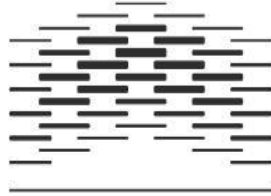




TALLINNA ÜLIKOOL



OSLO AND AKERSHUS  
UNIVERSITY COLLEGE  
OF APPLIED SCIENCES



UNIVERSITÀ DEGLI STUDI DI PARMA



Education and Culture DG

ERASMUS MUNDUS

Carla Colombati

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## **User Experience (UX) and user engagement: a case study**

Supervisor: Anna Maria Tammaro

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## **Abstract**

**Title:** User Experience (UX) and user engagement: a case study - **Carla Colombati**

### **Aim and objectives**

The aim of the study is to understand to what extent User Experience strategies may positively impact users' perception in a digital context such as the E-learning ones given by MOOCs, and to what extent User Experience is mostly enhanced by the technical and, or, human factor. The objectives are to discover if User Experience strategies allow and enhance users' engagement in a digital learning context such as a MOOC, and to identify and clarify User Experience key drivers that boost the use of a digital learning environment such as a MOOC.

### **Background**

E-learning environment such as MOOCs are on the cutting-edge nowadays. Another topic is nowadays on the cutting-edge and it is related to User Experience strategies that can boost users' in the human and technical (digital) interaction with a context or a product. The User Experience may be positively exploited in MOOCs to set users' engagement in the E-learning experience.

### **Methodology**

The project research has chosen the single instrumental case study as qualitative research method developed with an online questionnaire, participants' interactions observation and document analysis as data collection technique.

### **Discussion**

The research has explored the impact of User Experience strategies over participants' engagement and focused on the preferred key drivers for their experience

### **Conclusion**

Participants have expressed their enthusiasm for all learning activities in which the interaction had been achieved through human assistance or review. The overall class has played a great role to enhance the learning experience according to the connectivist approach but the greater role have been attributed to author, co-authors and tutor. So the User Experience strategies still recall the importance of the human side in users' engagement.

### **Keywords**

e-learning; massive open online course; mooc; user Experience; ux; users' engagement

## Declaration and Plagiarism disclaimer

I certify that all material in this dissertation which is not my own work has been identified and that no material is included for which a degree has previously been conferred upon me.

Carla Colombati \_\_\_\_\_

(Submitted electronically and unsigned)

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“For a more useful and understandable world”

(Craig M. MacDonald,  
Pratt Institute School of Information, New York, U.S.A.)

“In a world where the user is king/queen,  
UX can only increase in importance”

(Graham Walton,  
Loughborough University Library, Loughborough, UK.)

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## List of abbreviations

cMOOC	Connectivist Massive Open Online Course
DLs	Digital Libraries
DLLPP MOOC	Digital Library in Principle and Practice MOOC
EMMA	European Multiple MOOC Aggregator
HCI	Human Computer Interaction
MOOC	Massive Open Online Course
UE	User engagement
UX	User Experience
xMOOC	traditional University Massive Open Online Course

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## **Chapter 1: Introduction**

### **Background**

E-learning environment such as MOOCs are on the cutting-edge nowadays. MOOCs enable participants' to achieve specific learning outcomes useful for personal and professionals goals. Another topic is nowadays on the cutting-edge and it is related to User Experience strategies that can boost users' in the human and technical (digital) interaction with a context or a product. The User Experience may be positively exploited in MOOCs to set users' engagement in the E-learning experience.

### **Motivation**

The researcher has chosen to study User Experience and user engagement in a MOOC for specific different reasons, personals, professionals, and intellectuals, expressed by these following words:

Every researcher begins with certain goals and a substantial base of experience and theoretical knowledge, and these inevitably highlight certain problems or issues and generate questions about these (Maxwell, 2005, p. 65).

The researcher describes which motivations are under the research topic.

#### 1. Personal reasons

Personal reasons (called goals by Maxwell, 2005, pp. 16-21 or touchstone by Strauss & Corbin, 1990, pp. 35-36) cover great importance for “motivation” and may influence the methodology choice too.

During the DILL (Digital Library Learning) Master internship at Loughborough University Library, the supervisor Dr. Graham Walton involved the researcher in a project study about *Loughborough University Library's digital services: exploring the User Experience (UX)*. The topic of User Experience became of a great interest for her so that she wanted to continue in her country the research with an Italian specific context to explore. In the following period it was an issue to identify a Library context to investigate according to the User Experience and it seemed to her that the specific User Experience topic was not applied to digital libraries by the side of social research. She was aware the User Experience was investigated by the technological side, being the Human Computer Interaction (HCI) its origins, but specific studies in the libraries fields, taking care more of users' interaction within the Information Behavior theory embedded, were found mostly in foreign studies and in some Italian studies. So, further researcher's steps have been to get acquainted with some interesting studies and researches led abroad (Connaway, 2013a, Connaway, Hood, Lanclos, White, Le Cornu, 2013, OCLC, 2014, Walton, 2015, Burn, Cunningham, Waller, Walton, & Walton, G., 2016, MacDonald, 2015) and to study Italian studies about the users' interaction within digital library services or users' information behavior in the digital era (Rogani, 2007, Tamaro, Luzzi & Casati, 2006, Tamaro, 2006, 2008, 2015,

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Consonni, 2010, Dobрева, O'Dwyer & Feliciati, 2012, Feliciati, 2012, 2014, 2016, Feliciati & Alfier, 2013a, 2013b, 2017).

The opportunity to explore the topic arrived with the *Digital Library in principle and practice* MOOC<sup>1</sup> which matched with the researcher interests on Digital Libraries, E-Learning, Open Education, MOOCs, User Experience and the users' engagement in completing the MOOC. The researcher found that the specific context of the MOOC, with the topic of the Digital Libraries, participants coming from a wide range of background and professions, users' interaction with the overall platform, learning documents and especially with the human interactions too, could be a case study to get an insight about the User Experience in a E-learning environment such as a MOOC, this last mentioned so on the cutting-edge nowadays.

## 2. Professional reasons

According to Maxwell (2005, pp. 21-25) a researcher is pushed also by practical goals which enable him/her in “*accomplishing something*”. In that case she wanted to get acquainted with User Experience not only in theory but also in practice.

The researcher's first aim was to improve the use of User Experience in the Italian academic environment with a specific regard to digital libraries context. As she

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<sup>1</sup> The Digital Library in principle and practice MOOC, gusted by EMMA (European Multiple MOOC aggregator) Platform, was led by Prof. Anna Maria Tammaro and others co-authors: Liliana Melgar, Eric Boamah, Getaneh Alemu, Elena Giusti. The MOOC started on the 12th April 2016 and ended on the 31st July 2016 but it was left open until the 2<sup>nd</sup> edition of February 2017.

worked in an academic library she was aware of users' behaviors and feelings when searching through digital tools for information and documents useful and relevant for their needs. Users' research experience in technological-digital context has opened a new frontier to investigate. In foreign countries many studies focus on this topic (Connaway, 2013a, Connaway, Hood, Lanclos, White, Le Cornu, 2013, OCLC, 2014, Walton, 2015, Burn, Cunningham, Waller, Walton, & Walton, G., 2016, MacDonald, 2015) and in many libraries abroad the User Experience Librarian has become a new professional role. In the academic field learning has moved on E-learning and in Open education settings to involve a greater number of users<sup>2</sup>, academics, and courses. This new landscape was considered a further, rich and challenging point of view to investigate User Experience in the E-learning environment, even more that around 2014-2016 in the Italian academic context new MOOCs platforms were launched such as EduOpen and EMMA (European Multiple MOOC Aggregator).

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<sup>2</sup> In this case the researcher has preferred to use the term users, which will be used together with participants, instead of students, because the new educational environment encompasses a wider classification of enrolled people (professionals who need to achieve further titles or competences, students who need to get a degree, and those who simply desire to stay informed).

### 3. Intellectual reasons

Maxwell (2005) enumerates five intellectual goals to undertake a qualitative research which are useful for “*understanding* something”:

1. “Understanding the *meaning*, for participants in the study, of the events, situations, experiences, and actions they are involved with or engage it” [...].
2. “Understanding the particular *context* within which the participants act, and the influence that this context has on their actions” [...].
3. “Identifying *unanticipated* phenomena and influences, and generating new, “grounded” theories about the latter” v.
4. “Understanding the *process* by which events and actions take place” [...].
5. “Developing *casual explanations*” [...] (Maxwell, 2005, pp. 22-25).

User Experience and MOOCs theories, studies and cases have an extensive range of views and applications. Recently the two topics have been stressed together to get some data related to MOOCs explosion and users’ involvement but there are still some misunderstanding. The researcher thought has been that the Library and Information Science background could be useful to get another insight to the two topics above described. Librarians’ reference expertise is still relevant and useful for users who may require help for searches, according to their background of lack of knowledge. As librarians’ reference competence is still relevant (MacDonald, 2015), it would be useful also to exploit their competence to add value to

digital services (digital libraries, e-learning platforms) to support, address and improve users' interactions with technological resources.

The researcher thought has been led by the hope to explore the cited MOOC and to get data to *understand* the impact of User Experience over the MOOC and users and to *accomplish* further studies with other colleagues in the Italian context still in the same topic and with similar cases.

### **Research question, aims and objectives**

The researcher has planned an investigation to have an insight of the issues that users had encountered in their whole e-learning experience in the MOOC, especially to understand which elements have been really useful to engage them and to explore which User experience strategies could improve the best user engagement.

### **Statement of the problem**

The MOOC has presented many users' interaction sides: a. the connectivist learning one; b. the technical one (given by the platform and other tools); c. the human interaction one (the whole class with the author, co-authors and the tutor). Along the e-learning experience users have managed many constraints and have been supported to face them mostly by the main author, co-authors and tutor, less by the overall class, and they have felt to be highly engaged by the overall experience so that the MOOC outcomes and conclusion could be achieved. The

user engagement has come out as the main obstacle in the MOOC and this topic is the core of the research linked to User experience strategies.

### **Research question, aim and objectives**

More than one aspects have emerged but the underlying theme focuses on users' engagement in the MOOC and how this challenge can be satisfied with User Experience strategies.

#### **Research question 1**

How do participants perceive the User Experience strategies as key drivers for their engagement in the *Digital Library in principle and practice* MOOC?

#### **Research question 2**

How do User Experience strategies impact the users' engagement in the *Digital Library in principle and practice* MOOC?

#### **Aim**

To understand to what extent User Experience strategies may positively impact users' perception in a digital context such as the E-learning ones given by MOOCs, and to what extent User Experience is mostly enhanced by the technical and, or, human factor.

#### **Objective 1**

To discover if User Experience strategies allow and enhance users' engagement in a digital learning context such as a MOOC.

#### **Objective 2**

To identify and clarify User Experience key drivers that boost the use of a digital learning environment such as a MOOC.

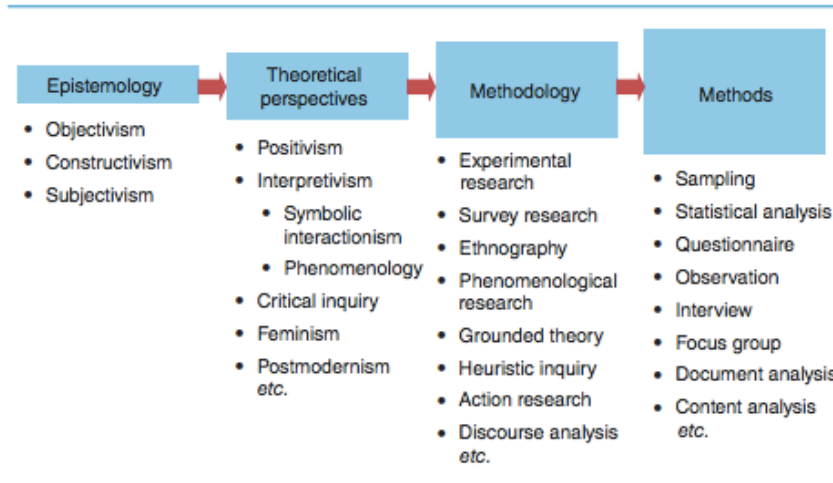


## Methodology

The researcher has found the constructionism epistemology useful for her purposes for many reasons, such as:

Constructionism is not a unified program. [...]. It informs a lot of qualitative research programs with the approach that the realities we study are social products of the actors, of interactions, and institutions. Seen in this way, knowledge organizes experiences, which first permit cognition of the world beyond the experiencing subject. Experiences are structured and understood through concepts and contexts, which are constructed by this subject (Flick, 2009, pp. 69-70).

