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Editorial

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ABSTRACT

Massive Open Online Courses (MOOCs) are an example of a disruptive technology and are clearly innovative in terms of scale and the level of heated discussion around whether or not they are innovative pedagogically. Academic and mainstream press covering the phenomenon is divided as to whether MOOCs will be valuable to hundreds or thousands of participants. Within this editorial we give a short introduction to the topic of the special issue "Quality in MOOCs" as well as to the contributions, along with the papers related to the INNOQUAL journal's permanent themes.

KEYWORDS *quality, innovation, learning, e-learning, education, training, MOOC, INNOQUAL, editorial, technology-enhanced learning*

INTRODUCTION TO ISSUE 3 AND SPECIAL THEME "QUALITY IN MOOCS"

Methods and approaches such as self-assessment, peer review, user evaluations, benchmarking, standardization, and rankings have become a substantial part of formal education. In recent years, distance and e-learning has developed a sophisticated approach to quality development, with the aim of ensuring a successful experience for learners. This is to say a more or less defined type of registered sometimes fee-paying learners in programmes and courses with formulated learning outcomes. More recently, Massive Open Online Courses (MOOCs) have emerged, challenging existing methods and approaches. Those courses are doubtlessly innovative in terms of scale, but there has been significant debate as to whether or not they are innovative pedagogically. The academic and mainstream press covering the phenomenon is divided as to whether MOOCs are a valuable mechanism for learning for hundreds or thousands of participants.

This is reason enough to dedicated an INNOQUAL special issue on *Quality in MOOC*". Which established elements of quality management can be applied? Or should MOOCs not become subject to quality assurance at all due to its approach to learning?

Bearing those questions in mind, we put a call out for papers which address the following themes:

- Conceptual and theoretical considerations on quality development/management for MOOCs
- Empirical studies assessing the quality of MOOCs/large- and medium-scale evaluations of MOOCs
- Empirical studies on learner achievements and success (e.g. by metrics or surveys) with diversified view what success constitutes for this new form of online learning
- Emerging models for quality assessment in MOOCs

Furthermore contributions to INNOQUAL permanent topics were invited, such as original research on

- The theory of innovation and quality in the field of learning at all educational levels and in all contexts
- The relationship between innovation and quality in learning, education and training
- Advancing the theory of quality development and innovation
- Empirical studies on use and effectiveness of technology enhanced learning
- Innovation through technology enhanced learning
- Integrated innovation and quality approaches

NEW INSIGHTS ON INNOVATION AND QUALITY IN LEARNING

INNOQUAL welcomes contribution to the permanent themes of the journal on the interface of innovation and quality in learning. In our issue, the following manuscripts are presented in this issue:

- Abramov et al. (2014) describe a successful Russia open access digital library, the "Joint Digital Library of Open Educational Resources of Russian Universities" from a technical and conceptual perspective. The paper should is interesting if insights are interesting how to set up and handle a big open access digital library.
- What makes Open Education Thrive? is the leading question of our second contribution. Nagashima (2014) analysed five initiative in open learning from the U.S., UK and Africa to offer a set of implications on success. For this, for example the providers, funding, course development and implementation, as well as scale and use were examined.
- C.M. Stracke (2014) presents the three dimensions learning history, learning

innovations and learning standards tackling the question "How Innovations and Competence Development support the Learning Quality at Workplaces".

- Zourou & Song (2014) present results from a survey among leaders of cross-border cooperation projects concerning social media use and related skills needed. The authors present a training based on their conclusions and suggest policy measures for more successful collaboration and greater impact of project outcomes.

We are happy to see that INNOQUAL is getting increasing international interest and how the journal serves as a forum to share experiences and insights from international perspectives.

ADVANCING KNOWLEDGE ON "QUALITY IN MOOCS"

The focus of this special issue is on MOOCs. It consists of five research papers and four practice-based papers, which together provide a useful summary of some of the state of the art of research and development of MOOCs. Quality in relation to MOOCs is a key issue and the subject of much debate.

The first paper, by Kopp et al., considers whether MOOCs are relevant in an Austrian educational context. It outlines the key barriers to MOOC adoption, derived from a series of interviews with Austrian MOOC stakeholders.

The second paper, by Walker and Loch, focuses on academics' perceptions of the quality of MOOCs. It reports on a study which investigated the views of academics, who participated in MOOCs and in particular what their perceptions of MOOCs were and what was their experience of taking part in a MOOC. The paper describes the perceived benefits and disadvantages of MOOC as experienced by participants. The paper concludes by arguing that MOOCs are a complement to existing educational offerings.

The third paper, by Conole, introduces a new classification schema for MOOCs, based around 12 dimensions, three around the context of the MOOC (massive, open, diverse) and nine around the pedagogy of the MOOC (multimedia, communication, collaboration, reflection, learning pathway, quality assurance, link to formal learning, accreditation, and learner autonomy).

The forth paper, by Ossiannilsson et al., provides an overview of the EFQUEL MOOC project, which was a series of 12 blog posts by MOOC experts, exploring the relationship between MOOCs and quality. The key findings from the blog posts are summarised. The paper lists the following as the key themes from the blog posts: Massive (and often unspecified) target group, mixing formal and informal learners, learning across contexts, declaration of contents, peer to peer pedagogy and MOOCs supporting choice-based learning.

The fifth paper, by Rosewell, describes the Openuped initiative, which focuses on the development of quality benchmarks for MOOCs. This consists of a self-assessment and review quality process via the Openuped portal (http://www.openuped.eu), which is derived from the E-xcellence e-learning quality projects.

In paper number six Piñuel presents UNX, a Latin American knowledge community around the topic of entrepreneurship. Apart from delivering cMOOCs in Spanish and Portuguese, the platform also aggregates other communities of knowledge and offers a Personal Learning Environment for its members.

The seventh paper, by Cormier, provides a reflection on the MOOC on rhizomatic learning (rhizo14) and in particular the types of interactions which occurred in the MOOC.

The eighth paper, by Stacey, considers the pedagogies of MOOCs, focuses on so-called xMOOCs and cMOOCs. It includes a description of the emergence of MOOCs, listing some of the most well-known instances of that course format. It concludes with a set of recommendations for good practice in MOOC design and development.

