



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2012; Guardia, Maina, & Sangrà, 2013) has not overcome the large number of drop outs in MOOCs. Blom, Verma, Li, Skevi and Dillenbourg (2013) have proposed using MOOCs in collocated blended learning approaches. Nevertheless, a collocated approach limits the potential of MOOCs to reach a massive audience and so reduces time and space flexibility. Daniel, Casany and Allier (2014) stresses the need for improving the MOOCs quality by fostering the learner empowerment, a more workplace focus orientation (Guàrdia, Maina, & Sangrà, 2013), peer learning and assessment, developing collaborative learning and social networking activities, taking advantage of the learning analytics for developing more adaptive and personalized courses, introducing activities with a higher degree of interactivity and immediate feedback and considering the gamification and GBL approaches that could be applied to MOOCs to overcome lecture-based approaches.

b.3) Game-based MOOCs

To overcome content-driven MOOCs and develop participant engagement, we propose to include a *game based learning* (GBL) approach in MOOCs (Romero, 2013). The use of a GBL approach could partially replace the lecture-based approaches adopted in the main MOOC platforms, where text, audio, and video lectures are combined with automatic quizzes. GBL and SG could promote the development of more practical and applied skills and knowledge – such as entrepreneurship skills. The use of GBL as an active learning methodology is particularly important in the case of courses aiming to develop entrepreneurial knowledge, competences and intentions. Entrepreneurship education requires an experiential component, in order to develop the entrepreneurial competences that cannot be experienced and developed in a lecture-based course (Tracey, & Phillips, 2007). Comparing entrepreneurship education in lecture-based and active learning methodologies, Piperopoulos and Dimov (2014) report higher entrepreneurial intentions when engaging learners in an active learning course rather than a lecture-based course. Using a GBL approach in MOOCs engages the learners in a more active learning methodology where they can learn the entrepreneurship competences in a risk-free environment. Serious games (SG) provide a context of exploration and experimentation



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(Sauvé, Renaud, & Kaufman, 2011) where the learner can develop competences in a risk-free environment; evaluating how their game decisions impact their simulated business (Rainsford, & Murphy, 2005). In the recent years, SG have become one of the trends of learning innovation in Business Schools, moving the traditional lecture methodology and the study cases towards simulations, interactive case studies and SG where the learners' could develop management competencies in an active learning approach (Popescu, Romero, & Usart, 2013; Lagace, 2010).

b.4) Methodology

A free game-based MOOC that provides a beginners course in entrepreneurship has been offered in Catalan during 2013 (Romero, & Usart, 2013). The MOOC course was developed in the context of the European funded lifelong learning project 'Stimulating entrepreneurship through serious games' and aims to encourage entrepreneurship skills among a large number of citizens through the use of serious games (SG). The 'Introduction to Entrepreneurship' MOOC was structured around four main activities. The course was designed as a short-term course in order to engage the lifelong learners during a short period of time (two weeks in average) and facilitate the competitive learning activities among them. Firstly, the participants were invited to introduce themselves as (future) entrepreneurs and develop an initial social networking activity in the LORE platform; secondly, the participants benefited from a entrepreneurship profile analysis in order to identify their strengths and areas of development as (future) entrepreneurs; thirdly, the learners became players to develop their knowledge in relation to the financial statement analysis (assets and liabilities) using the *MetaVals* game (Romero, Usart, Popescu, & Boyle, 2012). Finally, the participants were invited to play *HotShot* for creating and running a small enterprise. Participants in the MOOC were engaged in competitive and cooperative game mechanics in order to combine the benefits of cooperative knowledge sharing and construction and the engagement and fun generated from the competition against other participants (Romero et al, 2012). The competition was gamified along the MOOC and two types of prizes were offered to the 6 finalists. The first prize was a free



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entrance to participate in the 15th Academy of Young Entrepreneurs and the next 5 finalists won a free entrance to BIZ Barcelona event. The goal was to encourage all the participants to take part in these events and facilitate the access to the MOOC finalists by paying them the registration fees. The face-to-face events were an opportunity to meet with other entrepreneurs and benefit from face-to-face resources and social networking beyond the 'Introduction to Entrepreneurship' MOOC.