Under the constructionism epistemology, interpretivism assumes the role of theoretical perspective because helps to understand the reality and to construct knowledge (Gray, 2014, p. 23).



**Figure 2.2** Relationship between epistemology, theoretical perspectives, methodology and research methods

Source: Adapted from Crotty, 1998

Gray, D. E. (2014). *Doing Research in the Real World*, p. 19

The underlined framework suggests the qualitative research approach to undertake the study to get answers to the research questions, aim and objectives. The qualitative research implies an overall understanding of participants involved in a specific context and process. The researcher has chosen the single instrumental case study as qualitative research method for the iterative procedure that the method implies and because it is useful to get an “insight into an issue or to redraw a generalization” (Stake, 2003, p. 137).

Data collection technique is the fourth step of this research design – 1st. constructivism epistemology, 2nd. interpretivism theoretical perspective, 3rd. qualitative research methodology with a single and instrumental case study. Triangulation in case studies enable to reduce threats (Maxwell, 2005, p. 93), to acquire a holistic view and to get specific insights too in a rich and complex context. The triangulation in the *Digital Library in principle and practice* case study has been accomplished with an online questionnaire, the participants’ interaction observation and the document analysis.

The sample was given by the *Digital Library in principle and practice* MOOC participants, considering teacher and tutor too for the document analysis and participant observation.

The data collect have been analysed recurring to the “constant comparative analysis”

### **Limitations of the research and bias**

The researcher has faced many issues to start the investigation and to analyse data. The great challenge has been to focus the topic, which still has a broad meaning,

according to each discipline it is embedded in, and to examine the several User Experience strategies. The MOOC has had an impressive participants' interactions and documents productions, so that the researcher has established some choices to limit the overall document analysis to those considered relevant. Bias are related mostly to "misinterpreting" the data collected (Maxwell, 2005, pp. 108-114, pp. 209-235) or researcher's unawareness or inexperience and the need to repeat the research with multiple case study (Connaway & Powell, 2010, p. 80).

### **Ethical considerations**

The researcher has provided an anonymous online questionnaire assuring confidentiality to participants and to limit the interaction with the participants of the MOOC.

## **Chapter 2: Literature review**

### **Search strategy**

The search strategy has been undertaken during the whole internship and thesis stages. The researcher has taken care of the previous literature review already done to accomplish her Project work at Loughborough University Library for the DILL Master internship.

The main keywords exploited have been: “user experience”, “user engagement”, MOOC, cMOOC, connectivism. These keywords have been searched alone and together, adding the filters, when possible, to limit the results to social sciences and humanities fields. Citations, downloading, pertinence, and newness have been the preferred criteria to choose among all documents. The databases exploited were mixed, commercial and free, citational ones such as Scopus and Web of Science, and citational search engines such as Google Scholar and Google Books too. References have been looked up in bibliographic subject database too: LISA (Library and Information Science Abstracts), Library, Information Science and Technology Abstracts (LISTA), Library and Information Science Source (LISS), E-prints in Library and Information Science (E-LIS), EBSCO Host Research database, Emerald journals collection, ACM DL Digital Library. The references have been added in an excel file converted in a google sheet using these yardsticks: a separate sheet labeled with the search plus the keyword/keywords (for alone keyword or mixed keywords) adding a citation information and the date of the search; the selected references have been added in a new sheet, the final one. At the beginning the researcher has used Mendeley, that she already knew,

but she has preferred to use the sheet system and to work manually on referencing according to the American Psychological Association's (APA) style chosen.

All the commercial databases have been accessed through DILL Master Universities' resources (Oslo and Akershus University College of Applied Sciences - HiOA, Tallin University, University of Parma) that have been really useful for researcher's bibliographical needs.

The researcher has found a great challenge to not get overwhelmed with all concepts, theories and frameworks which could be covered in the master thesis: these rich entries have been left in the thesaurus for further investigations. Here she has presented only an overview about Massive Open Online Courses (MOOCs), user engagement and User Experience (UX).

## **Massive Open Online Courses MOOCS**

### **MOOCs background**

“Open online courses” developed their setting around 2007 and they represented a great change in the educational environment which turned from “a content-centered model towards ‘socialization as information objects’” (Fini, 2009, p. 3 and Siemens, 2009, as cited by Fini). Open Online Courses, the prototypes of Massive Open Online Courses (MOOCs), rapidly increased their impact in Open Online Learning and presented characteristics which were key drivers and challenges in the meanwhile, still present today: a new learning model, a great number of participants, a different way of interaction among teachers and participants, classes composed by learners with different backgrounds and

professional expertise and different learning outcomes (Fini, 2009, p. 3). Dabbagh et al. (2016) in few words describe the essential components of MOOCs:

The term MOOC was coined in 2008 by Dave Cormier to describe the Connectivism and Connective Knowledge (CCK08) course and highlight the key characteristics of this new pedagogical model.

*Massive* —there is no limit on attendance;

*Open* —free of charge and accessible to anyone with internet connection;

*Online* —delivered via the internet; and

*Courses* —structured around a set of goals in a specific area of study

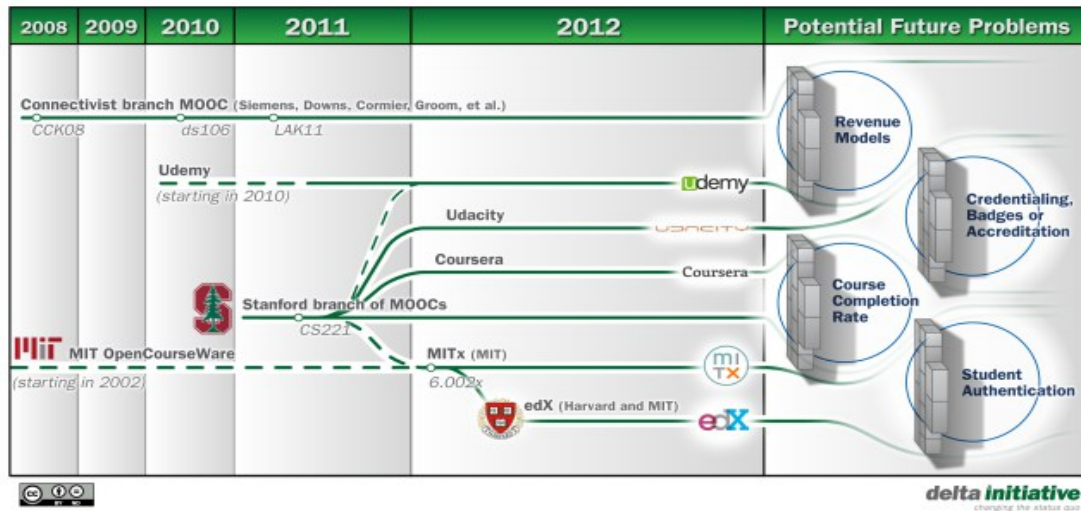
(Fini 2009; McAuley et al. 2010, as cited by Dabbagh et al. 2016, p. 2).

In *The MOOC guide* (Downes, s.d.) an easy MOOC timeline history helps to follow this phenomena in its development: in 2007 the *Wiley Wiki* was the prototype of educational online resource which allowed participants to interact in the learning process adding themselves content too in a wiki platform; in 2007 Alec Couros offered online synchronous courses (webinars) about *Social Media and Open Education* using a wiki space; in 2008 George Siemens, from Athabasca University, and Stephen Downes, from the National Research Council, led an online course about *Connectivism and Connective Knowledge (CCK08)*. This specific course is considered the MOOC preliminary example because: its class was formed by 25 students belonging to the University of Manitoba, paying students, and about 2200 online students who could participate freely and from a

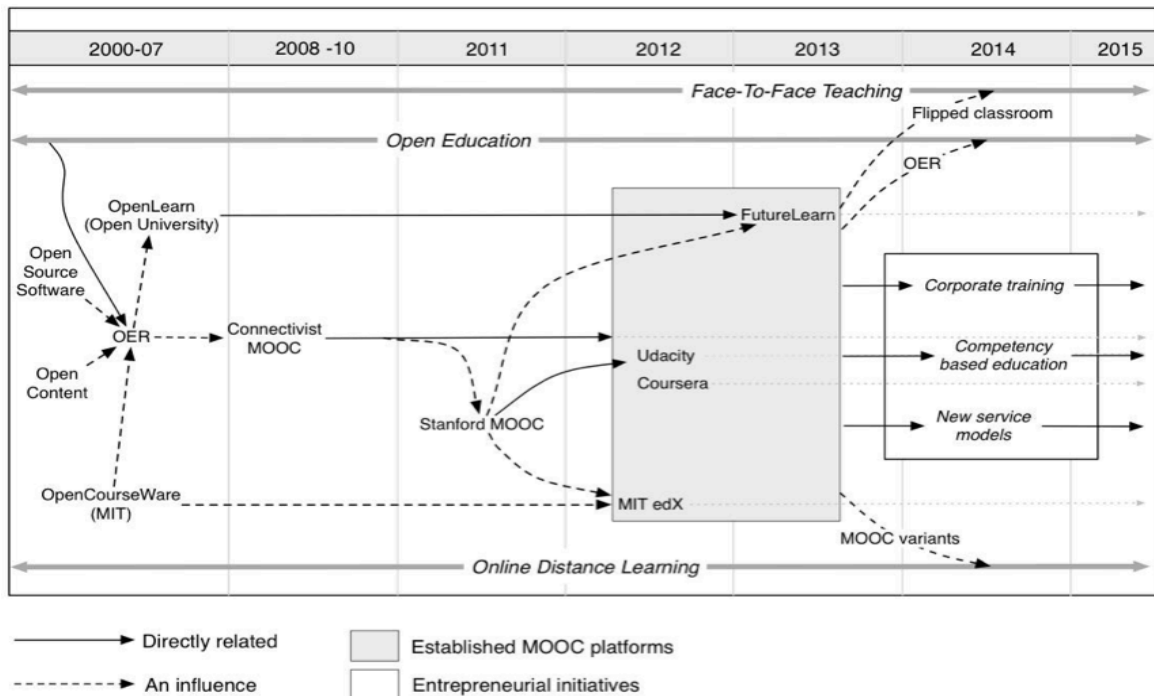
wide range of educational and professional backgrounds; the learning system and pedagogy was set to embed Open Educational Resources (OER) with contents developed by the overall class by means of various collaborative tools and in online platforms which allowed an asynchronous learning too. In 2008 Cormier called these kind of courses MOOCs, after the talk he had with Siemens to have insights about the *CCKK08* course.

In 2011 MOOCs spread in education environments, especially in universities thanks to Thrun and Norvig who offered a course about *Artificial Intelligence* at the Stanford University. This course got many participants (160,000 students) and it was the tipping point for several students, for Thurn himself who involved his forces in Udacity, a platform for technologic and science MOOCS, and for MOOC platforms. The other MOOCs platforms came quickly after: Coursea, edX, and today the phenomena as reached a great impact over educational environments thanks to new institutional and inter-institutionals platforms which are continuously delivered (Morrison, 2013).