EXPERIENCES WITH THE NEW-ESTABLISHED "COMMENTATHON"

INNOQUAL is a relatively new journal, which is open access. INNOQUAL is attempting to find new ways to publish and share experiences in science. For the editors, this includes the development of an "open review" process, that allows more transparency, community, and also participation. Open review is sometimes used to mark a traditional reviewing where the name of the reviewers is send to the contributors. This is seen as a possibility to get a better quality of reviews, but an experimental study showed, that this must not be the case (van Rooyen et al. 1999).

In the case of INNOQUAL,"open review" is not meant as de-anonymising the reviewers in a traditional review process, but to open up the reviewing itself. This means, that all contributions are not only reviewed traditionally (blind, the review is not published), but can get comments and reviews in a public area. Technically Web-based Google documents are used to make the commenting and contributing simple. The open reviews has been seen as a good approach to gain feedback from outside.

In the first issues this approach got a lot of interest and also some contributors. Nevertheless, we saw the potential to enhance and foster the reviewing in our public space. INNOQUAL editors wanted to initiate and foster a more engaged communication and discussion within the Discussion Section in the Open Review.

Building on the experiences of "book sprints" and "hackathons" and similar activities in the scene of technology enhanced learning that are kept in a certain time frame (Eber et al., 2014), we developed a new format for the open review that was called "commentathon". The combination of "comment" and "marathon" combines two aspects that we tried to initiate and foster more feedback. First, we wanted to emphasise that we also welcome "comments", instead of full reviews. (Short) Comments, directly written to parts of the texts are usually easier to write then reviews and might be still very helpful. Additionally we explicit marked a certain timeframe as "activity time" which is not very long (but with three weeks it was longer than a usual marathon). Last, but not least official "commentathon partners" should be assure a certain level of activity within the timeframe.

In our first trial, this issue, our partner were:

- EFQUEL Innovation Forum 2014
- Graz University of Technology, Univ.-Doz. Dr. Martin Ebner, Seminar, LV "Technology Enhanced Learning" SS 2014
- University of Education Heidelberg, Prof. Dr. Christian Spannagel, research group „Playgroup", http://playgrouphd.de/gilde/
- Saxon MOOCs United, working group lead by Anja Lorenz (Chemnitz University of Technology) and Andrea Lißner (Dresden University of Technology)

If you have not participating in the open review you might be interested in the consequences and results. The commentathon was a pretty good idea in terms of the quantity of the comments and activities. From nearly every partner at least one person read the paper and made one, but very often, more comments to the text. In addition, the commentathon partners, which are for example also asked their students to serve as a commentator liked the idea to offer a "serious" job as critical support for their students. From the perspective of the authors, the commenting was seen as worthy, some especially asked to thank the open reviewers for their comments.

From the perspective of the editors, the open review was a success. Nevertheless, we will discuss new procedures or potential changes in our process. For example, the use of Google Drive Docs made it possible to change the texts concerning the comments. This might helpful, if the comments are perfectly right and changes "objectively" necessary. Nevertheless, reviewers may have other concerns or even like such changed

paragraphs. Even more confusing (and that was our case) the reviewers got the original contributions and gave feedback to it, whereas the current version was already edited online.

Openness and participation is sometimes a little bit confusing, but we are pretty happy with the engagement and results of the commentathon. With a big smiling THANKS to our first commentathon partners we are looking forward to our next one - and the contributions to the following INNOQUAL issue.

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CONTENT

INNOQUAL
THE INTERNATIONAL JOURNAL FOR INNOVATION AND QUALITY IN LEARNING
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Joint Digital Library of Open Educational Resources of Russian Universities

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ABSTRACT

The paper provides substantial information on an educational Internet project "Single-Entry Window" aimed at integration of open educational resources of Russian universities and other educational institutions. The main components of the portal are an electronic catalogue of educational Internet resources and an open digital library of learning and methodical materials. The brief history and conceptual aspects of the project, the software functionality, the informational components, the structure of metadata, the questions of content management including the approach for resources collecting and evaluating are described and discussed.

KEYWORDS *educational portal, digital library, electronic catalogue, metadata, open educational resources*

INTRODUCTION

Since the mid-1990s the federal education authorities of the Russian Federation has paid considerable attention to the application of ICT in education, the development of telecommunication networks and production of informational and educational resources. The creation in 2002-2004 of a system of large-scale educational portals, including the Federal Portal "Russian Education" (www.edu.ru) and thematic portals for various disciplines and fields of educational activity was an important step in the development of educational content of the Russian Internet (Abramov et al., 2009). The coordination of the works was performed by the State Institute of Information Technologies and Telecommunications "Informika" (www.informika.ru) - the leading organization in Russia in the field of application of ICT in education and science.

The educational portals have evolved as a system of interacting web projects aimed primarily at Russian-speaking people. As a result, dozens of thousands of educational resources of various types were collected and systematized. A review of works on the creation and development of the portals is presented in the book written by "Informika" and UNESCO Institute for Information Technologies in Education, UNESCO IITE (Sigalov and Skuratov, 2012).

As a next step in the development of the national educational information environment a new project named "Single-Entry Window" (window.edu.ru) was designed and launched in 2005 with support of the Ministry of Education and Science of Russia. The portal integrates resources of federal portals, as well resources from regional educational portals, websites of universities and other educational institutions, specialized educational projects and individual teachers. Pilot operation of the first version of the portal was carried out in 2006-2007 (Ivannikov et al., 2007).

With the further development of the project "Single-Entry Window" and the launching of upgraded versions of the portal the international experience in the field of integration of educational resources, creation of catalogues, digital libraries and open educational resources (OER) repositories has been analyzed in detail. Among the publications containing a thorough presentation of the problems and methodology of OER, an analysis of the experience of application of OER in higher education the following works should be especially mentioned (Atkins, Brown, and Hammond, 2007, OECD, 2007, Butcher, 2011, Glennie, Harley, Butcher, and van Wyk, 2012). Important questions of the organization and support of OER projects have been discussed in (Wiley, 2007, Haché, Ferrari, and Punie, 2012). The experience of the development of the OER initiatives in non-english-speaking countries has been widely investigated in the framework of the project of UNESCO IITE (2012). The information brochure published before the World OER Congress (Paris, 2012) provides an overview of the project, and the detailed materials for the individual countries are available on the website of the Institute (iite.unesco.org).

