TWO DISTINCT COURSE FORMATS IN THE DELIVERY OF CONNECTIVIST MOOCS

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ABSTRACT

Massive Open Online Courses based on the principles of connectivist educational pedagogy known as connectivist MOOCs (c-MOOCs) have been carried out with great success during the last years with hundreds of registered participants. Examples are CCK08 (2008), PLENK2010 (2010), MobiMOOC (2011), EduMOOC (2011), Change11 (2011/12), and LAK12 (2012). Their implementation required conceptual changes in perspective from both "facilitators" (tutors) and learners. They are so novel that much research needs to be done for their understanding and improvement. Basically two very distinct delivery formats have been used:

- **Those that use what's referred to as an aggregator, an emailed daily newsletter, called "The Daily" that captures contributions from tutors and participants mainly from their blogs: Format A.**
- **Those where all events go through a "centralizing" web page or wiki and discussions happen with the use of a mailing list, in most cases using Google Groups: Format B.**

In this paper we study in detail representative courses. From their comparison we establish that connectivist MOOCs delivered with formats A and B share many common features but that their differences are such that the learner's experience and the outcome of the courses are very different depending on the format used.

Keywords: Open online courses, MOOC, and learner experience.

INTRODUCTION

Connectivist Massive Open Online Courses known as c-MOOCs have been delivered since 2008. They are based on the explicit principles of connectivism (autonomy, diversity, openness and interactivity) and on the activities of aggregation, remixing, repurposing and feeding forward the resources and learning.

Although c-MOOCs can enroll thousands of participants, many courses have fewer. "Massive" relates more to the potential for including vast numbers rather than to the actual number of learners.Open refers to "open to students" who pay nothing to participate and can join in part or all of the activities. Although not necessarily all software used is open source, connectivist MOOCs have mostly been hosted using easily accessible sites, wikis, blogs with no cost or hosted within the academic universe. The learner's interactions take place in blogs, tweets and other public online applications.

The announcement of the courses usually happens through blogs, academic websites or professional organizations. c-MOOCs represent an emergent model and present a number of yet to develop opportunities for facilitators and students. They share many common characteristics: the number of lurkers and active participants, dropout rates, the profile and background of participants, the accreditation mechanisms, the role of tutors and facilitators, but differ in some of the tools used which is reflected in the way participants interact within the course. Basically, two formats have been used up to date:

- **Format A: Makes use of a daily newsletter employed by the facilitators and to syndicate posts from participants.**
- **Format B: Makes use of a centralizing web page or wiki jointly with the usage of a mailing list (in most cases Google Groups).**

Examples of courses that have used each of these formats are: i) Format A: CCK08, PLENK2010, Change 11, LAK12, ii) Format B: EduMOOC, MobiMOOC. Some c-MOOCs have used variations of Format A and B, but these represent a very small percentage of those delivered up to date. Digital Storytelling (known as DS106) from the work of Groom & Levine (2011) is an example.

In this paper a detailed comparison of c-MOOCs corresponding to Format A and B is made and important conclusions on learner's behavior and interaction (active and lurkers) are extracted.

RESEARCH METHODOLOGY

The following c-MOOCs have been chosen for the present study: CCK08, PLENK2010, Change11 and LAK12 as representative courses for the c-MOOC format A and MobiMOOC, EduMOOC for format B.

As a researcher I participated in MobiMOOC and EduMOOC, Change11and LAK12. I was an observer during the courses, collecting qualitative and quantitative data through observation of activities and engagement.

A large amount of data exists in the form of surveys and research papers in the cases of CCK08 and PLENK2010. This was used as the source of information.

MOOCs

MOOC is a term proposed in 2008 by George Siemens and Stephen Downes after carrying out the online course CCK08 (Fini, 2009). Today connectivist MOOC is a more appropriate designation since in this way they can be distinguished from other type of massive online courses (Rodriguez, 2012). As stated by Siemens (2012a): "Aside from the surface level distinctions between our MOOCs and the Coursera/EDx model (yes, I'm "othering" them), some important differences exist in the underlying views of knowledge and learning that inform the different MOOC models."The structure of c-MOOCs was inspired by the philosophy of connectivism and they represent an emerging methodology of online teaching. Those who are tutors (facilitators) and participants are required to make conceptual changes in the way they interact and participate. MIT and other educational institutions through initiatives similar to OER (Open Educational Resources) have allowed content of courses to be scaled.