Here below the figures depict the MOOCs and Online Education timelines:



Hill, P. (July 24, 2012). *Four Barriers That MOOCs Must Overcome To Build a Sustainable Model*. Available at: <http://mfeldstein.com/four-barriers-that-moocs-must-overcome-to-become-sustainable-model/>



Yuan, L. (May 11, 2015). *MOOCs and Open Education Timeline (updated!)*. Available at: <http://blogs.cetis.org.uk/cetisli/2015/05/11/moocs-and-open-education-timeline-updated/>



## **MOOCs models**

In 2012 both Siemens and Downes wrote their opinions about the spreading of platforms and about the pedagogical theories, giving different insights. The two researchers, who led together the first MOOC, expressed divergences about the models and pedagogic theories (Siemens, 2012, Downes, 2012).

MOOCs development is tied to its pedagogical model and to the learning environment too: the cMOOCs model, which came as the first one, and the xMOOCs, which is the last on scene. Both models have been theorized by Siemens and Downes to explain the difference among them, and both have given a particular significance to the Connectivism or Connectivist theory.

The cMOOCs model has its origins in the Connectivism learning model developed firstly by Siemens, and in a second moment by Downes too. In particular Siemens (2005) has invented the word to explain this learning theory in which individual, network, knowledge and organizations are the main points:

The starting point of connectivism is the individual. Personal knowledge is comprised of a network, which feeds into organizations and institutions, which in turn feed back into the network, and then continue to provide learning to individual. This cycle of knowledge development (personal to network to organization) allows learners to remain current in their field through the connections they have formed (Siemes, 2004).

cMOOCs has increased the network learning idea with digital platform tools development too (tools such as blog, wiki-spaces, video lectures, forum, quiz assignment, other kind of assignments, project works, conversations, peer

assessment, newsletters, e-mails, social networks). In this creative learning environment the network works with community interactions and contents generated, empowering knowledge. Usually cMOOCs platform are linked to individuals or to organizations which use open source web platforms, and exploit strongly digital tools and social networks, and any other relevant learning or communicating technical tool (Morrison, 2013, Universities UK, 2013, Espada, Rodriguez, Garcia-Diaz, & Crespo, 2014, Baturay, 2015, Dabbagh & el, 2016). The xMOOCs model came after with peculiar and different characteristics and was examined by Siemens and Downes too. According to Siemens xMOOCs differ from cMOOCs in the way they manage knowledge: in cMOOCs knowledge is created while in xMOOCs knowledge is replicated (he used the terms “knowledge duplication”, Siemens, 2012). xMOOCs are often embedded in high level universities with all related services, belonging to proprietary web platforms, and exploiting a traditional and cognitive learning (Siemens, 2012). Maybe for Siemens the xMOOCs presence on the e-learning scene was quite normal, in a blog post he underlined some characteristic of both models and ended stating “MOOCs are really a platform”, without giving emphasis to one model over the other one (Siemens 2012; see also Downes, 2012, at p. 63 where he argues about Siemens’ “vagueness”, or Downes, 2013 about “What the ‘x’ in ‘xMOOC’ stands for”; see also Morrison, 2013, University UK, 2013, Espada, Rodriguez, Garcia-Diaz, & Crespo, 2014, Baturay, 2015, Dabbagh & al., 2016). According to these statements in cMOOCs the learning process is fostered by participants’ networks, collaboration, actions and practices using various tools. In Cormier and Siemens, in and Downes works (Cormier & Siemens, 2010, Downes,

2012) also user engagement is considered an important key driver to boost their participation in the MOOC.

## **User Engagement UE**

### **User engagement in the technological context**

In their works O'Brien and Toms have studied user engagement in technological context and they have tried to propose a user engagement evaluation framework. User engagement are two terms related to "peoples' experiences with technology, specifically the user interaction with a system. It is called also "user-sytem interaction" and it is considered "a desirable—even essential—human response to computer-mediated activities" (Laurel, 1993, p. 112 as cited by O'Brien, & Toms, 2008, p. 939). In 2008 they find that user engagement within a technological context has these:

four distinct stages: point of engagement, period of sustained engagement, disengagement, and reengagement [...] (O'Brien, & Toms, 2008, p. 939),

and they propose:

a definition of engagement [...] as a quality of user experience characterized by attributes of challenge, positive affect, endurability, aesthetic and sensory appeal, attention, feedback, variety/novelty, interactivity, and perceived user control (O'Brien, & Toms, 2008, p. 939).

They underline another focus which is present in italian studies too (Alfier & Feliciati, 2017) and Rosati (2017): engagement study relies on "engaging

interactions” and this relation interests “both users and developers of computer systems and applications” (Blythe, Overbeeke, Monk, & Wright, 2003, as cited by O'Brien, & Toms, 2008, p. 939).

### **Users engagement in a MOOC**

MOOC attract massive participant but the course completion does not match with the same of all enrolled. De Freitas et al. (2015) sum up some findings about MOOC key drivers and issues. As key drivers they list: short duration; massive participation; different participants background; extra formal learning; blended learning, combining face-to-face video lectures or video conference so that synchronous communication is taken in account too (by De Freitas, Morgan, & Gibson, 2015, p. 460).

In the same study they rate as extremely important for users engagement these outcomes:

- Game-based or gamification elements.
- Interactive digital content.
- Quizzes and immediate feedback.
- Correct difficulty level personalised to student.
- Link to longer course and deeper learning materials.
- Real world challenges and testing (De Freitas, Morgan, & Gibson, (2015, p. 455).

The focus takes the direction to build “student-centred” MOOC to boost their engagement and to pursuit their “retention” (De Freitas, Morgan, & Gibson, 2015, p. 457).

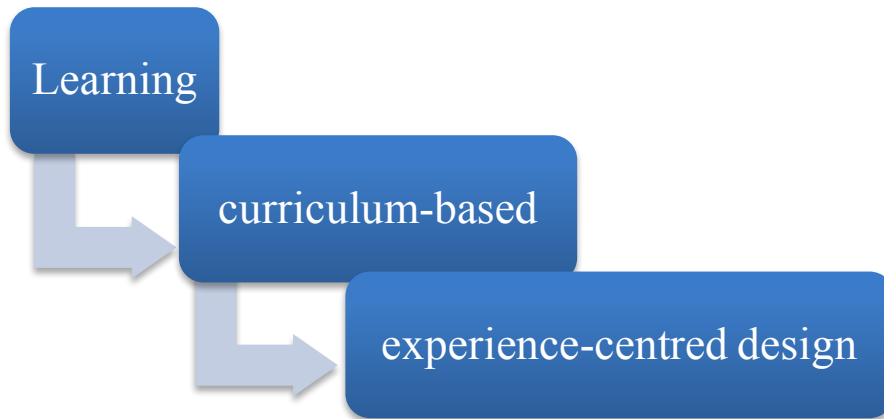
In the study they emphasize issue too, the quality of learning and the way to manage retention and completion. Accessibility and usability play a great role to retain customers, social interactions, such as “interactive assignments”, peer assessment De Freitas, Morgan & Gibson 2015, pp. 460-4624)

De Freitas, Morgan & Gibson present a rich insight of MOOC issues, key drivers and they elaborate a new MOOC model too:

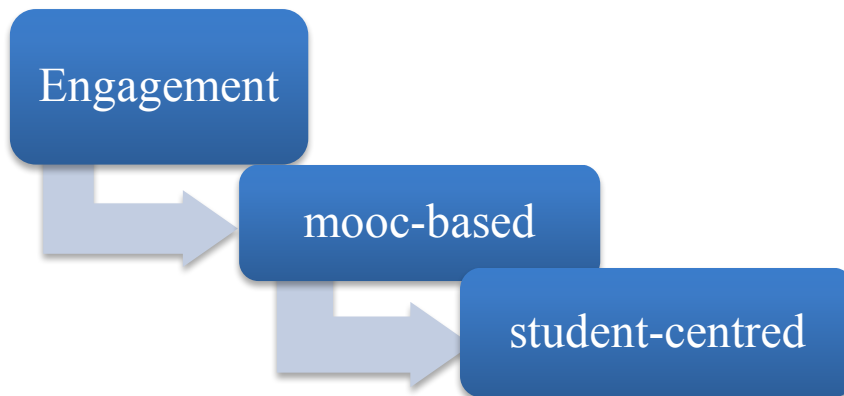
access to course materials, notes and assignments, webinars, video lectures, discussion fora, other social software support such as Twitter and Facebook groups, translations of some content into different languages, quizzes for assessment, and automated assessment tools. But to ensure retention rates are higher, future MOOCs would do well to integrate a suite of additional tools, including automatic translation tools, data capture learning analytics, and games and gamification elements to enliven course materials and assignments, as this would likely have a significant positive impact upon retention [...] the authors propose a ‘third model’ (beyond xMOOC and cMOOC) for MOOC and online learning development, using one-third of the experience presenting video and audio materials, one-third devoted to activities including interactive media as well as quizzes and assignments, and one-third of the time for social interactions. (De Freitas, Morgan, & Gibson, 2015, pp. 468-469).

A final authors’ statement is central. It concerns learning which has a new direction: it is moving from curriculum-focused to experience-centred design (De Freitas, Morgan, & Gibson, 2015, p. 469).

Authors propose these new concepts/models:



*Learning in a MOOC (free adaption from De Freitas, Morgan, & Gibson , 2015)*



*User engagement in a MOOC (free adaption from De Freitas, Morgan, & Gibson , 2015).*

# User Experience UX

## UX background

In literature many works refer to User Experience as a wide concept: “UX is a broadly defined term, including attainment of behavioral goals, satisfaction of non-instrumental (or hedonic) needs, and acquisition of positive feeling and well-being.” (Law, Hvannberg, & Hassenzahl, 2006). There is no agreed statement but many definitions refer to the discipline with whom User Experience is studied (Law, Hvannberg, & Hassenzahl, 2006, Kuniavski, 2010, p. 14). So, there is no “unified” statement or evaluation method on UX (Law, Hvannberg, & Hassenzahl, 2006).

Law et al. explored three “metrics” from Usability, a concept more related to technological side [environment]: “effectiveness, efficiency and satisfaction” and state that actual User Experience try to work on “satisfaction” exploring its main characteristics: “fun, pride, pleasure, surprise, intimacy, joy” and some others to have criteria for an UX’s evaluation (Law, Hvannberg, & Hassenzahl, 2006).

Hassenzahl and Tractinsky’s evolution of UX studies focused three stages between 90s to 20s in the Human Computer Interaction (by now HCI) field:

- “programmatic in the 90s,
- conceptual in early 2000
- to empirical in mid-2000.” (Hassenzahl & Tractinsky, 2006, as cited by Law, Hvannberg, & Hassenzahl, 2006). Some aspects were related to this UX evolution in HCI and gave an ample significance, like a switch, from researches on users’ interactions with products useful for “individual problem solving” to the those given by a “social” understanding of UX (Alben, 1996,

Law, Hvannberg, & Hassenzahl, 2006). Law et al. stated that: “The challenge is how to define, theorize, qualify and quantify co-experience, which is clearly not the sum of individual user experience.” (Law, Hvannberg, & Hassenzahl, 2006) and that UX grown in a “coherent” way but the methodology should be developed better.

An interesting result was given by Law et al. aim to achieve a “shared understanding that UX needs to clarify and operationalize constructs to be taken seriously within the context of SE or user-centred design. Second, at least some approaches to UX believe that with a proper definition come valid and reliable measures.” (Law et al 2006a). Against those who criticized the possibility to evaluate non definable User Experience (emotions, behaviors), in their work Law et al. gave a contribute to search for a “unified view” based on the shared conviction that exploring UX was useful and the next steps should be addressed by design, engineering and research. (Law et al 2006a).