Introducció a l'Emprenedoria
Tema 1. Introducció i presentacions.
Tema 2. Anàlisi del perfil emprenedor.
Tema 3. Introducció als balanços.
Tema 4. Creació i gestió d'una petita o mitjana empresa.
Contacta als formadors del curs
Mapa del lloc

El curs d'**Introducció a l'Emprenedoria** és un curs obert de 3 hores. L'objectiu del curs és permetre als participants **identificar les seves pròpies fortaleces i reptes com a emprenedors**, i guiar-los en el desenvolupament de **conceptes bàsics relacionats amb les finances i la creació d'una petita o mitjana empresa**.

Blocs temàtics

- Tema 1. Introducció i presentacions.
- Tema 2. Anàlisi del perfil emprenedor.
- Tema 3. Introducció als balanços.
- Tema 4. Creació i gestió d'una petita o mitjana empresa.

Llengua

El curs està disponible en català i en **anglès**, en dos espais diferents.

Participants

El curs d'Introducció a l'Emprenedoria està obert a **qualsevol persona que disposi de 3 hores lliures entre maig i juliol de 2013**.

Avaluació

El curs segueix l'estructura d'una competició (*gamification*), així, tots els estudiants que participin en el curs podran acumular

 
Education and Culture DG
Lifelong Learning Programme

El curs s'organitza en el marc del Projecte Erasmus FP7 "[Stimulating Entrepreneurship through Serious Games](#)".

 
Entrepreneurship through Serious Games

  

Inscripció gratuïta

El curs d'**Introducció a l'Emprenedoria** és gratuït.
Podeu fer la inscripció a través del formulari següent :

Registre per al curs online gratuït

* Required

Nom i cognom *

Figure 1. Enrolment information for the Introduction to Entrepreneurship MOOC.

The enrolment information page was created using Google Sites in order to facilitate the enrolment for end-users having a Google account. The virtual environment of the MOOC is built in a user-friendly MOOC platform called LORE. The platform looks like a social network and enables participants to easily interact through forums. All the activities and games in the MOOC can be completed in a flexible time and space according to the learning rhythm of each participant. Both the LORE asynchronous discussion forums and the *MetaVals* and *HotShot* serious games integration were designed to enable participants to complete the course according to their learning time constraints.



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Figure 1. LORE Asynchronous Discussion.

c) Results and/or conclusions

In the first two weeks of the MOOC, a total of 45 participants accessed the LORE web, but only 30 participants were active during these two weeks. The analysis of the course logs shows a wide diversity of learning times (with a predominance of evenings) that correspond to the time available for adult learners with professional and family responsibilities. Participants were located throughout Catalonia, but mostly in Barcelona metropolitan area.

This experience of the 'Introduction to Entrepreneurship' game-based MOOC has enabled a demonstration of the opportunities this model offers for engaging adult learners in an open course in entrepreneurship. This initial experience has confirmed the flexibility offered by the game-based MOOC, and the engagement in the SGs provided in this short-term MOOC. The participants were engaged in cooperative and competitive game



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mechanics with their teammates using two SGs: *MetaVals* for introducing financial statement analysis (assets and liabilities) and *HotShot* for playing to create and run a small enterprise. The gamification of the 'Introduction to Entrepreneurship' allowed to create a competitive approach among the participants, which competed against each other in the different activities to be part of the MOOC finalists to win free entrances to the 15th Academy of Young Entrepreneurs and BIZ Barcelona, and meet each other face-to-face. The short-term time frame of the course and the competitive mechanics of the course contributed to engage the participants during the duration of the four activities. However, compared to other massive MOOCs, the number of participants of this first edition was limited due to restrictions in the dissemination of the course; which was announced during a one-month period in various entrepreneurial associations and the local chambers of commerce. Based on this initial experience, the 'Introduction to Entrepreneurship' game-based MOOC could be subsequently generalised to a larger audience to test the entrepreneurship-teaching opportunities offered by game-based MOOCs in a larger scenario.

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