The authors of the project "Single-Entry Window" have also taken into account the substantial experience of a number of well-known OER projects in parts of information structure and functionality, methodology of user interfaces design and content management system. In this connection two main types of projects can be marked out – Internet catalogues providing structured descriptive information (metadata) about web-based educational resources held on other sites (OpenDOAR - www.opendoar.org, Open Education Consortium - www.oeconsortium.org, COL's Directory of Open Educational Resources - doer.col.org, OER Commons - www.oercommons.org, Federal Registry for Educational Excellence, FREE - free.ed.gov, National Science Digital Library, NSDL - nsdl.org) and Digital libraries / OER collections holding content directly on their sites (MIT OpenCourseWare - ocw.mit.edu, MERLOT - www.merlot.org, OpenStax CNX Library - cnx.org, OpenScienceResources Portal - www.osrportal.eu, OpenLearn -

www.open.edu/openlearn/, OER@AVU Portal - oer.avu.org, TeachEngineering Digital Library - www.teachengineering.org, Universal Digital Library - www.ulib.org).

Throughout its existence, the project "Single-Entry Window" has been continuously developed, not only in terms of increasing the size of the content, but also in the view of enhancing and perfection of the functionality and services for users and the Editorial board of the portal (Abramov et al., 2011). Nowadays, the portal includes a catalogue of Internet resources (over 25,000 external links with metadata), an open digital library of learning and methodical materials (over 31,000 materials), news and events, feedback subsystem (forum, questions and answers), statistical data collection, and search subsystem. In recent years, the portal has been one of the largest and the most attended open educational project in the Russian Internet.

ELECTRONIC CATALOGUE OF INTERNET RESOURCES

The integrated electronic catalogue of the portal "Single-Entry Window" contains metadata of educational resources: metadata of external resources published at other portals and websites, and also descriptions of materials of the digital library (in total - over 56,000 resources). The catalogue is indexed according to the following criteria (Figure 1): the level of education (primary, secondary, higher, vocational and additional education), the target audience (student, teacher, university entrant, manager, researcher), resource type (educational sites, learning, instructional, reference, illustrative, research materials, regulatory documents, etc.), the subject field within secondary and higher/vocational education.

The portal "Single-Entry Window" has advanced tools which ensure search according to subject fields together with context search in titles and descriptions of resources, in particular: by author name, key words, words in abstracts, URL (for Internet resources), year of publication and ISBN (for published materials). One can also use the attributive search by organization which is a publisher/owner of resource, and by region of Russia. The search engine takes into account the context and morphology of the Russian language. Search queries can be refined by the use of logical operators and parentheses. The portal has an option of contextual search using the tools of adjustable Google search service, which is rather efficient due to the fact that the resources of the portal are thoroughly indexed in Google. In particular,

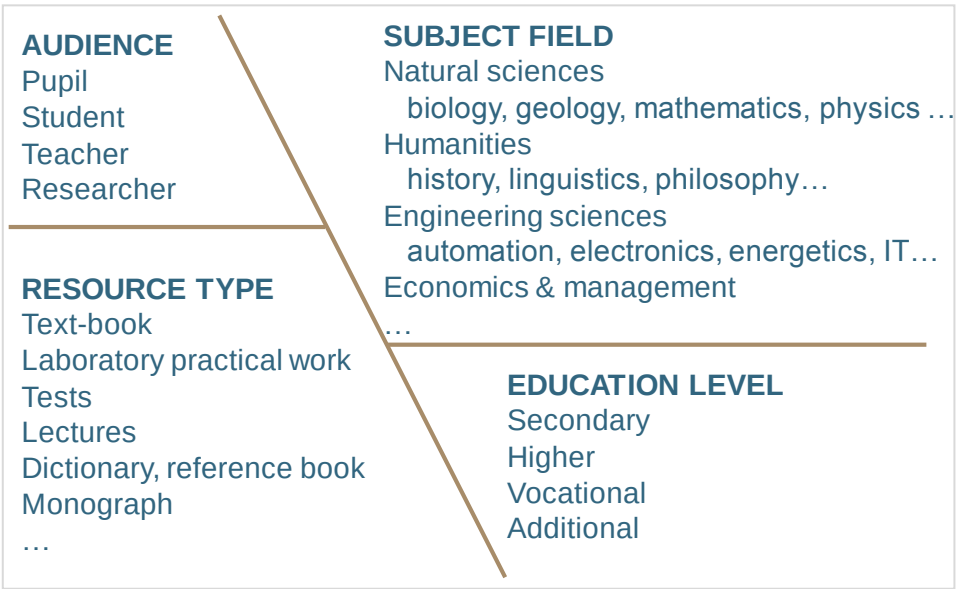

Figure 1 Example of a card with metadata of the Internet resource and feedback features