A recent survey study, conducted “amongst 758 practitioners and researchers from 35 nationalities” (Lallemand, Gronier, & Koenig, 2015) has been held to understand if this concept, approached firstly by HCI, and pursued by many disciplines, could be compressed in a shared single statement or should not. The survey study findings were impressive in relation to respondents’ nationalities and fields.

Lallemand et al. (2015) proposed a literature review proposing the Barcenilla & Bastien study (2009) on comparing UX and the Hassenzahl (2008) reflections about the boundaries on UX related to the quality of interaction. Until 2000 the various panorama on UX studies proposed many point of views, ans frameworks.



The main evidence is that UX statements and models refer to each discipline framework and that it is mostly used referring it to HCI.

The findings of Lallemand et al.'s survey (2015) may be so listed:

- The User Experience is not “a new concept”.
- It cannot be compressed by a quantitative or qualitative research.
- It is not clear if it is individual or social.
- Its definition changes according to respondents' language, age, background, domain.
- It is shared that User Experience statement “should definitely be focused on the user” and by producer.
- The definition should provide to be an umbrella for many aspects.
- This definition should take care of the components of UX and the outcomes of an experience, and it should give both positive and negative feedback.
- The statement should be quickly and shortly understandable but so deep to cover every aspects.
- The statement should be relevant for practice.
- The statement could be really different for an “Academia” or “Industry” environment and while in the industrial side it was more important User Experience for designing products, in the academic side it was often related to study researches (Lallemand et al, 2015).

Lallemand et al.'s final conclusion (2015) was that a “standardized definition” could not be achieved. So the researcher has argued that every discipline or environment could have its own User Experience statement to establish according to its users.

## **So, what is UX about?**

User Experience has its own center in a “user” interaction with a “product, system, or really anything with an interface”. This interaction is the so called ”User Experience” which is ”observable or measurable” (Tullis & Albert, 2013, p. 23). They add their statement about User Experience:

we believe the user experience includes three main defining characteristics:

- A user is involved
- That user is interacting with a product, system, or really anything with an interface
- The users’ experience is of interest, and observable or measurable

In the absence of a user doing something, we might just be measuring attitudes and preferences, such as in a political poll or survey about your favorite flavor of ice cream. There has to be behavior, or at least potential behavior, to be considered user experience.” (Tullis & Albert, 2013, pp. 22-23).

## **Chapter 3: Research design**

### **Philosophical foundations for qualitative research**

The epistemology - the knowledge theory from the greek “episteme”, for “knowledge”, and “ology”, for “theory” (Connaway & Powell, 2010, p. 29) -

The researcher has found the constructivist epistemology useful for her purposes for many reasons, as this one so expressed:

Constructionism is not a unified program. [...]. It informs a lot of qualitative research programs with the approach that the realities we study are social products of the actors, of interactions, and institutions. Seen in this way, knowledge organizes experiences, which first permit cognition of the world beyond the experiencing subject. Experiences are structured and understood through concepts and contexts, which are constructed by this subject (Flick, 2009, pp. 69-70).

Qualitative research presents many sides for a philosophical definition and, as explained later, the term cover like an “umbrella” a wide range of perspectives and application of the methodology so broader called. Merriam (2009) offers a landscape of the different positions about qualitative research interpretations:

Some talk about traditions and theoretical underpinnings (Bogdan & Biklen, 2007), theoretical traditions and orientations (Patton, 2002), theoretical paradigms (Denzin & Lincoln, 2000), worldviews (Cresswell, 2007), or epistemology and theoretical perspectives (Crotty, 1998) (Merriam, 2009, p. 8).

The researcher has chosen the epistemology of constructivism which enable people to understand phenomena as a construction of the reality as social interaction: the “meaning” of a phenomena does not stand alone but comes out with people’s significance given in their real-world life and social linking:

Meanings are constructed by human beings as they engage with the world they are interpreting ”(Crotty, 1998, pp. 43, as cited by Merriam, 2009, pp. 23).

So, as Merriam marks, qualitative research (he names it “basic qualitative research”, 2009, p. 22 ss.) is helpful:

in (1) how people interpret their experiences, (2) how they construct their worlds, and (3) what meaning they attribute to their experiences. The overall purpose is to understand how people make sense of their lives and their experiences. (Merriam, 2009, p. 22).

## **Research Paradigm**

The chosen research methodology is the qualitative one, considered as “A broad term that covers a wide range of techniques and philosophies, thus is not easy to define” (Hennink, Hutter, & Bailey, 2011, pp. 8-9). Doing qualitative research using one or several related research methods implies to be under a particular approach with the aim to explore, examine, analyse and understand in-depth a specific phenomena related to humans’ intepretation. The qualitative research helps to have answers such as ”why” or ”how”

Therefore qualitative research is most suitable for addressing ‘why’ questions to explain and understand issues or ‘how’ questions that describe process or behavior. (Hennink, Hutter & Bailey, 2011, p. 10).

As the research context is constituted by a class participating to a MOOC and as the main research question relates in discovering the human and technical techniques (tools, methods, theories) which would engage them the most, the researcher has chosen the qualitative research, a kind of social inquiry.

Qualitative research is an “umbrella term” which covers different research approaches in the human and social fields, among them two stand out: the interpretative and naturalistic ones. With the interpretative approach the qualitative research explores the understanding given by people to their experiences in the real world life, with the naturalistic one the investigation relates more on social meanings in a naturalistic context.

### **Trustworthiness**

Trustworthiness has been evaluated using Pickard (2007) model where she uses the Lincoln and Guba one (1985) who addressed truth value, applicability, consistency and neutrality. Pickard has proposed a model with these concepts

### **Credibility**

Credibility Is given using a triangulation of data collection techniques, engagement with participants and member checking. For the engagement the researcher used the platform and social network. Data collection has been provided with the use of document analysis, participant observation and online

questionnaire. The researcher has not had the time to check the data collected via questionnaire with participants.

### **Transferability**

With transferability it should be possible to repeat the research to another context. The researcher has been captured by the User Experience topic and her first has been to find a library in which to explore the User Experience within digital services. The researcher has the idea to repeat the research again with other MOOCs and with digital libraries context.

### **Dependability**

The researcher has had in the supervisor the guide for the whole process that they have shared via email, google drive tools and skype call. The supervisor has planned two DILL students skype meeting for the overall strategy and many skype call with a restrict DILL group to focus on the research

### **Confirmability**

Confirmability has the aim to validate the results and confirm data for the research. All data are stored as documentation and the online questionnaire has been sent to supervisor.

## **Research method**

### **The choice between ethnographic research and case study**

User Experience in the context of Libraries or Library and Information Science is almost explored using the ethnographic research methods. In this specific case the researcher's choice has elected the case study and specifically: Digital Library in principle and practice.

As researcher's aim has been to investigate MOOC's actors there has been hesitation if to prefer the observation through ethnography exploration because as stated by Agar (1996) "is the process of engagement and the written account of the engagement" and the "data collection technique is participant observation". Reasoning, the ethnographic research characteristics: no hypothesis to start with, the use of the theoretical framework only for post-it memories and not to drive the research, the long observation on the field and primarily the ethnographic research method is specific to analyse and report more a social and cultural group, and, finally, the researcher should be embedded in the context chosen. The study case is perfect for a context with specific boundaries, a specific set of data collection, time sessions for research delimited a priori and, especially because the researcher is an outsider whose aim is to become closer to the study case (Pickard, 2007).

For User Experience investigation in Libraries the ethnographic research method is exploited especially because librarians are really in the field, the observation may last longtime.

Case study has presented more correspondences with researcher's scope:

Case study evidence may come from six sources: documents, archival records, interviews, direct observation, participant-observation, and physical artifacts. Using these six sources calls for mastering different data collection procedures. Throughout, your objective may be to collect data about actual human events and behavior or to capture the distinctive perspectives of the participants in your case study (or both). These extended inquiries mean that case study data collection can require much fieldwork time, including the conduct of prolonged interviews occurring over multiple sittings. (Yin, xxx, p. 154).

## **Sample**

The researcher has chosen MOOC participants as sample and the teacher and tutor have been involved for the documentation analysis and for the participant observation just to receive internal reports.

## **Data Collection Methods**

The researcher has chosen to start with document analysis and participant observation, that she had entering in the platform or following social networks, and an online questionnaire.

## **Document analysis**

The researcher has studied internal and unpublished reports, and published documents (posts on blogs, video on youtube, papers and the technical and



scientific documentation about the EMMA project and platform available on its website).

### **Participant observation**

The researcher has used all learning analytics, and other reports, the platform and social networks themselves.

### **Online questionnaire**

Timeline

- the questionnaire was launched on the 12<sup>th</sup> May and closed on 7<sup>th</sup> July

Participants

- 63 persons participated giving their impressions.

Questions

- the researcher addressed 20 questions

All questions were divided in 3 sections.

- Section A: to get personal and confident data about job definition, without gender or age identification. The aim was only to get data about the job.
- Section B: addressing questions to understand the CoPE (Community of practice E-learning) experience in the MOOC "Digital Library in principle and practice" with briefs introduction and statement about the topic, and the aim the researcher was to get but the answers of this section: to know how interaction and co-creation of concepts in the MOOC Community had facilitated participants' learning. In this section participants were asked to reply to:

- 5 questions
  - 3 closed questions with a scale grade from 1 to 5
  - 2 open questions to enrich data.
- Section C. related to get data about User Experience engagement giving a brief introduction about the complex User Experience meanings and use in many fields, a statement used for the specific MOOC. In this section the scope is to understand about how all tools listed and all actors involved have stimulated participants' engagement in the MOOC learning experience. In this section participants are asked to reply to:
  - 13 questions
    - 11 closed questions with a scale grade from 1 to 5
    - 2 open questions.

#### Confidential data

- it was stated that all data would be stored and treated anonymously and confidentially.

## **Data Analysis and Interpretation**

Data have been analysed recurring to constant comparative analysis, method developed by Strauss (1987). The emergent categories have been processed inductively from raw data. The Straus and Corbin model (1998) has been applied with:

1. Open Coding, to identifies concepts by means of similarities and differences among raw data.
2. Axial Coding, to identifies categories and subcategories to connect..
3. Selective Coding, to advance in the hypothesis.

## **Chapter 4: findings, analysis and discussion**

In this chapter the researcher has described the following sections: the case study presentation, findings, analysis and discussion. The first part is related to the description of the 1st edition of the EMMA MOOC *DLPP Digital Library in principle and practice*, adding some info related about EMMA platform; the second one has been used to present findings given by the collected data with the analysis and discussion.

### **The case study: The *Digital Library in principle and practice* MOOC in the EMMA platform**

#### **EMMA (European Multiple MOOCs Aggregator) platform<sup>3</sup>**

The European Multiple MOOC Aggregator EMMA was launched in 2014 as European project pilot intended to last for 30 months. Funding for the project came by European Union through the CIP (Competitiveness and Innovation Programme) Framework Programme and from interested partners.

The project was specifically devoted to promote European overall identity offering “free, open, online courses” in different languages and about several topics throughout European Universities called to participate. Its aim was at first

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<sup>3</sup> All information about EMMA project and platform are available on its website, here: <https://platform.europeanmoocs.eu/> and more specifically here: <http://project.europeanmoocs.eu/>.

to become a provider for “multilingual access to European MOOCs”. It started with eleven partners thanks to the Italian guidance of Federica Web Learning team from the University of Naples Federico II, with a joint scientific partnership with three “traditional universities” from France, Estonia and Spain (Université de Bourgogne, Tallinn University, and Universitat Politècnica de València) and three “Open Universities” from Spain, Netherlands, and Portugal (Universitat Oberta De Catalunya, Open Universiteit Nederland, and Universidade Aberta). Some enterprises belong to the partnership too with technical, marketing and research strategy roles: CSP – Innovazione Nelle ICT S.C.A R.L. (Italy), for the technical platform side, ATOS (Belgium), to maximize the impact, IPSOS srl. (Italy), for marketing and researching over users and stakeholders, and ATiT (Belgium), for the dissemination plan.