Today social and networking activities and the c-MOOC format allows for the scaling of negotiated knowledge. c- MOOCS are referred by McAuley et al. (2010) as:

"An online phenomenon gathering momentum over the past two years or so, a MOOC integrates the connectivity of social networking, the facilitation of an acknowledged expert in a field of study, and a collection of freely accessible online resources .Perhaps most importantly, however, a MOOC builds on the active engagement of several hundred to several thousand "students" who self-organize their participation according to learning goals, prior knowledge and skills, and common interests."

A c-MOOC is referred as "massive" since it can easily have thousand students simultaneously engaged in the course. The word "Open" relates to several concepts: the software used is in most cases open-source, registration is open to anyone, and the curriculum is open (perhaps loosely structured and it can even change as the course evolves), the sources of information are open, the assessment processes (if they exist) are open, and the learners are open to a range of different learning environments.In relation to c-MOOCs Kop & Hill (2008) state: "In connectivism, the starting point for learning occurs when knowledge is actuated through the process of a learner connecting to and feeding information into a learning community". And: "Connectivism stresses that two important skills that contribute to learning are the ability to seek out current information and the ability to filter secondary and extraneous information". The work of Mackness et al. (2010) concluded that when the theory of connectivism is situated in the practice of a c-MOOC, its network principles of diversity, autonomy, openness, and emergent knowledge are comprised.

FORMAT A COURSES
CCK08, PLENK2010, CHANGE 11 AND LAK12

CCK08, Connectivism and Connective Knowledge 2008, was a c-MOOC facilitated by George Siemens and Stephen Downes. (Fini, 2009). It was offered both formally through the University of Manitoba and also informally with enrollment being open to anybody in the world at no cost. It received 2300 registrations once it was opened as a c-MOOC to those interested to participate but who were not interested in obtaining a credit. A second objective of this course was to investigate lifelong learner's attitudes towards learning network technologies.

Previous to CCK08 the Social Media Open Education course (2007-2008) by Alec Couros and the Introduction to Open Education course by David Wiley took place with high international repercussion (McAuley et al., 2010). A three part survey at the end of the course showed that it attracted adult, informal learners, who were not concerned about course completion. CCK08 was characterized by the use of a variety of technological tools available to the students. Some were selected by the facilitators but as the course evolved participants suggested and used others. "The Daily" was used fundamentally by facilitators to distribute resources and collect contributions from participants.Twelve different tools and technological environments were used, ranging from an LMS (Moodle) to 3D environments (Second Life). The tools required by the course were only a personal blog and a tool to build concept maps. Participant's involvement happened in a number of ways: according to learning styles, personal objectives, and time availability. Which tools they preferred most probably related to the specific user's needs, purposes, and self-organization skills. It was interesting to see that participants made selective choices.

For example they did not use tools with low usability or the most popular social networks if they were considered not relevant to the course. The main factors for the choice of tools were: time constraints, language barriers, and ICT skills.

The Technology Enhanced Knowledge Research Institute (TEKRI) at Athabasca University sponsored and organized the c-MOOC Personal Learning Environments, Networks, and Knowledge (PLENK2010). The course was facilitated by George Siemens, TEKRI, Stephen Downes, NRC (National Research Council of Canada), Dave Cormier, UPEI (University of Prince Edward Island) and Rita Kop from NRC.

It started with 846 participants, reaching 1616 by the final day. The course was intended to clarify and substantiate the concepts of personal learning environments and networks. The research literature was evaluated and analyzed in comparison to their own experience by the course facilitators and participants.

Course materials and content were defined by participants as the course progressed, rather than prior to the course by instructors. A set of selected topics was defined but as a connectivist course they only served as indications for an iterative process of search, practice and reflection. Facilitators encouraged participants to develop their own course supports and to share those with other learners. Concept maps, Google groups, Second Life sessions, in-person meetings, and course-meetups are just a few examples.