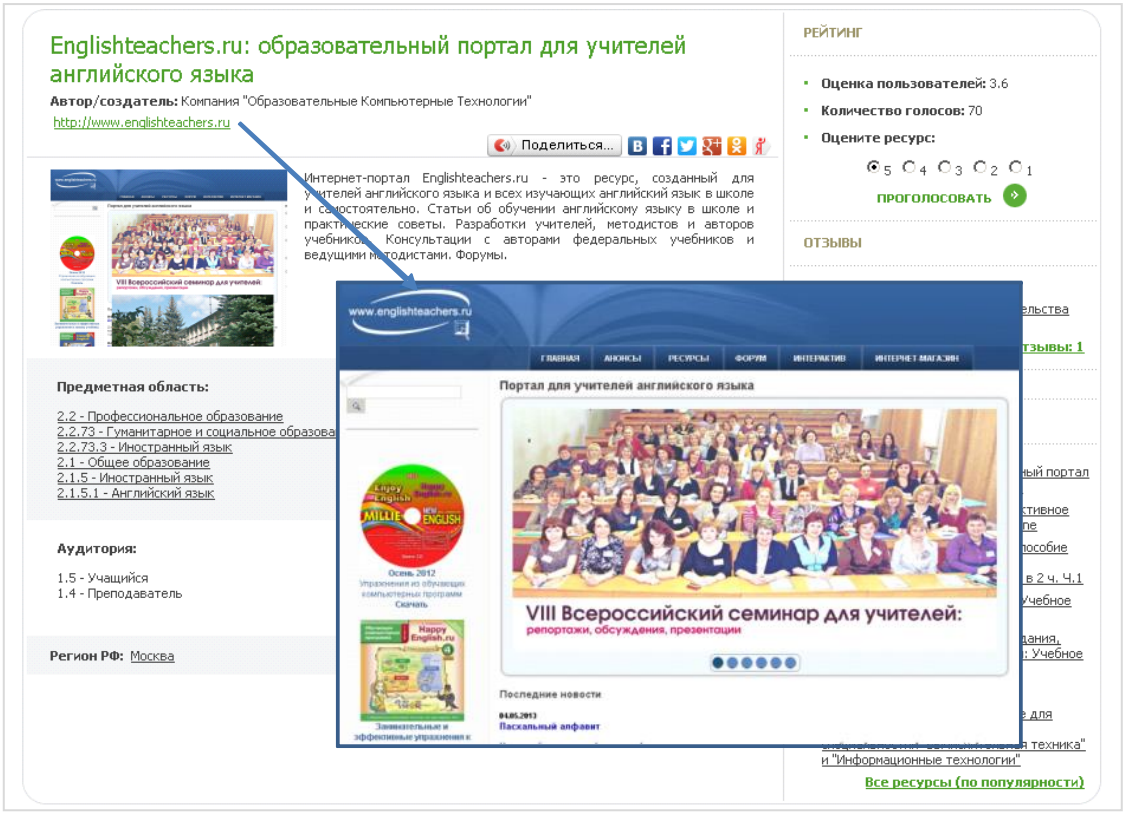

Figure 2 Example of a card with metadata of the Internet resource and feedback features

it gives excellent results of full-text search in publications (PDF-files) in the digital library.

A significant part of resources catalogued (over 10,000) are educational websites: sites of universities, education authorities, scientific research institutes, primary and secondary vocational schools, institutions of extended education, libraries, publishing houses, museums, non-profit organizations, research and educational Internet projects, electronic periodicals, websites providing information support to exhibitions, conferences, competitions and olympiads. Another well-represented type of Internet resources is the open educational resources published at different websites: digital books, databases, encyclopedias, lecture courses, virtual workshops and so forth.

Internet resource in the catalogue is described by the following main attributes: resource title, list of authors/creators, URL, annotation, key words, rubricator fields, region of Russia. An electronic card of a specific resource contents its metadata, feedback features, and a screenshot of the main page of the resource automatically generated by the portal software (Figure 2).

A special subsystem of the portal provides an automated verification of availability of Internet resources presented in the catalogue. During the processing inaccessible resources are made "invisible" to users.

DIGITAL LIBRARY

The digital library of the "Single-Entry Window" portal is the largest repository of open-access full-text learning and methodical materials in the Russian Internet. The digital fund contains over 31,000 materials developed in more than 300 Russian universities and other organizations (research and educational institutes, further training institutions, publishing houses, non-profit organizations). The majority of the library materials are designed for use in higher education. The library contains textbooks, manuals, course materials, lecture notes,

workbooks, methodological materials, learning materials for practical trainings and labs, instructional guidelines, curricula, reference books, monographs, conferences proceedings, etc.

Most of the resources in the digital library have been developed by the departments and research centers of leading educational institutions and are being used in their educational process. One of the main tasks of the "Single-Entry Window" is to integrate the resources, which are of interest to a broad range of participants of educational process, but are dispersed among hundreds of websites of higher schools, faculties and departments (it is often difficult to find them and so they remain inaccessible for teachers and students from other educational institutions).

During the digital collection building a special attention was given to teaching and instructional materials prepared by Russian universities and higher schools and peer reviewed before publication. Most of the materials are in limited editions with no more than one hundred copies, and generally used only within a specific educational institution. The main sources of materials are open digital libraries of higher schools, websites of faculties and departments, and personal pages of teachers containing collections of teaching and instructional manuals.

Original materials stored in various formats (doc, rtf, PostScript, TeX and others) are converted into PDF, described and classified under certain rubrics on the basis of the metadata model adopted for the portal. Description of digital publications includes the following attributes: publication title, list of authors, subject field/discipline, abstract, year of publication, bibliographic description, ISBN, source (university/faculty/department, library, publishing house etc.), resource type, level of education, and hyperlink to a file with full text (Figure 3). A card with metadata contains a field for feedback where visitors can evaluate and comment the material.

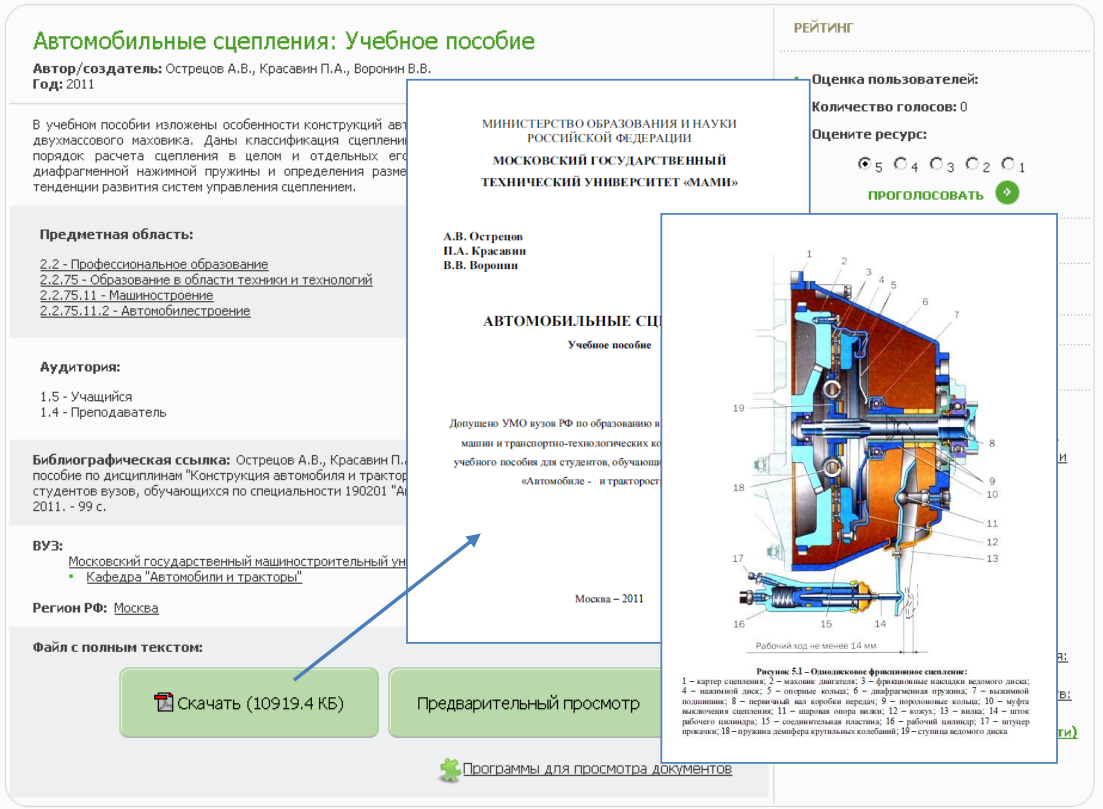

Figure 3 Example of a card with metadata and full-text of material

Full texts are mainly available in the library as a single file in PDF format. Some publications are presented in the library as a collection of files of various formats (html, PDF, DjVu, jpg, gif, etc.). In this case, there is always a "starting" file - an html-document usually designed in the form of a table of content of a certain publication that includes references to other files (for example, chapters or sections).