Technically EMMA offers two ways to adhere to MOOCs learning strategies:

as an aggregator and hosting system of courses produced by European universities and as a system that enables learners to construct their own courses using units from MOOCs as building blocks. The EMMA team is taking a deliberate multilingual, multi-cultural approach to learning by offering inbuilt translation and transcription services for courses hosted on the platform (from EMMA website project information: <http://project.europeanmoocs.eu/about/>)

## **The Digital Library in principle and practice MOOC<sup>4</sup>**

The DLPP *Digital Library in principle and practice* MOOC comes out from an intuition of Anna Maria Tammaro (University of Parma in Italy) whose aim has been to share with teachers and students her expertise of Digital libraries to boost their use as special contexts (as means of repositories, laboratories and set tools) in which Lifelong learning could be enhanced.

The course has been attended by more than 650 users (with 12% unerollment) belonging to different backgrounds:

with a clear majority of teachers (46%) and other educators as « digital activists » and professional trainers (15%) in training companies. A small percentage (only 13%) was made up of professionals and students of LIS and cultural heritage. The rest of the participants were simply interested people in digital libraries (Tammaro, 19 July, 2016).

Tammaro has decided to develop an e-learning “community” in which the cMOOC method could enable their learning needs in a participatory and active way. The course has involved other co-authors Liliana Melgar, Eric Boamah, Getaneh Alemu, and Elena Giusti as co-auhot and e-tutor too.

The learning contents have been provided by author, co-authors, e-tutor and the overall class, with video lectures, assignments, final project work, quiz,

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<sup>4</sup> The description is based on documents listed in Document and analysis and Websites sections.

newletters, social networks discussion, conversation on blog and on forums, to activate the content co-creation and production.

The MOOC was delivered between April and May 2016 with the overall class interacting according to scheduled timeline for assignments and final project work. After the end of May the course was left open till the 2<sup>nd</sup> edition was offered from February to March 2017 in “self-paced” modality, that is to say that in this “silent” phase the interaction with teachers and tutor could be avoided or reduced and learners themselves could set a personal timeline to accomplish assignments.

## **Findings, analysis and discussion**

### **Document analysis**

Anna Maria Tammaro (June 5, 2016) has described in the internal report some first impressions and data got by the questionnaire that participants had to fill at the beginning of the MOOC.

Here listed by the researcher to get data to match with those of the questionnaire.

### **Personal data and interests in the MOOC**

Participants number was around 650, among them the 12% has unenrolled. The main professional background was at high level and most of them belonged to teachers' role in schools. The provenance was from a good range of foreign country with predominance of Italy. Most of them already had an approach with e-learning training and had declared to be able with time management. The 70% have replied to assure the availability of 2-5 hrs per week to work on the MOOC (but the hours planned were fixed for a higher range).

### **Learning Community, social networks and tools**

The cMOOC pedagogy has been exploited recurring to the involvement of technical aids and to DILL PhD Teachers from all around the world and to DILL students. Then recurring to the overall class stimulating contents creation with social networks and with newsletters.

### **Learning objectives**

The DLPP MOOC has had the aim to get acquainted with Digital Libraries theoretical foundations and technical aspects with the opportunity to choose some DLs as example and to work on a final project related to the creation of a Digital Library. Findings have given a lack in DLs knowledge, a confusion among terms and the difficulties to list real Digital Libraries.

### **Content creation**

The report list all availability of the technological side: how to produce content, how to upload files, video, how to translate and some further information.

### **Evaluation**

Evaluation tools are given by quiz, conversations and assignments, peer assessment and the blog as a way to update the learning as creation and reading. The teacher's evaluation has been exploited in a rich way inside the platform, recurring to the back –end platform.



### **Other findings**

The platform allows the teacher and the tutor to exploits in a very rich the MOOC engagement, and to adjust it with the tutoring role and the teacher or co-authors participation

### **Participant observation**

In the same report a learning analytics has been produced, classifying the most viewed module (What are DLs) and the conversations which have been followed the most: the one related to DLs. All conversation have been listed too and participants interaction is followed with internal tools.

### **Teacher's role**

The teacher has played an active role to put participants in the connectivism mood, in conversations, blog and other interactions. She has tried to engage users because she was aware of that challenge and the newsletter has been one of the mean to activate participants interaction. She has exploited Facebook too to enhance users involvement also addressing other learning initiative, such as conferences, videos, readings, or sharing job applications too.

The findings of the overall research has showed that the community usually needed a guidance role and the true connectivism was difficult to achieve.

### **Tutor's role**

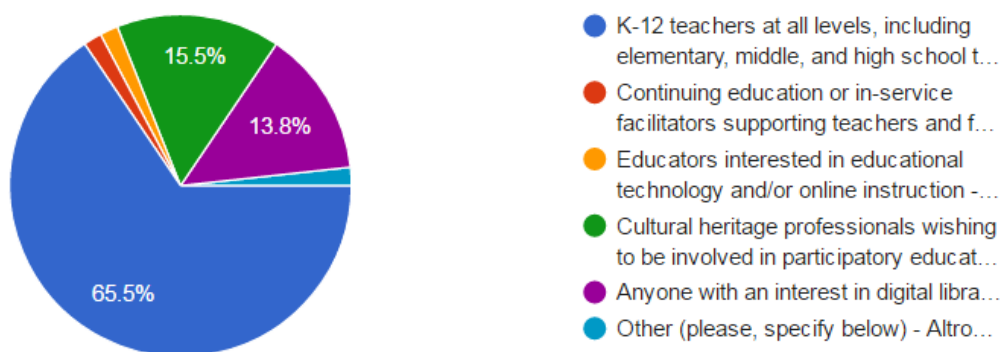
Elena Giusti (Giusti, 2016) has described her tutor role. The tutor has played an important role too in stimulating and monitoring the overall community in participating in creating knowledge. She has had some main tasks to follow: to

manage the online communication; to facilitate the use of technological tools inside the platform; to boost conversation also outside the platform in social networks; to follow all issues, to help for survey too; to follow and elaborate the sentiment analysis too; and to work on newsletters too.

## Online questionnaire

In the first section A the researcher's aim has been to get formally data about participants' scholarly and professional background. The goal has been to establish which Community of Practice had taken part to the EMMA MOOC Digital Library principle and practice.

A1. Please, define who you are.



### *Participants' background*

63 persons replied to the questionnaire, so divided in these fields: 38 considered themselves as teachers at all levels plus 1 in the continuing education or in-service facilitators supporting teachers and faculty and plus another 1 educator being part of the educational technology and/or online instruction; 11 belonged to digital libraries field and 9 to the cultural heritage sector, plus 3 persons defining themselves as a librarian, and the other 2 giving no answers about their job or educational path. The composition of the class was various but with a high level of knowledge and educational training.

The section B has been constructed to know which key drivers have boost the e-learning process, considering the connectivism pedagogical assumption underpinning the whole MOOC.

In this section 5 questions have been exploited to understand the CoP-E (Community of practice E-learning) experience in the MOOC. A briefs introduction and statement<sup>5</sup> about the topic has been given. The researcher's aim has been to have an insight to understand more about the interaction, the co-creation of contents, the peer assessment activity, and which other elements have been felt as improving, or obstructing, participants' learning process.

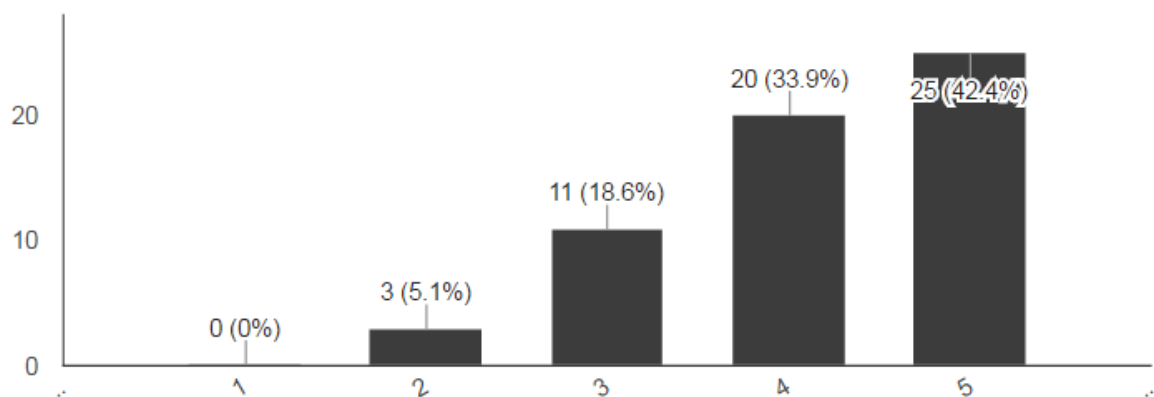
The underpinning pedagogical model of the DLPP MOOC has been the Connectivism which implies that knowledge is built inside the community and by means of the community itself. Even though a participant enrolls him/her/self with no constraints, some may feel inadequacy, inappropriate or meaningless the community activity or can perceive bad feelings with the learning model or content or managed time. By the other side, users may perceive the community activating and reinforcing the learning process and can feel positively it.

The researcher has decided to focus only to main topics given by the literature review as key words: community, interaction, co-creation (creativity), peer assessment.

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<sup>5</sup> According to Chikh, Berkani Sarirete, a CoPE is "as a virtual framework for exchanging and sharing technopedagogic knowledge and know-how between actors of e-learning" (Chikh et al., 2007; 2008).

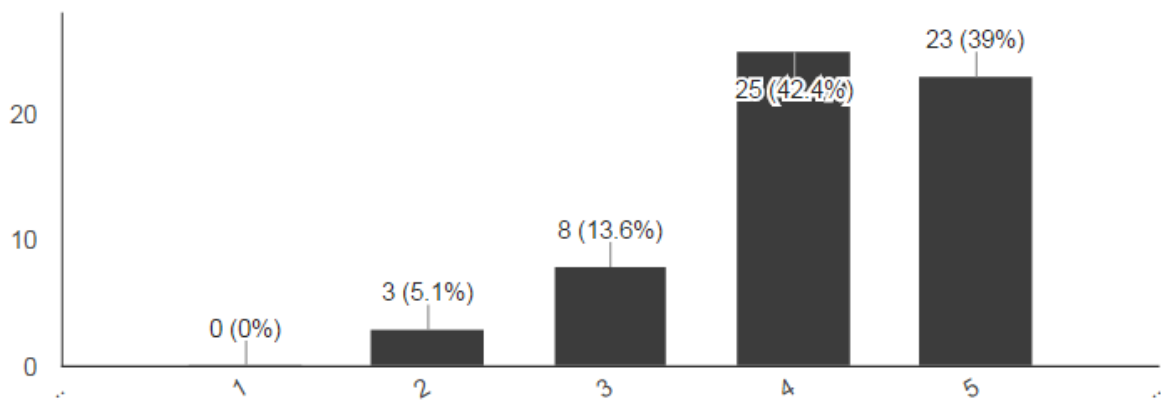
B1. How much the community interaction has been considered a key driver to facilitate the e-learning process: the respondents considered the interaction engaging, considering that the interaction has been valued with this scale: 45 participants gave a rate among the 4<sup>th</sup> and 5<sup>th</sup> grade of perception (33,9% level 4 and 42,4% level 5).