The course started in September 2010 and developed for 10 weeks. Included were topics such as: A tour of PLEs and PLNs, Contrasting personal learning with institutional learning, PLEs with LMSs, Understanding the neXt/eXtended Web, PLE/PLN and learning theories, Evaluating Learning in PLE/Ns, Using PLEs successfully (skills, mindsets, and critical literacies), PLE/N Tools-What Exists, What is Being Built?, PLE/Ns and personal knowledge management, PLE/Ns in the classroom (PLE/Ns and blended learning) and Critical perspectives on PLE/PLN. The organization of PLENK 2010 used "The Daily" to provide resources to participants and aggregate their contributions.

Since 2008, George Siemens, Stephen Downes, and Dave Cormier have organized several c-MOOCs with over 10,000 participants in the various courses. This served as a learning experience were they could refine their pedagogical approaches, improve the software (mostly done by Stephen Downes), and developed a research agenda around learning in networks in open online courses.

In 2011 a new c-MOOC was offered: Change 11. The main idea was to amplify the offer of facilitators in the spirit of c-MOOCs, growing in connectedness and diversity.

For this they offered as set of colleagues to help them run a unique course experience. The end result was a c-MOOC with each week being facilitated by an innovative thinker, researcher, and scholar: over 30 of them, from 11 different countries.

The main objective of change 11 was to introduce participants to the major contributions being made to the field of instructional technology by researchers today. Each week, a new professor or researcher introduced his or her central contribution to the field. The course lasted 36 weeks. In their words Change 11 was an "innovative and timely course".

It started in September 12, 2011 and ended in May 2012. Throughout the course participants used a variety of technologies, for example, blogs, Second Life, RSS Readers, UStream. Course resources were provided using gRSShopper and online seminars delivered using Elluminate.

In Change11, 2200 participants registered. 10% was the number of people who signed up for the course but unsubscribed to the newsletter. Around 300 were the contributed feeds (number of blogs submitted by course participants and harvested by the feed reader).

The 36 weeks length of the course affected the course development since very few participants remained active. Approximately more than 95% became lurkers. Expressions such as the following appeared in the participant´s blog posts:" But it's also clear we're winding down because the #change11 conversation hubs have begun to resemble, uh, ghost-towns. Once there were lively debates and intense exchanges. As the winter wore into the spring of the year, though, the tumbleweeds began to tickle."

The LAK12 C-MOOC was Offered By The Society For Learning Analytics Research (SOLAR) In Advance For Their 2nd International Conference http://lak12.sites.olt.ubc.ca
The course extended for 8 weeks from January to March 2012 with the following subjects: week 1: Trends and context: why learning analytics? Why now?; Week 2: What are learning analytics?; Week 3: Cases and examples of implementation of learning analytics analytics; week 4: Smarter curriculum: semantic web, linked data, and learning content; week 5: Privacy and ethics: principles for governing LA use and implementation; week 6: Tools, methods, and levels of learning analytics; week 7: Open Learning Analytics; week 8: Planning: Society for Learning Analytics Research.

A Wiki Was Set Up For Orientation and Contained Help Resources On The Course and Helped To Guide Newcomers As To How To Participate http://lak12.wikispaces.com/Help_Resources
The facilitators were: Simon Buckingham Shum (Open University), Shane Dawson (University of British Columbia), Erik Duval (Katholieke Universiteit Leuven), Dragan Gasevic (Athabasca University) and George Siemens (Athabasca University). The course provided an (generally non-technical) introduction to learning analytics and how they are being deployed in various contexts in the education field. Additionally, the tools and methods, ethics and privacy, and the systemic impact of analytics were explored together with a broad overview of the current state and possible future directions of the field.

The course was intended to interested learners from across the full learning spectrum: K-12, higher education, corporate learning and informal/lifelong learning.The audience benefited from the topics explored and the related implementation issues (in particular, privacy and ethics of analytics).Various technologies were used throughout this course. Blogs, Google Groups, Blackboard Collaborate, Daily Newsletter, Twitter, Diigo, was mostly used to follow and participate in the course. Specialized tools in analytics comprised: SNAPP, CMAP or VUE or Cohere, Many Eyes, NodeXL, R, Gephi and Gapminder. ECD, FactBook, was used as data sources together with open data sources such as data.gov and Guardian data. As the course progressed participants shared additional tools. LAK12 was a course with small number and more expert participants.