All full-text materials are physically located at the server of the "Single-Entry Window". Initial version of the portal included only metadata of resources with references to the full-text files available on the websites of their creators or rightholders. However, a weak point of such an approach is the lack of guarantees of stability of Internet addresses, which are references to these files. Changing the structure of site (restructuring, using other web-technologies etc.) often leads to changing of the initial address too. It is not a rare case when some pages with collections of resources or even complete sites disappeared from the global network, especially if these sites of departments / research groups / teachers were made by students and hosted on free servers. Uploading of full-texts to the "Single-Entry Window" library guarantee their availability and integrity.

CONTENT MANAGEMENT PRINCIPLES, INTERACTION WITH AUTHORS AND USERS

The members of the Editorial Board of the portal "Single-Entry Window" are responsible for the whole content management process and interaction with users. The content management and acquisition of new materials are ensured by two ways: through a bulk uploading of resources submitted by universities or their structural units, and by offering of single resources by individual teachers. In the first case, the mechanism of a "bulk" upload based on XML import is used. A contributor prepares a file with a full description of the resources in consistent structured format (XLS-like) and uploads it to the portal, than an editor checks the metadata, converts it to the XML format using a special software and finally initiates the loading of new content to the database of the portal.

In the second case, user fill in a web form which contains all necessary attributes of a resource and submit it to the portal for further checking and approval by a member of the Editorial Board. It is supposed that authors submit their materials to the digital library of the portal for publication in open access. The materials published should be designed for educational purposes (not for commercial). Published and selling books are not converted to the digital format, the digital library does not contain printed books digitized and published in open access on the Internet without receiving the permission from their authors/owners.

The permissions of authors or right holders on open dissemination for educational purposes are received before publishing of the materials in the digital library. Higher education institutions - owners of large collections of materials - provide written consent on publication of digital copies of their materials in the library of the "Single-Entry Window". Permissions to publish materials are also requested by e-mail from authors and officials (heads of departments, project coordinators etc.). The portal is granted a non-exclusive right to publish digital copies of materials; all other rights are kept by the higher school and authors. Digital copies uploaded to the library are in full conformity with original materials provided by authors/right holders. Authors are awarded by certificates confirming publication of their materials in the "Single-Entry Window".

Users of the portal enjoy an opportunity of providing a feedback. They can discuss resources in the Forum section. One can leave a comment on a resource by filling in the review field in resource's card and evaluate the resource using the five-grade scale. All users' messages pass through prior moderation. In the Questions-Answers section, visitors can ask questions related to both the methods of the work with the system and its informational content, and receive answers from the portal helpdesk.

In the presence of a large amount of resources in the database of the portal, visitors can get very extensive lists of resources when navigating and searching for the subject fields. Therefore, the problem of ranking materials with regard to their quality and relevance becomes very important. The authors have proposed a heuristic algorithm for ranking, which takes into account an expert evaluation of the individual material, its attendance (amount of browsing of the electronic card, downloads of the file with full text), and visitors opinions.

DISCUSSION: PROBLEMS AND DEVELOPMENT ISSUES

During the project fulfillment the editors and developers have gained an extensive experience in the content management of the large-scale integrated catalogue and the digital library of educational resources, in effective interaction with universities, with individual authors of the resources, visitors of the portal, and a number of problems have been identified. The work on the further development of the project is aimed particularly at addressing some of these problems.

Until recently, management of the majority of higher education institutions in Russia has not considered developing of educational resources in open access as an important component of the university activities, and the initiatives of individual departments and teachers to create and publish OER have not stimulated. At the moment there is some hope of improvement the situation as far as the new criteria for evaluating the effectiveness and quality of higher education in Russia take into account works in the field of OER and MOOCs. In addition, universities have started to pay more attention to their positions in the rankings such as the Webometrics Ranking of World Universities (webometrics.info), which includes quantity of educational and scientific resources which are available on the websites of universities, in particular indexed by the academic search engine Google Scholar.

As mentioned above, one of the key challenges of the project is the solution of copyright issues when placing materials in open access in the Internet. Most common worldwide approach consists in using open licenses. Unfortunately, today the conception of "open licenses" is absent in the acting Russian legislation on author rights and intellectual property. The overwhelming majority of learning materials published in open access in Russian Internet does not contain guidance on acceptable methods for their use, as is done, for instance, by the family of Creative Commons licenses. In order to promote the ideology of OER and to popularize the open licenses a joint pilot project has been initiated with UNESCO IITE aimed at creation of the Russian-language repository of open-licensed educational materials on the basis of the "Single-Entry Window" platform (Abramov et al., 2012).

Another important direction of the development is the creation of a mechanism for automatic synchronization of the materials in the digital library of the portal ("copies") and source materials ("originals") on the websites of universities and other educational institutions. In the current version of the portal actualization of the materials (removal of outdated materials, replacement it by new versions, etc.) occurs only on the initiative of universities and/or the individual authors and performed by the Editorial Board "on-demand" (manually). At the same time the XML-based methods of automatic updating of the materials are thoroughly studied and planned to realize together with several Russian universities.

In 2013 with support of Ministry of Education and Science of Russia the new project for integration of electronic catalogs of libraries of educational and scientific institutions was started (www.vlibrary.ru). In order to popularize the digital collection of the "Single-Entry Window" portal the issue of possible interactions with this project in terms of placement of the descriptions of the materials of the digital library in the global integrated catalog is considered.