*Interaction*

The community interaction is a key word in the Connectivist model cMOCC. According to Siemens and Downes the community works as enabling the learning process and as network. Respondents' reply gives a good perception of the community which can be considered useful for its purposes.

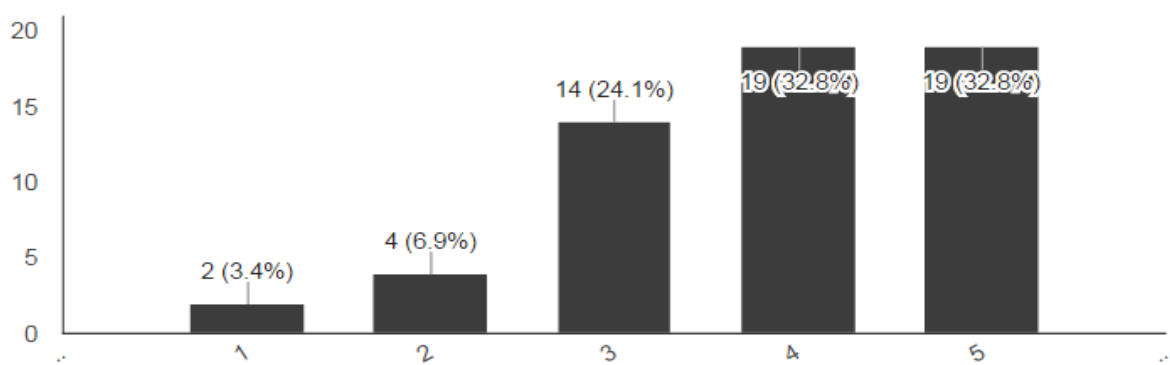
B.2. How much the CoP-E's co-creation of contents was a key driver to facilitate the e-learning process. The co-creation has been perceived a key driver for 48 users who have gave a perception point rated between the 4<sup>th</sup> and 5<sup>th</sup> grade. (42,4% level 4 - 39% level 5).



*Co-creation*

Another key topic discovered in the literature review has been the importance given to the co-creation process. The perception is good but comparing to the previous question, the 4<sup>th</sup> grade overpass the 5<sup>th</sup>, and the the values are really symmetric. Anyway both grades, the 4<sup>th</sup> and the 5<sup>th</sup>, express a good perception among users over the co-creation system.

B3. The peer assessment has been a characteristic task, considered strategic in the connectivist pedagogy. The researcher has asked how much the Peer assessment has been felt a key driver to facilitate the e-learning process in the community. The response has given a lower result, compared to the two previous questions: 38 participants have felt half and half at 4<sup>th</sup> grade and 5<sup>th</sup> grade (32,8%) the peer assessment as a mean to facilitate learning process.



*Peer assessment*

The peer assessment present a lower satisfactory perception grade compared to the previous questions. Until now: the community join the 5<sup>th</sup> grade for 25 persons, so 42%; the co-creation join the 5<sup>th</sup> grade for 23 persons (39%), while the third place is reserved to peer assessment with an equal grade satisfaction at 5<sup>th</sup> and 4<sup>th</sup> for 38 person (32%+32%).





The second open question has had the intent to discover which factors have been felt as obstructing the learning experience. The respondents have been asked to list other key drivers facilitating the e-learning process, ordering them by importance, with the opportunity to choose more than one. Among 63 respondents. Among 63 respondents, 39 have given their preferences which have been depicted in the cloud according to the following entries and to the major insight that 23 persons have stated that any difficulty has been felt as disengaging their experience. The factors that have been felt as obstacles to the learning experience have grouped as: time constraints (4 persons), assignments (3 persons), the whole MOOC has been considered too demanding (for 2 persons), the social networks have not been appreciated (2 persons) and the tutor and professors guidance have been listed too (2 persons). Other three responses generically have listed, with one entries only, assignment, digital difficulty, internet connection, etc.



Answers rates a satisfaction for 23 over 39 respondents about the good experience perceived in the MOOC.

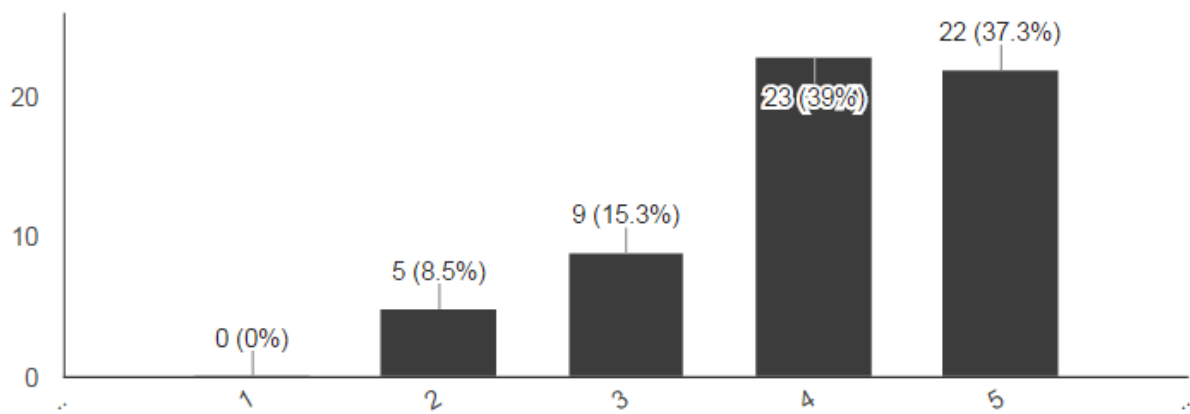
*Difficulties preventing the e-learning process in the Community*

The 3<sup>rd</sup> section C has been developed to get data about their User Experience engagement giving a brief introduction about the complex User Experience meanings and use in many fields, a statement used for the specific MOOC<sup>6</sup>. In this section the scope has been to understand about how all tools listed and all actors involved have stimulated participants engagement in the MOOC learning experience. The section has been constructed with 12 rating questions from 1 to 5 scale and with 2 final open questions trying to collect data about the key drivers boosting, or obstructing, the User Experience in terms of users' engagement. User Experience can be explored, measured through many elements, usually related only to the technical side. The researcher has developed the questions to get an insight about the human interaction too (given by all actors involved in the e-learning process) and to get awareness about tools felt most useful.

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<sup>6</sup> Lynn Silipigni Connaway explored users engagement in educational and learning environment: "Use what you know, learn what you don't know, engage in new ways" (L. Silipigni Connaway, 2016).

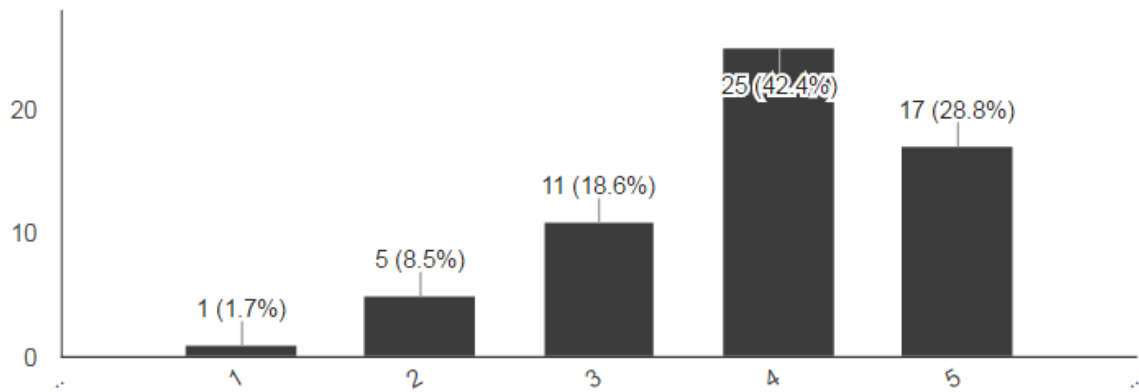
C1. The blog has been rated as stimulating with a preference grade among the 4<sup>th</sup> and 5<sup>th</sup> grade by 55 persons.



*Blog*

Having received previous answers, the researcher has been aware that the minimum score between the 4<sup>th</sup> and 5<sup>th</sup> grade here listed is not so good as other responses. The blog has of course a good grade of perception but not compared to previous responses.

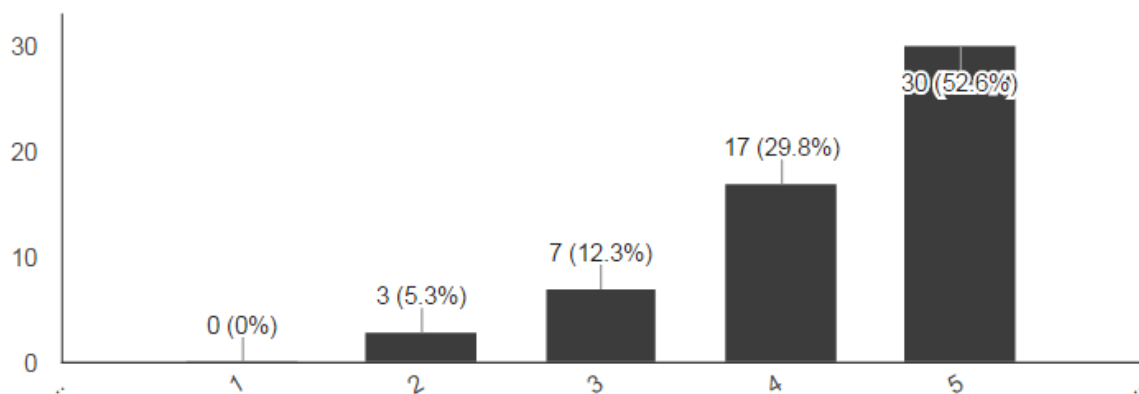
C2. Newsletters have been rated as stimulating the engagement with a preference grade among the 4<sup>th</sup> (42,4%) and 5<sup>th</sup> (28,8%) grade by 42 persons.



*Newsletters*

The newsletters join a good range among the 4<sup>th</sup> grade of evaluation (25 persons) even if for others it does not seem so useful.

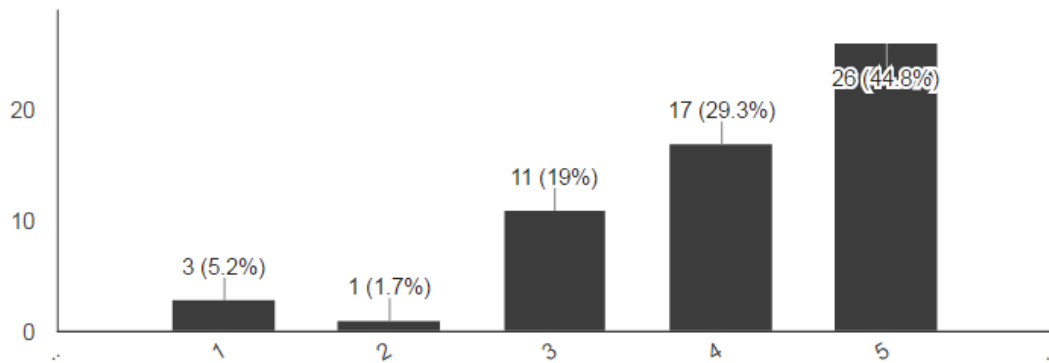
C3. Tutor's role has been rated as stimulating the engagement with a preference grade among the 4<sup>th</sup> (29,8%) and 5<sup>th</sup> (52,6%) grade by 57 persons.



*Tutor's role*

The tutor's role get a great score for 30 persons and these findings gives an interesting insight of the importance of the guidance roles of those involved by the instructors and human side of the overall e-learning process.