The wiki where the initial indications were posted received 350 unique visitors mostly from US (50%), Canada (10%) and UK (7%). 20% belonged to Spain, Netherlands, Australia, Italy, Germany and India.

FORMAT B COURSES: MOBIMOOC AND EDUMOOC.

MobiMOOC started in April 2011 and lasted 6 weeks. It was organized by Ingatia de Waard from the Institute of Tropical Medicine Antwerpen (ITM) in Belgium. Its main focus was on mobile learning (mLearning). The c-MOOC methodology was used to deliver course resources and provide an interactive environment for all participants. Anyone interested could participate freely in the spirit with the ideas behind Open Educational Resources.

A different aspect of mlearning was the focus of each week and it was facilitated by a different mLearning expert. An introductory week was implemented. In this way participants could have the same starting level. In the following weeks themes were included such as: mLearning planning, mLearning for development, leading edge innovations in mLearning, interaction between mLearning and a mobile connected society and mLearning in K-12. Facilitators played more of a role of guides on the side than tutors. They had total freedom so as to put forward as many learning actions and follow-ups as they wanted. Mobile technologies were used by many learners. In this way they accessed the materials and followed the course. This was not a requirement to participate in the course. From the final survey it could be extracted that the main reason to use mobile devices was the location independence afforded by them. They could freely participate from wherever they were located. Temporal independence was also an important factor. Participants could access materials at a time and place which was convenient for them. Another alleged reason for mobile use was simply because it was just there.

A very interesting difference with the other c-MOOCs analyzed in this paper is the fact that two surveys were carried out during the duration of the course: one at the start and one at the finalization (de Waard et al., 2011a). This allowed extracting many interesting aspects on the behavior of participants (de Waard et al., 2011b, 2011c).

The main purpose behind the implementation of this c-MOOC was to test the idea that the combination of MOOCs and mLearning strengthen knowledge construction in general and informal and lifelong learning in particular.

556 participants joined the Google group over the six weeks. 1827 discussion threads were started. 1123 Tweets sent from the #mobimooc hashtag. 335 mLearning links were shared amongst the participants via the social bookmarking site delicious. 32 participants completed the course as memorably active participants. 40 participants completed and submitted the MobiMOOC survey.

EduMOOC was sponsored by the University of Illinois at Springfield as a not-for-credit c-MOOC . It was an 8 weeks course delivered from June to August 2011, on the topic of "Online Learning Today... and Tomorrow". It was convened by Ray Schroeder professor emeritus and director of the Center for Online Learning, Research and Service (COLRS) at the University of Illinois, Springfield (UIS). 2700 participants registered forEduMOOC which was devoted to examining the state of online education and to establish the future trends of e-learning.

The COLRS staff identified key trend areas in online education. The panelists comprised twenty leaders in the field. Moderators of sessions were Professors Karen Swan and Michael Cheney. An e-learning strategist at the sister campus in Urbana-Champaign, Glenda Morgan helped to moderated another of the sessions. Eight topics were selected-one for each week. A Web page was used as the centralizing point of activities. It included details about the topic for each week, including links to timely resources including articles, websites, Twitter hash tags, blogs, wikis and more relevant to the topic of the week. Collectively at the end of the course, a big database was built. On Thursday of each week a live one hour webinar panel discussion was held with experts on the specific weekly topic. Those registering for the course were invited to join the Google Group "eduMOOC" Threaded discussions were started and held via emails to the mailing list.

This was where networking happened among those attending the c-MOOC. After a participant accepted the email invitation to the Google Group, he would set his nickname and email delivery options.Wayne Mackintosh, director of the OER (Open Educational Resources) Foundation proposed and facilitated one of the most active topics: Can we MOOC the OERu (OER University)? It was organized as a spontaneous eduMOOC study group which was hosted using WikiEducator. The most popular tools used were: Google group, eduMOOC Wikispace, Diigo, Facebook, Moodle, scoop.it and paper.li.

COMMON FEATURES

The way c-MOOCs are delivered in Format A and B share many common features but also differs, mostly in the mode participants receive information and in the way their contributions are exposed.

Number of Lurkers and Active Participants and Dropout Rates

Let us first establish an important fact for our future discussion: what it means to be part of and how many participate in a c-MOOC and of these learners how many play an active part and how many take a passive role behind the scenes?. Lurker is the term used for the latter. To participate in an open online course signifies just a registration and the will to realize the course. Participants can take one of two roles: lurker or active. The term lurker is used to define a participant that just follows the course, looks at the recordings, and browses the available course resources. He is mostly behind the scenes waiting for some interesting event.