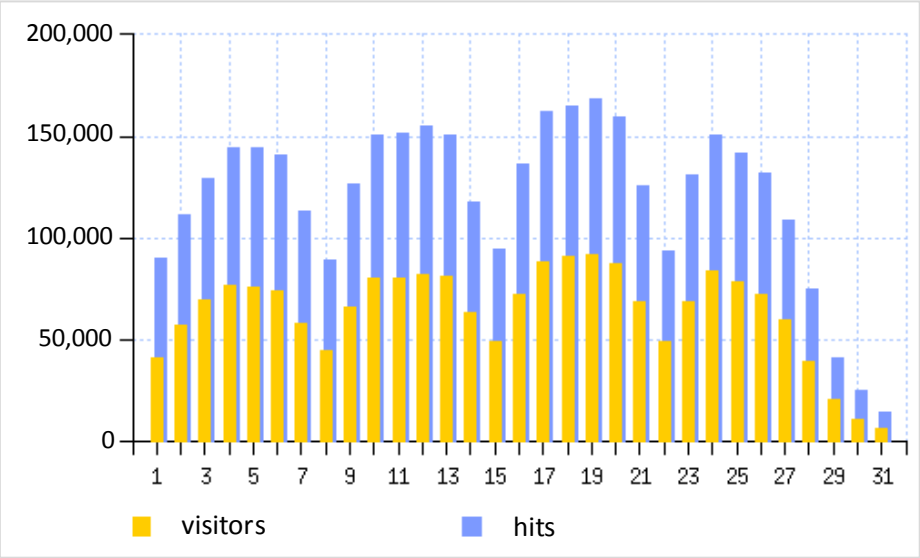

Figure 4 Example of monthly visitor statistics (daily unique visitors, December 2012

It should be noted finally, that today the "Single-Entry Window" is one of the most popular and requested educational projects of the Russian-language Internet. The portal has 100,000 - 150,000 hits and 60,000 - 80,000 unique visitors per day (Figure 4). The analysis of geographical distribution shows that visitors from Russia make up 75-80%, shares of foreign visitors are as follows: Ukraine - 8-12%, Belarus - 3-5%, Kazakhstan - 3-4%, USA - 2-3 %. Informational content of the portal is thoroughly indexed by the leading search engines: Google - over 500,000 pages and Yandex (leading Russian search engine) - about one million pages. The total number of full-texts downloaded from the digital library can be estimated as over 5 million electronic copies per year.

CONCLUSIONS

The portal "Single-Entry Window" which contains resources for all levels of Russian education had been designed and functioning since 2005. The digital library of the portal provides open access to over 31,000 learning and methodical materials developed by hundreds of organizations and thousands of individual teachers. The portal has become a universal "window of access" to Russian educational resources and makes available efficient navigation, search and using of resources in educational practice. The project contributes to the preservation of the teaching and methodological potential of education institutions, facilitates the dissemination of pedagogical experience and promotes wide-sharing of educational resources. The results of the project demonstrate a successful experience of the national initiative in the field of integration and providing access to open educational resources.

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What Makes Open Education Thrive?

Examination of Factors Contributing to the Success of Open Education Initiatives

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ABSTRACT

As the world has come to recognize the importance of open education initiatives, there have been numerous discussions on their impacts on our learning. However, researchers and educators seldom examine factors that influence the growth of each initiative. This study tries to address the importance of recognizing factors affecting the success of open education initiatives by analyzing established initiatives around the world. Through the analysis, it found six factors across three categories: organizational factors (brand/reputation, and funding), pedagogical factors (focus of subjects, and interactivity), and social factors (social view of open education, and localization).

KEYWORDS *open education, Open Educational Resources, OER, MOOC, success factors*

INTRODUCTION

Brown and Adler (2008) explain ways for teaching and learning in the forthcoming decades by employing a term, "long-tail of education" (p. 26). The term, originally used for describing electric commerce industry, illustrates the situation where each learner can select education he or she receives based on interests, no matter how eccentric they are because different organizations today provide educational materials in various subjects, types, and levels on the web (Brown & Adler, 2008). Cutting-edge technologies have made teaching and learning experiences more open, cost-effective, and customized. Open education is a set of global movements that drastically changes the form of teaching and learning, enabled by the advancement of the Internet. Its philosophy is based on a philanthropic idea, "knowledge should be free and open to use and reuse" (Baraniuk, 2008, p. 229). There are two phenomena often used to describe open education movements: Open Educational Resources and Massive Open Online Course.

Open Educational Resources (OER), defined roughly as "any type of educational materials that are in the public domain or introduced with an open license", are considered an essential part of open education movements (United Nations Educational, Scientific and Cultural Organization, n.d). First appeared in 2002, the term OER has gained popularity among educators in the world.

Considered to be one of the branch initiatives of OER, Massive Open Online Course (MOOC), or more precisely xMOOC, has appeared within the last few years. MOOC delivers an opportunity of taking online courses for all people who have access to the Internet ("MOOC", n.d.). These two keywords dominate the open education world today, attracting many educators and learners.

The global stream of open education movements continues to develop, and its expansion creates the situation where no appropriate standards or factors that enable us to compare initiatives exist. This study aims to offer a set of implications regarding success for existing and forthcoming open education initiatives in order to make them further flourished based on careful examinations of different initiatives in the world. By defining success as popularity and sustainability, the author selected five open education initiatives from different counties and regions, both from developed and developing countries. Also, both MOOC and OER initiatives were included for comparison. After the introduction of those initiatives, this study will delineate three categories of success factors that can be used to compare open education initiatives and to improve strategies of each initiative.

OPEN EDUCATION INITIATIVES

This chapter analyzes five initiatives in open education: MIT OpenCourseWare, Coursera, and Udacity in the United States, OpenLearn in the United Kingdom, and OER Africa in the African countries, with special focuses on provider, funding, course development and implementation, and scale and use.

MIT OpenCourseWare

1. Provider

Recognized as a first OER initiative that attracted the entire world, MIT OpenCourseWare (OCW) was launched at Massachusetts Institute of Technology (MIT), one of the leading universities in the United States. In 2001, Charles Vest, the president of MIT at that time, declared that MIT would upload all course materials offered in the institution with no charge and registration ("MIT to make nearly", 2001). It has two purposes in "transforming education": Firstly, MIT OCW enables people in the world, including those who cannot study and gain knowledge, to reach high-quality educational materials (Lerman, Miyagawa, & Margulies, 2008, p. 213). In addition, it surprisingly fosters improvements in teaching and learning by exposing educational resources and exchanging feedback (Lerman et al., 2008). As it calls itself as "publication" rather than "a

distance education program or an online, mediated learning system" (Lerman et al., 2008, p. 215), it does not help learners learn with MIT OCW.