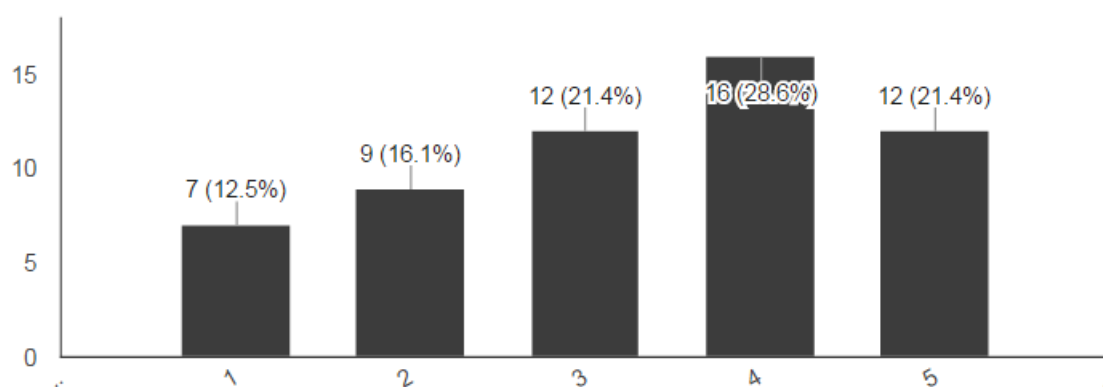
C4. The "Digital Library in principle and practice" Facebook's social network role has been rated as stimulating the engagement with a preference grade among the 4<sup>th</sup> (29,3%) and 5<sup>th</sup> (44,8%) grade by 33 persons.



*Facebook*

Facebook social network is perceived useful by 26% while all other respondents list it less useful. Comparing this data with following social networks rating, Facebook is the preferred one.

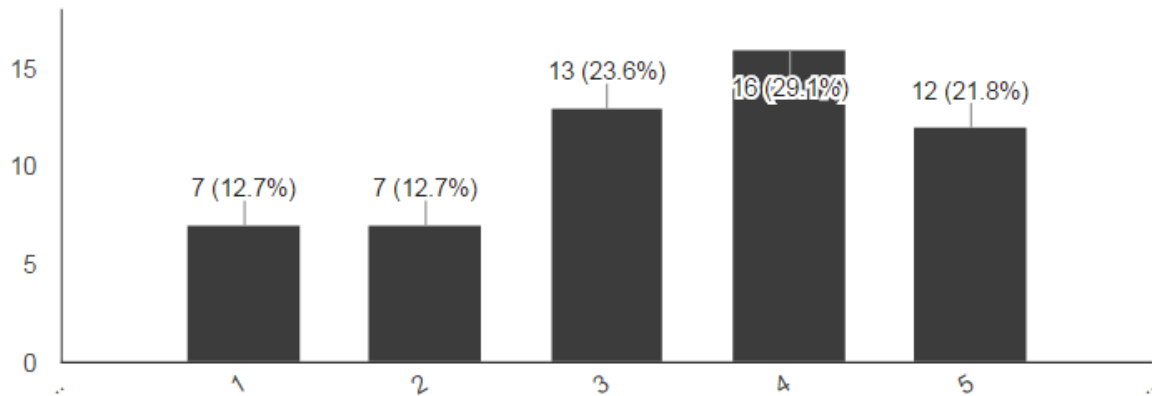
C5. The "Digital Library in principle and practice" Twitter's social network role has been rated as stimulating the engagement with a preference grade among the 4<sup>th</sup> (28,6%) and 5<sup>th</sup> (21,4%) grade by 28 persons.



*Twitter*

This answers get a percentage range in all grades, reaching only 16 persons who rate it at 4<sup>th</sup> grade.

C6. The "Digital Library in principle and practice" GooglePlus's social network role has been rated as stimulating the engagement with a preference grade among the 4<sup>th</sup> (29,1%) and 5<sup>th</sup> (21,8%) grade by 28 persons.

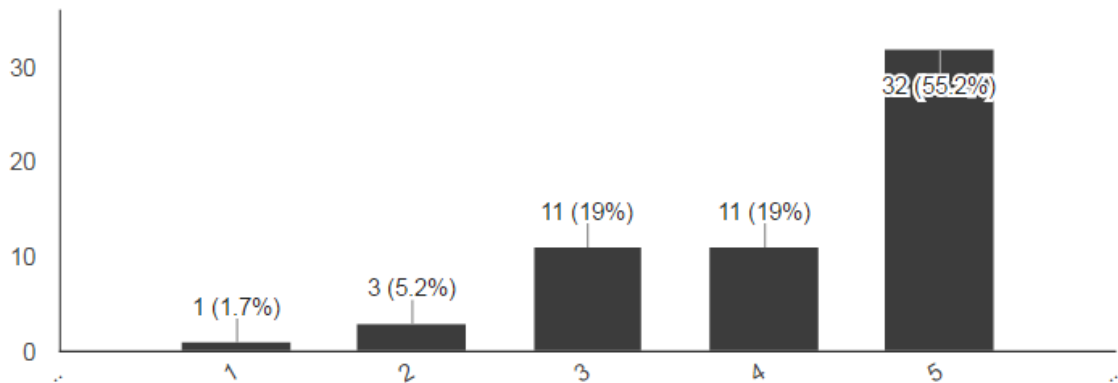


*GooglePlus*

Also GooglePlus, as Twitter, has received a rating in all its grades and can be considered also less useful. Facebook is considered the preferred social network.



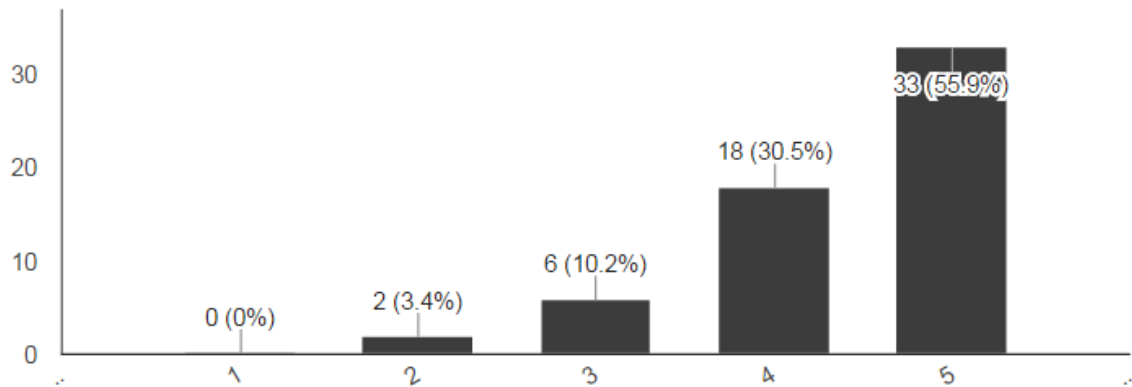
C7. The Homework assignment has been rated as stimulating the engagement with a preference grade among the 3<sup>rd</sup> (19%) and the 4<sup>th</sup> (19%) by 11 persons, and 5<sup>th</sup> (55,2%) grade by 32 persons.



*Homework assignment*

The finding give the impression that the half of all questionnaire respondent have preferred to use a traditional assignment.

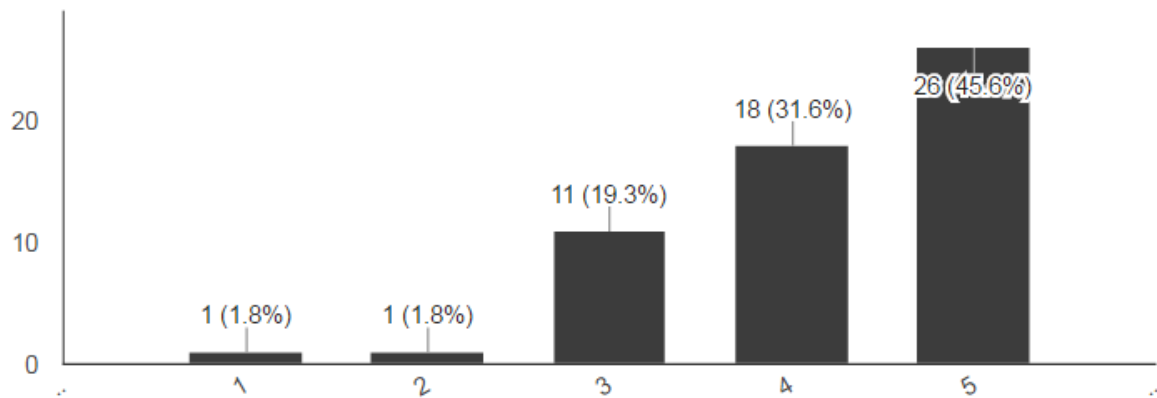
The C8. The Quiz Assignment has been rated as stimulating the engagement with a preference grade among the 4<sup>th</sup> (30,5%) by 18 person, and 5<sup>th</sup> (55,9%) grade by 33 persons. The 4<sup>th</sup> and 5<sup>th</sup> rate have been given by 51 persons.



*Quiz assignment*

Even the Quiz assignment has got a good rate by half respondents the online questionnaire, so even this traditional exercise has been well evaluated.

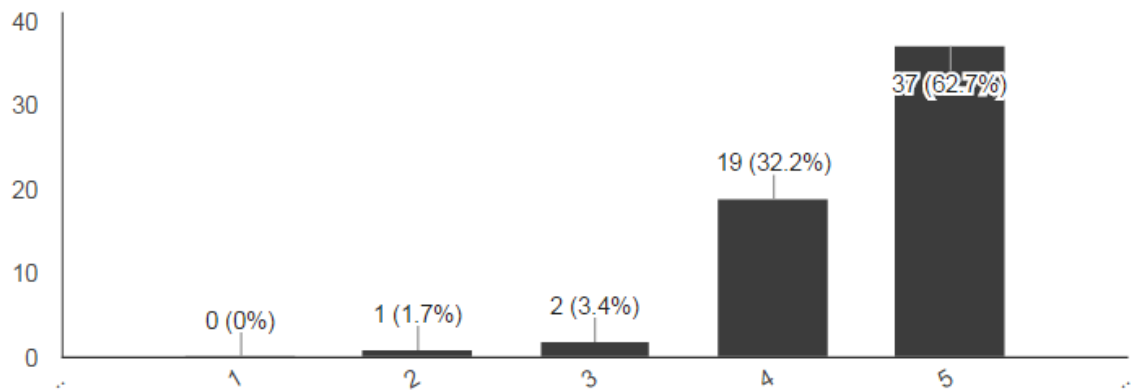
C9. The guided conversation has been rated as stimulating the engagement with a preference grade among the 4<sup>th</sup> (31,6%) by 18 person, and 5<sup>th</sup> (45,6%) grade by 26 persons, for 44 persons.



*Guided conversation*

Conversations are a key topic in Connectivism and the rating goes from a 3<sup>rd</sup> grade to the 5<sup>th</sup> with a good score even if not at other rating.