Table: 1
Number of registered participants for the c-MOOCs analyzed in this paper and information on surveys. Surveys with the exception of MobiMOOC were only carried out at the end of the courses

	Length in weeks	Number of registered participants	Number of initial survey participants	Number of final survey participants
CCK08	12	2300	Was not done	83
PLENK	10	1616	Was not done	40-60
MobiMOOC	6	556	227	40
EduMOOC	8	2700	Was not done	27
Change11	36	2435	Was not done	Was not done
LAK12	5	Few hundreds	Was not done	Was not done

Participants adopt different roles at different times. They can even take part in just one segment of the course. Different factors can influence their degree of participation. For example time pressures caused by daily activities or the fact that it can be delayed for a future occasion. The data was extracted using Google analytics when applied to the home page of EduMOOC. After a few weeks the active participants reduce to less than 10% of those registered (2700 in this case). Not more than a few tens participate in activities like online meetings. Surveys are only responded by a reduced number of those participating as shown in Table: 1.

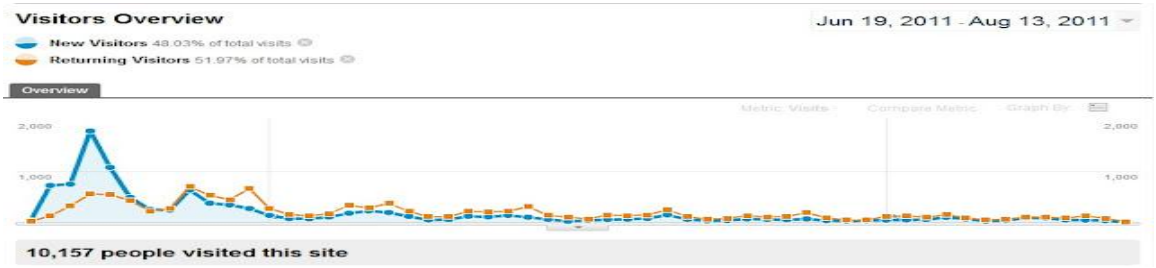

Figure: 1
Shows the number of visits from new visitors (dots) and returning visitors (squares) as defined in the Google Analytics analysis of the main web site in EduMOOC for the period extending a week before the start until one week after.

Participants' behavior in Change11 represented a special case because of its 36 weeks extension. The decay in numbers was even more marked. The last weeks received contributions from less than 1% of those registered. Have more than 90% of registered participants dropped the course? Can one predict how many participants are lurkers who still find of interest to follow the course from the sidelines? Can one quantify the number of lurkers? Previous studies related to lurkers in c-MOOCs can only be found in the work of Kop (2011). Lurking was defined in this study as passive attention, silent participation, and/or self-directed learning. A recent study described below has served to quantify a lower bound for the number of lurkers (Rodriguez, 2012). Figure 2 depicts the number of page views as recorded in the blog from a c-MOOC participant. The arrow in the horizontal axis defines the date for a post to the participant`s blog that had been a lurker until then. His blog had no activity at that time. The contribution posted on that day was announced through "The Daily". The figure shows the number of page views received during the subsequent 5 days. The total number of page views was 1200 corresponding to approximately half of those registered in the corresponding c-MOOC.

Figure: 2.
Pageviews to a blog correponding to a particular post published in blogger.com during a c-MOOC participation. The peak spans five days.

The work of Cormier & Siemens (2010) on c-MOOCs, in reference to the dropout rate and the number of lurkers quoted: "The most disconcerting issue for many educators running an open course is the dropout rate", and Siemens (2012b),"While active participation in our courses declines as the course progresses, subscribers to the Daily increase. I'm not sure what to make of that. If I was getting five emails a week on something I wasn't interested in, I would unsubscribe.

Does that mean we can view Daily subscribers as a) people are still engaged, b) people can't find the unsubscribe link, or c) that we've subjected over 15,000 people to guilt about not being active in MOOCs?" What really happens is that people are still engaged and the most confusing issue to those running a course comes from not understanding that lurkers might compose a high percentage which can be more than 50% of those registered. To precisely quantify this number is impossible.