2. Funding

Since the philanthropic view struck a sympathetic chord in many people, MIT OCW has received funding from a lot of foundations, sponsors, and individual supporters. The list of funding organizations includes The William and Flora Hewlett Foundation, The Andrew W. Mellon Foundation, and Google (Massachusetts Institute of Technology, n.d.a). Annual running cost for MIT OCW is about 4.3 million dollars, with 72% covered by The William and Flora Hewlett Foundation and The Andrew W. Mellon Foundation (Normandin, 2009).

3. Course Development and Implementation/Scale and Use

Since the OCW project uploads the courses offered within the campus, materials offered on OCW website are almost the same as ones in campus. As for the scale, the impact of MIT OCW is immeasurably large. Statistical data by MIT OCW website show that over 2 million visits per month are recorded and the number of courses offered has exceeded 2,000 in November 2013 (Ng, 2013). MIT OCW has expanded to the world, provoking 342 mirror sites, which refers to "complete cop[ies] of the entire OCW publication to regional or local users where internet access is limited" (Margulies, 2009, p. 36). Also, there are 1,018 translated courses of MIT OCW. Courses are translated into eight languages (Massachusetts Institute of Technology, n.d.b).

Coursera

1. Provider

In 2012, two Stanford professors, Andrew Ng and Daphne Koller, created a for-profit MOOC platform called Coursera. Its goal is "to take the best courses from the best instructors at the best universities and provide it to everyone around the world for free" (Koller, 2012). Thanks to the technological development, Coursera enables instructors in the world to teach tens of thousands of students at the same time in various subjects (Shah, 2013). As the largest MOOC provider in the world in its numbers of courses offered (Shah, 2013), it provides online courses from established universities around the globe (Coursera, n.d.a).

2. Funding

As a social entrepreneur business, Coursera struggles to develop sustainable business models. Though they have not been sufficiently established, there are two models: intermediary business between students and employers seeking students, and charging in certificates.

The former revenue model is called "Cousera Career Service" (Jones-Bey, 2012). Utilizing analytical data collected by learners, Coursera introduces companies to learners when they seem to be matched in their interests. If partnered companies given a list of students with high performance show an interest to contact with one of them, Coursera sends an email to learners asking for "approval" of providing personal information and connect them with the company (Empson, 2013). In this process, the company pays a fee to Coursera for intermediation, some of which goes to colleges offering courses (Young, 2012).

The latter one, named "Signature Track" system, is considered to be more profitable and sustainable than "Coursera Career Service" (Coursera, n.d.b). In Coursera's courses, learners can earn certificates of achievement for each course if they succeed in completing course work. Although those certificates do not mean course credits, they prove learners' accomplishment and skills they earned. In the process, Coursera charges between $30 and $100, depending on courses, for issuing those certificates. It also offers financial aid for those who cannot pay for a fee (Empson, 2013). Many students who earned certificates make them visible on their curriculum vitae or social media (Coursera, n.d.b).

3. Course Development and Implementation

According to Audsley, Fernando, Maxson, Robinson, and Varney (2013), Coursera employs several effective pedagogies in their online learning. For instance, many lectures last about 10 minutes, followed by a small quiz. Students cannot move on to a next part of lectures until they answer correctly. Repeating this circulation makes learners keep their motivation for study (Glance, 2013). While taking a course, students are welcome to write comments on discussion boards. Also, Coursera develops peer assessment method for particular assignments, such as essays in the courses of humanities. Moreover, learning is never limited within online environment. In many places in the world, students set their "meetups" to gather and exchange their learning stories (Moran, 2013). These features all make learning experiences interactive, letting students enjoy course both online and offline.

4. Scale and Use

The number of course accounts for 47% of all courses offered via various MOOC in the world and students learn from 190 countries (Shah, 2013). Also, Coursera has established partnership with thirteen companies, universities, and other organizations in order to provide translated courses into eight local languages ("Coursera Partnering with", 2013). Despite these facts, some studies cast doubts on Coursera's attainment. For example, Christensen, Steinmetz, Alcorn, Bennett, Woods, and Emanel (2013) reported that most of the learners in Coursera's courses have already high level of degrees and their jobs, implying that Coursera still have to consider how they offer courses to truly educate the world.

Udacity

1. Provider

Udacity is one of the well-known MOOC initiatives. The co-founder, Sebastian Thrun, made his Artificial Intelligence course at Stanford available to anyone in the world, which eventually enabled more than 160,000 people to register (Carr, 2013). This result made up his mind to launch Udacity. Unlike Coursera, Udacity does not only provide courses by university professors, but also by people in a business sector (Udacity, n.d.).

2. Funding

Udacity has gained funding from some venture capitals, but it has also sought business models (Perez, 2012). Even though Udacity's concrete funding models cannot be fully obtained by literature review, it is reported that it employs a similar headhunting system as Coursera (Young, 2012). Udacity has students' data and it searches for people who fit to job offers from companies. When offering the data to companies, it not only provides grades, but also what is called "softer skills" (Young, 2012). "Softer skills" are those that cannot be reflected on grades, such as the number of posts to discussion boards. Thrun noted that those skills are sometimes more important than grades for companies, which need a person who is good at managing different skills in complex situations (as quoted in Young, 2012). Although such funding models are conducted, it is uncertain whether they can be sustainable enough to continue making a profit.

3. Course Development and Implementation/Scale and Use

Rather than offering a variety of courses, Udacity focuses on subjects related to science. The offered areas of a subject are Computer Science, Mathematics, Science, Design, and Business. Thirty-one out of thirty-three courses available as of January 19, 2014 are those in Computer Science, Mathematics, and Science (Udacity, n.d.), and many courses have been translated into multiple languages (Crotty, 2012). As a computer scientist, Thrun aspires to expand the opportunity of learning computer science so that anyone can become a computer scientist (Norman, 2013). Aligned with that dream, Udacity established a partnership with San Jose State University in California to integrate Udacity's courses in the university's curriculum. As for the result, many media mentioned that the experiment

had ended up in a failure, leaving a relatively low pass rate compared to a traditional learning style. It was reported that only from 20% to 40% students passed the courses, whereas 75% students passed in the traditional courses (Ferenstein, 2013).