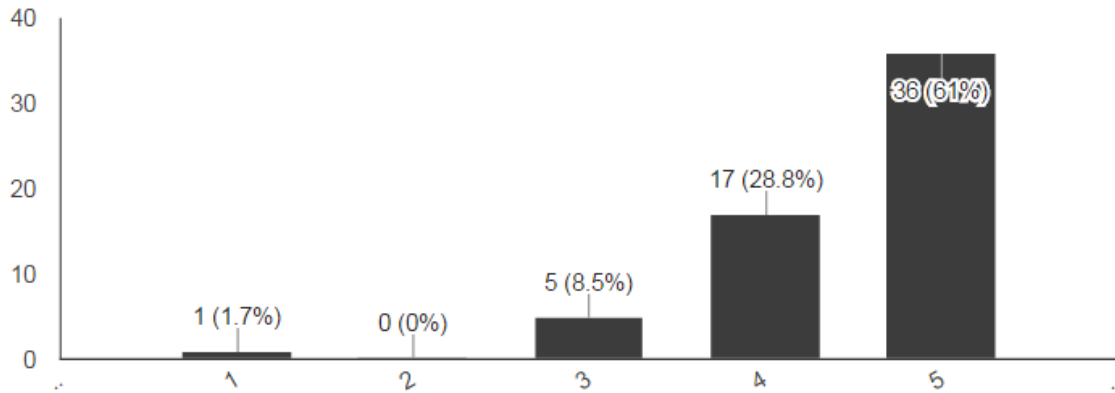
C10. The learning material has been rated as stimulating the engagement with a preference grade among the 4<sup>th</sup> (32,2%) by 19 person, and 5<sup>th</sup> (62,7%) grade by 37 persons,



*Learning material*

The learning material has got a great evaluation reaching the 5<sup>th</sup> grade for 37 persons and the 4<sup>th</sup> rate for 19 persons, reaching 56 on 63 respondents for the high rate. Also in forums discussion the learning material has been really appreciated.

C11. The teacher and co-authors' role has been rated as stimulating the engagement with a preference grade among the 4<sup>th</sup> (28,8%) by 17 persons, and 5<sup>th</sup> (61%) grade by 36 persons.



*Teacher and co-authors' roles*

Teacher and co-authors play a great role, as well as tutor one. So the human side interaction is considered important in the overall e-learning process.

With two open questions the researcher has tried to capture which other tool had a great impact over users' engagement, or disengagement, in the learning experience.

With the first open question of the section c. respondents have been asked to list other key drivers engaging the e-learning process, ordering them by importance, with the opportunity to choose more than one. Among 63 respondents, 25 have given their preferences which have been depicted in the cloud according to these entries: generically listed as tools by 6 persons, activities such as sharing (persons), discussion (2 persons), interaction (2 persons) and peer assessment (2 persons), have been felt engaging. The contents have been listed engaging by 4 persons. Other key drivers have been listed as engaging by 2 persons for each: platform, the resources and the video lectures). At the end various and single tools have been chosen with only 1 preference: the teacher role, the translation, the use of google drive, etc.



These findings recall those already examined: all tools (without a specification) and contents are labelled generically, while the specified name such as peer assessment or video lectures have received a lower preference

*Tools facilitating participants engagement*

With the second open question of the section c. respondents have been asked to list other key drivers preventing their engagement in their e-learning process, ordering them by importance, with the opportunity to choose more than one. Among 63 respondents, 30 have given their preferences which have been depicted in the cloud according with the major insight that 13 persons have stated that any difficulty has been felt as disengaging their experience. The factors that have been felt as obstacles to the learning experience have grouped as: time constraints (5 persons), the whole MOOC has been considered too demanding (for 2 persons), the use of the English (2 persons), the platform and the absence of digital literacy for 4 persons. Other three responses generically have been listed, with one entries only: Galileo assignment, deadline, social networks.



*Difficulties preventing participants engagement*

The interesting findings is that any difficult was perceived to prevent the learning experience. Another finding is related to time constraints to end and work to all assignments and to participate which has been felt an obstacle.

## **Chapter 5: Conclusions, recommendations , further research and issues.**

In this section the researcher presents her conclusions based on research questions, aim and objectives, trying to address some recommendations and proposing a further research.

The aim of the researcher has been: to understand to what extent User Experience strategies may positively impact users' perception in a digital context such as the E-learning ones given by MOOCs, and to what extent User Experience is mostly enhanced by the technical and, or, human factor.

The following two objectives have been explored for the aim presented.

Objective 1: to discover if User Experience strategies allow and enhance users' engagement in a digital learning context such as a MOOC.	Chapter 4: Findings, analysis, discussion, sec. b and sec. c
Objective 2: to identify and clarify User Experience key drivers that boost the use of a digital learning environment such as a MOOC .	Chapter 4: Findings, analysis, discussion, sec. b and sec. c



## **Conclusions based on research questions and objectives**

Objective 1: to discover if User Experience strategies allow and enhance users' engagement in a digital learning context such as a MOOC

The User Experience have been taken in account to describe all strategies that could be exploited in a MOOC platform, so those by the technical side and those by the human side. With the teacher and tutor management and back-end use of the platform it is possible to manage User Experience strategies and to enhance user engagement and the learning experience.

Objective 2: to identify and clarify User Experience key drivers that boost the use of a digital learning environment such as a MOOC.

Participants have felt to be engaged mostly with the human interaction with the overall class but mostly with teacher and tutor. The main issue has been to foster a true connectivist learning. The success has been achieved by the side of the interactions among all participants but the guidance roles of teacher and tutor has played a great role. So the gap is to establish if for connectivism can be good to achieve a strong interaction, co-creation and collaboration even though the teacher and tutor play a leader role, or if a true connectivism should be really au-pair.

Another interesting note about the experience is that the learning strategy is innovative but the preferred assignments have been those traditional (homeworks and quiz).

## **Recommendations and further research**

The researcher has noted that some assignments have been felt demanding and that the overall structure has been considered at high level and demanding too. Another recommendation that she has got is to work more on and co-creation and co-design too. Co-creation has been exploited in the meanwhile the MOOC was running and has been managed. Co-design has been managed too in the meanwhile but it should be important to design further DLPP MOOC edition with a questionnaire, focus group and online diaries with a select sample of previous participants.

## **Issues**

The researcher has decided to write some lines more to present the most significant issues she had during the whole research and writing process. The first problem was to work on a clear research question. Secondly both aim and objectives were not so easy to explicit to herself and to make them understandable, measurable. Maxwell's statement (2005, p. 3) matches perfectly with researcher's feelings: "Because a design always exists, it is important to make it explicit".

The main topics of this research have been the user engagement and the User Experience in a MOOC, both topic are connected with User and with a measurable experience and no other topics have been so challenging as this one, so difficult to make clear, understandable and measurable.

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References, listed in APA style, have been divided in 4 sections: 1<sup>st</sup> part has been reserved to all documents useful for the overall research strategy (theoretical and practical researcher's steps); the 2<sup>nd</sup> and 3<sup>rd</sup> have been inserted to produce the Documentation analysis, the 2<sup>nd</sup> section related to the documentation specifically devoted to the DLPP MOOC or to EMMA, the 3<sup>rd</sup> section to provide details about EMMA project; the 4<sup>th</sup> section has been reserved to visit the specific websites.

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## **Document analysis: DLPP and EMMA reflections and EMMA outcomes and deliverables**

### **DLPP and EMMA reflections**

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## **EMMA outcomes and deliverables<sup>7</sup>:**

### **Outcomes**

“The EMMA team are working hard to create the outcomes promised in the project proposal. Many of these outcomes are public and will be published here when they are available. The following list shows the main public project outcomes” (EMMA: <http://project.europeanmoocs.eu/project/outcomes/>).

- Interface specification and Navigation guidelines
- Dissemination Materials (3 versions)
- Aggregator Description
- Evaluation Methodology
- User Manual (3 versions)
- Market Research Report
- Service and Content Deployment
- Pilot Cycle Evaluations
- Definition of a European MOOC model
- Final report

### **Deliverables**

#### **D2.1 Aggregator Description**

Retrieved from:

[http://project.europeanmoocs.eu/deliverables/D2.1\\_Aggregator\\_UNINA.pdf](http://project.europeanmoocs.eu/deliverables/D2.1_Aggregator_UNINA.pdf)

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<sup>7</sup> Quotations have been copied by EMMA website specific page (<http://project.europeanmoocs.eu/project/outcomes/>) . EMMA document analysis references have been retrieved from the EMMA website where the documents are openly available at the link already given.

## **D2.2 User Manual**

Retrieved from:

[http://project.europeanmoocs.eu/deliverables/D2.2\\_User\\_Manual\\_UNINA.pdf](http://project.europeanmoocs.eu/deliverables/D2.2_User_Manual_UNINA.pdf)

### **D2.2.1 User Manual**

Retrieved from:

[http://project.europeanmoocs.eu/deliverables/D2.2.1\\_UserManual\\_UNINA.pdf](http://project.europeanmoocs.eu/deliverables/D2.2.1_UserManual_UNINA.pdf)

### **D.2.2.2 User Manual**

Retrieved from:

[http://project.europeanmoocs.eu/deliverables/D2.2.2\\_UserManual.pdf](http://project.europeanmoocs.eu/deliverables/D2.2.2_UserManual.pdf)

## **D2.5 Interface specification and Navigation guidelines**

Retrieved from:

[http://project.europeanmoocs.eu/deliverables/D2.5\\_Interface\\_specification\\_UNI  
NA.pdf](http://project.europeanmoocs.eu/deliverables/D2.5_Interface_specification_UNI<br/>NA.pdf)

## **D4.2 Evaluation Methodology**

Retrieved from:

[http://project.europeanmoocs.eu/deliverables/D4.2\\_Evaluation\\_Methodology\\_Ip  
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## **D5.2 Service and Content Deployment**

Retrieved from:

[http://project.europeanmoocs.eu/deliverables/D5.2\\_Service\\_and\\_Content\\_Deplo  
yment\\_UOC\\_Final.pdf](http://project.europeanmoocs.eu/deliverables/D5.2_Service_and_Content_Deplo<br/>yment_UOC_Final.pdf)

## **D5.2 Editorial Policy**

Retrieved from:

[http://project.europeanmoocs.eu/deliverables/D5.2\\_Complement\\_EMMA\\_Edit  
orial\\_Policy.pdf](http://project.europeanmoocs.eu/deliverables/D5.2_Complement_EMMA_Edit<br/>orial_Policy.pdf)

## **D5.2 Terms and Conditions**

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[http://project.europeanmoocs.eu/deliverables/D5.2\\_Complement\\_PrivacyPolicy\\_TermsAndUse.pdf](http://project.europeanmoocs.eu/deliverables/D5.2_Complement_PrivacyPolicy_TermsAndUse.pdf)

## **D6.2 Dissemination materials**

Retrieved from:

[http://project.europeanmoocs.eu/deliverables/D6.2\\_Dissemination\\_materials\\_ATTIT.pdf](http://project.europeanmoocs.eu/deliverables/D6.2_Dissemination_materials_ATTIT.pdf)

### **D6.2.1 Dissemination materials**

Retrieved from:

[http://project.europeanmoocs.eu/deliverables/D6.2.1\\_Dissemination\\_materials\\_ATTIT.pdf](http://project.europeanmoocs.eu/deliverables/D6.2.1_Dissemination_materials_ATTIT.pdf)

### **D6.2.2 Dissemination Materials**

Retrieved from:

[http://project.europeanmoocs.eu/deliverables/D6.2.2\\_Dissemination\\_materials.pdf](http://project.europeanmoocs.eu/deliverables/D6.2.2_Dissemination_materials.pdf)

## **D7.1 Market Research Report**

Retrieved from:

[http://project.europeanmoocs.eu/deliverables/D7.1\\_EMMA\\_Market\\_Research\\_Report1.pdf](http://project.europeanmoocs.eu/deliverables/D7.1_EMMA_Market_Research_Report1.pdf)

## **D2.1 Aggregator Description**

Retrieved from:

[http://project.europeanmoocs.eu/deliverables/D2.1\\_Aggregator\\_UNINA.pdf](http://project.europeanmoocs.eu/deliverables/D2.1_Aggregator_UNINA.pdf)

## Websites

*The Digital Library in principle and practice MOOC.*

[https://platform.europeanmoocs.eu/course\\_biblioteca\\_digitale\\_in\\_teor  
ia\\_](https://platform.europeanmoocs.eu/course_biblioteca_digitale_in_teor<br/>ia_)

EMMA (European Multiple MOOC aggregator):

<https://platform.europeanmoocs.eu/>.

Federica Web Learning team: <http://www.federica.unina.it/>