Learner´S Profile and The Assessment Mechamisms

Employed professionals in education, research and design, and development of learning opportunities and environments compose the core of learners in the c-MOOCs studied. They were teachers, researchers, managers, mentors, engineers, facilitators, trainers, and university professors.

c-MOOCs appeal to people across the traditional dichotomies of gender and age. Many learners were well advanced into their professional career which establishes a certain level of compromise. In MobiMOOC the network between the participants remained active even after the course completion. This point to certain strength in the efficacy the participants felt towards the MobiMOOC community.

The following numbers exemplify c-MOOCs in format A and B. In CCK08 eighty-three people completed the survey (34 females, 49 males). The overall age range of respondents was 28 to 69 years old (M=48 yrs, SD=9.75, N=83). In MobiMOOC participants showed similar characteristics in gender (23 males, 17 females). Ages spread from 21 to 79 (average around 50yrs). One of the major challenges for OOCs is how one assesses what is being learned. The traditional accreditation models become inappropriate.

In the case of c-MOOCs the first problem is how to assess or give credit when all those participating are not doing the same work. The fact that many are peripheral also becomes an issue. Another difficulty arises since the course content changes while it's being developed. Learners find difficult to know if a course will help them and commit. As indicated in most surveys many participants beleive it is not even necessary to have a form of accreditation. A student could use a c-MOOC course before he enrolls in a formal accreditation program. The process of accreditation could even be totally separate from the running of the course. A hybrid model was used in CCK08. Some participants were evaluated and received the corresponding accreditation if successful. The University of Manitoba gave credit for those participants from the University. For that reason they had to complete the course and obtain positive grading of assignments. As discussed by Fini (2009), one student enrolled in the course but was evaluated by her own institution which was not an organizer of the course. In MobiMOOC participants that fulfilled certain requisites, called memorably active participants, received a certificate of participation. No accreditation was given in EduMOOC.

The Role of Facilitators and the Tools Used

What role is assigned to the educator in a c-MOOC ? In most of the analyzed c-MOOCs the term "facilitators" was used for those responsible. An exception was the case of EduMOOC with only one "organizer". In many instances, in MobiMOOC, the concept of "teachers on the side" appeared to describe their role.

The role played by the person who conducts a c-MOOC is important but needs to adjust with respect to access to new content and engagement tools which is now under the control of the learner. Cormier & Siemens (2010) state: "Educators continue to play an important role in facilitating interaction sharing information and resources, challenging assertions, and contributing to learner's growth of knowledge". The following roles are indicated: amplifying (to draw attention to important ideas/concepts), curating (arrange readings and resources so as to give help for the understanding of new concepts), way finding (assist participants to use social networking for their doubts), aggregating (clarify discussions and content via extracting patterns), filtering (help participants to be able to exclude non useful information in the networks), modeling (show successful information and interaction patterns), staying present (be a continual supervisor of the course and activities).

In CCK08 and PLENK2010 the following tools were used: an emailed newsletter, "The Daily" which was managed by one of the facilitators (those subscribed received a daily message with a summary of the key topics of the existing conversation, such as the most interesting posts, usually with comments); Moodle (an LMS); Elluminate (a synchronous web conferencing system); Ustream (a video streaming system); Pageflakes and Netvibes (which are services that allow aggregation of RSS feeds); Facebook (a popular social network service); Linkedin (a social network service oriented to business contacts); Twitter (a micro-blogging service, based on short messages); Ning (a service that allows users to create their own personalized social networks); Second Life (a 3D virtual world in which users act as avatars in a immersive environment and can create their own artifacts); Twine (a semantic web service for collecting and connecting content by topic); Flickr (a popular photo sharing service); Social bookmarking (a generic term for services that allow users to store and share bookmarks on the Web); Conceptual maps (web tools to collaboratively edit conceptual and mental maps).

In PLENK2010 more than 75% of the respondents to the survey indicated that course resources such as the Daily newsletter, Moodle and the wiki were sufficient to understand what the course intended. Change 11 and LAK12 used "The Daily", participant's blogs and Facebook which had 273 registered.

In MobiMOOC the use of social media tools was central using a variety of web-based tools. Different from CCK08, PLEN2010, Change11 and LAK12, the coordinators used only two major web-based spaces: a MobiMOOC Google group (http://groups.google.com/group/mobimooc) for the handling of the mailing list and a MobiMOOC wikispace (http://mobimooc.wikispaces.com) where the course was outlined and resources were shared. Changes were informed via RSS feeds. The Google group centralized discussions. The wiki took the task of providing the online syllabus. YouTube, Twitter, Facebook and Delicious, was used throughout the course for sharing specific content. Other spaces were added by the participants complementing those proposed by the coordinators:

MobiMOOC Crowdmap; MobiMOOC LinkedIn group; MobiMOOC Posterous blog; the Zotero MobiMOOC group and a MobiMOOC map. In many cases the content was also accessed via mobile devices.

The tools used for EduMOOC were comparable to those used in MobiMOOC. A centralizing web page hosted in Google (http://sites.google.com/site/edumooc/home) where the course was outlined and new announcements made.

This web page had to be accessed daily. A mailing list was set up as a Google group and all discussions happened there. Participants received emails on different threads and could easily comment or start a new one.

LURKER AND ACTIVE PARTICIPANT'S BEHAVIOR

Format A

Most c-MOOCs using format A have employed an emailed daily newsletter named "The Daily" which basically aggregates contributions from all blogs (or other resources) from participants tagged in a certain manner. "The Daily" was used in all the c-MOOCs included in the present study: CCK08, PLENK2010, Change11 and LAK12. With the use of this format it is nearly impossible for a participant or tutor to sense the presence of other learners with the exception of those that are active. Those that participate as "active" usually present their contributions in posts in their own blogs which are announced through "The Daily". They possess a certain degree of expertise in the course domain and confidence in exposing their writings.

As established before, the number of lurkers at any time in any c-MOOC can be as high as 50% of those registered. In this format lurkers seem to restrain to make any kind of appearance. They will burst viewing/reading a blog if that post (announced through "The Daily") is of interest. But will not, in most cases, formulate a contribution or make evident their existence to the rest of learners. These c-MOOCs follow in part a pattern similar to that described in Cormiere & Siemens (2010): "the MOOC mirrors a discussion at a conference, in a research lab, or in a workshop".

There are practically no studies on lurker's behavior in c-MOOCs with the exception of the work of Kop (2011) in PLENK2010, where lurker's behavior was tracked by implementing special surveys and other strategies. The final survey on lurkers sampled 74 participants over 1616 registered (4.5%).

Change 11 was a 36 weeks long c-MOOC which used format A. Every week a new facilitator introduced and tutored the corresponding new topic. He announced his organizational scheme and presented the introductory material. "The Daily" fundamentally aggregated contributions from blogs from active participants. The Monday issue had the introductions from the new facilitator and posts related to the previous week. On Wednesdays a synchronous online meeting was organized and the weekly topic debated with only a small number of attendees. Within this scheme it was very unlikely that a lurker would make a contribution and become active.

Facebook group which gathered around 10% of participants allowed some interaction although again, most contributions came from those who were active within "The Daily". The behavior of participants in other studied c-MOOCs within format A followed a similar pattern.

Format B

c-MOOCs utilizing format B, employ a "centralizing" web page or wiki which is used by the facilitators for announcing all activities and a mailing list open to contributions from participants. Google Groups has been used for this purpose where mostly all discussions and announcements from participants are made.

At the time of registration participants have the option of selecting to receive;

- **no emails,**
- **an abridged email version (one summary email of new activity per day)**
- **a digest email (with up to 25 full new messages in a single email),**
- **an email message as it is sent.**

Threads on different subjects are proposed and all participants in the mailing list continuously receive an email with the new contributions to the different threads.Examples of c-Moocs using this format are Mobimooc and Edumooc.

Since adding an opinion or just a comment to some discussion thread of interest does not need to show expertise, dormant lurkers become active just in those occasions. In this way other participants get to know of their existence. This occasional appearance of lurkers makes them visible and a sense of community is established.

This second format is closer to the idea of "eventedness" described by Cormier & Siemens (2010): "The course members resemble the people in a corner having an in-depth discussion that others can choose to enter. Enough structure is provided by the course that if a learner is interested in the topic, he or she can build sufficient language and expertise to participate peripherally or directly. The more people who walk over to talk, the better the chance will be that people will contribute to the conversation".

Format B establishes a dynamic interaction creating a collaborative environment. The following example is a description of a collaborative action triggered during MobiMOOC. A simple invitation through an email thread to write a joint collaborative paper related to the MobiMOOC course was sent and generated the assembly of a group of seven participants. The outcome up-to-date has been a paper presented in Beijing, China at the " mlearning 2012 Conference" (awarded the best conference paper) and a series of papers published in the most prestigious research magazines related to online education (de Waard et al., 2011a, 2011b, 2011c). Until the conference none of the authors knew each other in person.

DISCUSSION AND CONCLUSIONS

Since 2008 connectivist MOOCs emerged in the online education landscape and continue to develop. Their "openness", as described above, has even allowed the elaboration of collaborative papers between totally independent participants from 6 different countries. The open feature of c-MOOCs offers many opportunities for the interaction between participants. In most cases the facilitation is guided by key voices in education. c-MOOCs represent a novel educational model presenting challenges to tutors and participants. They offer an important contribution to online courses. As they evolve, the ways of delivery should improve becoming more consistent and predictable. For the learner the c-MOOC presents a new opportunity of becoming part of a learning community.

They alter the relation of learner and tutors giving huge weight to the interaction between the communities.

c-MOOCs are energetic and follow a nonlinear pattern. Students are presented with multiple data streams. There is input from many sources: discussion boards, tweeter, Google+, and many more. A learner is exposed to a huge amount of information that might even seem to represent an overload but in reality serves to stimulate the learners interest. If he feels overwhelmed he might retreat to the lurker status but stays on the side waiting to find a proper occasion to intervene.They are also very different in nature but share many common features. The different delivery formats might have very different consequences to the way the learner behaves.

In the present study we focus on different representative c-MOOCs and make a comparative study. We identify that two different delivery formats have been in the great majority of c-MOOCs hosted used up to date. CCK08, PLENK2010, Change 11 and LAK12 are included as representative for the use of Format A and MobiMOOC and EduMOOC for format B. These MOOCs are illustrative of many held up to date with hundreds of learners simultaneously involved. Their subjects ranged from connectivism and connective knowledge, personal learning environments networks and knowledge to the more technically involved on mobile learning. The comparison allows us to extract valuable conclusions in particular as to the behavior of learners experience while attending the course.

In Format A, what is called an aggregator, a daily newsletter (called "The Daily") is used to communicate the different blog posts or other contributions made by tutors and participants. If a participant finds something of his interest he will most probably continue the interaction within the realm of the particular contribution extracted from the newsletter. Although the possibility exists to comment on that contribution within the newsletter this does not often happen. This isolates the discussion from other participants. The dynamics of Format A makes some students retreat and become "permanent" lurkers and most of the input comes from very few more "advanced" participants.

Some c-MOOCs in Format A like Change 11 which lasted 36 weeks had a different facilitator assigned each week. This meant that a very different way of organization was proposed on a weekly basis. In one of the most advanced weeks the facilitator made a special effort so as to revert the decline in participation. The study theme was motivated a few weeks before catching the interest of participants. Still, the pattern of participant's behavior was exactly the same as for all other weeks: those active remained very few and most of participants remained on the side as lurkers. There was only an increment in the number of attendees to the Wednesday synchronous meeting.

In Format B, all information on the course had to be looked in either a webpage (EduMOOC) or a wiki (MobiMOOC). At the same time all participants were offered to register to a mailing list (Google group in both cases that we studied). Anyone could start a new thread and send it to the list. If someone wanted to just make a comment, a reply to that email would appear to all in the list.

In this way many participants made very small comments or contributions. Their lurker status would change to active for a few days and then vanish again from the active scene. This allowed identifying many new voices.

The interaction in many instances became rich and dynamic. Although the more "expert", active participants had most of the starting threads one could sense a vibrant community interacting. From the detailed comparison of c-MOOCs corresponding to Format A and B we extract the following conclusion: although many features are similar the particular delivery mode format used has a big impact in the way participants, both active and lurkers, behave during the course. Connectivist MOOCs are a new, innovative and successful educational proposal that needs to be investigated further and their delivery format improved.

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