After a continuous process of trial and error, Thrun could not ignore a low completion rate and finally announced in late 2013 that he gave up its original MOOC model (Chafkin, 2013): "We were on the front pages of newspapers and magazines, and at the same time, I was realizing, we don't educate people as others wished, or as I wished. We have a lousy product" (as quoted in Chafkin, 2013). However, Thrun did not consider the result to be lamentable. Rather, he changed objectives and decided to offer new service: instead of continuing what it offered, renovated Udacity prepares options for learners, such as paid certificates and offering tutors (Shen, 2013). Furthermore, it strengthened the partnership with companies in technology fields to provide knowledge and skills required in a job market in the field (Shen, 2013).

OpenLearn

1. Provider

In 2006, The Open University in the United Kingdom (OU), an established distance education institution known for its long-standing delivery of education, launched OpenLearn (Gourley & Lane, 2009) in order to promote the provision of OER and examine the possibility of OER. OpenLearn is unique in that OU sets four clear objectives for OpenLearn project: "enhanced learning experiences for users", "greater involvement in higher education by under-represented groups and empowerment for various support networks that work with them", "enhanced knowledge and understanding of OER delivery", and "enhanced understanding of sustainable and scalable models of OER delivery" (Gourley & Lane, 2009, p. 59). To offer high-quality teaching and learning, OpenLearn provides two features in its website: LearningSpace and LabSpace. The former is developed for learners, offering the collection of various OER by OU. Learners can manage and customize their learning processes based on what they want to or have to study (McAndrew & Santos, 2008). The latter one, created for educators around the world, promotes educators to exchange materials so that many OER can be adopted in various educational settings (Gourley & Lane, 2009).

2. Funding/Course Development and Implementation

OpenLearn has been supported by The William and Flora Hewlett Foundation since its establishment (Fleming & Massey, 2007). Regarding the courses of OpenLearn, it adopts Moodle, an open source learning management system (LMS), to run the repository. As of 2007, LearningSpace "hosts over 2,500 hours of learning materials" and LabSpace hosts "4,500 hours [of learning materials]" (Fleming & Massery, 2007, p. 9).

3. Scale and Use

Despite the lack of information on how OpenLearn is utilized, it is estimated from the report in 2007 that 5 million people from 160 nations visit the website (Fleming & Massey, 2007). Also, what is notable of OpenLearn is that it is not only utilized, but it also encourages educators to return the revised contents so that OpenLearn can keep improving (Fleming & Massey, 2007).

OER Africa

1. Provider

As a project by South African Institute for Distance Education (SAIDE), OER Africa was launched for the purpose of enhancing the quality of contents of OER, as well as enabling educators to remix and utilize OER (Ngugi, 2011). Because many African nations have struggled with scarcities of teachers, facilities, and educational materials, open education has been recognized to be a potential solution for today's African education (Harley, 2011). Although some parts in Africa do not still have the adequate Internet access, making open

education limited to certain areas, OER Africa has attempted to reduce inequality actively through OER.

2. Funding/Course Development and Implementation

Rather than creating many original resources, OER Africa seems to work as a repository providing the gateways to various OER around the world. The OER there are used mainly in African educational settings because of OER Africa's focus on Africa. It has been funded by one of American foundations, The William and Flora Hewlett Foundation. Thanks to the support, OER Africa could develop its OER repository (Harley, 2011). Instructors who agree with the idea of OER Africa are actively trying to opening up their educational materials because they recognize the benefit that OER Africa focuses on the education in Africa. As there are not enough educational materials that can be used in teaching and learning, instructors are forced to teach knowledge by lectures. If OER are introduced in this context, instructors are allowed to utilize class time for other activities, such as discussion and problem solving, instead of lecturing (Harley, 2011). To date, OER Africa has about 2000 modules, and it continues to develop educational materials aiming to improve the education in Africa (OER Africa, n.d.a).

3. Scale and Use

Since OER Africa focuses on the education in Africa, it seems that most users are from African countries searching for educational materials. There are many on-demand courses, such as those on agriculture and teacher training (Nikoi & Armellini, 2012). The funding by The William and Flora Hewlett Foundation enables OER Africa to conduct research on the course implementation in African countries (Harley, 2011). Those research initiatives have tried to both implement OER and promote further expansion of OER culture. Thanks to the engagement, some institutions in Africa began to develop policies on OER, which was considered a leap of OER status in Africa (Harley, 2011).

All of the initiatives introduced are summarized below for comparison (see Table 1).

	Provider	Funding	Course Development and Implementation	Scale and Use
MIT OCW	A leading university/ The pioneer of the movement	Foundations/ Supporters	Lectures at MIT	Worldwide/ Translated courses
Coursera	Two Stanford professors/ Leading universities	Business models	Created for MOOC/ Interactivity	Worldwide/ Translated courses
Udacity	A Stanford professor	Business model(s)	A few number of disciplines	Worldwide/ Integration into classrooms
OpenLearn	Open University UK	Foundation(s)	LMSs/Interactivity	Worldwide
OER Africa	SAIDE	Foundation(s)	Repository	Mainly for Africa

Table 1 Comparison of each initiative from four aspects: provider, funding, course development and implementation, and scale and use

SUCCESS FACTORS

Based on the previous chapter, this chapter discusses six factors that have affected successful implementation of OER and MOOC initiatives in three categories: organizational factors, pedagogical factors, and social factors.

Organizational Factors

1 Brand and Reputation

As Atkins, Brown, and Hammond (2007) mention, a brand or institutional reputation is an important component for promoting OER or MOOC provision and utilization. It influences two features of open education movements: the impact and quality of contents.

First, a brand or reputation makes initiatives widely spread, covered by media, and known by people in the world. High-ranking universities or traditional universities begin projects, which catch the attention of educators and learners. Because publicity is a requisite first step towards adopting or learning with initiatives, delivering an impact and capturing the attention of interested parties leads to the success of open education movements. For example, MIT OCW is widely accepted as the initiative that most directly paved the way for current open education movements. However, there had been projects that tried to make educational materials available on the Internet before MIT announced OCW initiative in 2001. All of these, however, fell short of the success that MIT OCW has enjoyed. For instance, Multimedia Educational Resources for Learning and Online Teaching (MERLOT), a collection of OER created by educators around the world so that teachers could refer to various materials, was started by California State University Center for Distributed Learning in 1997 (Serwatka, 2011). To this point, Iiyoshi and Umeda (2010) argue that the announcement by MIT, a university with a high reputation in the world, was the biggest factor behind the impact it achieved.

Furthermore, an institution's brand also affects the perceived quality of contents it offers. Hylén (2006) argues that users believe that provided contents have a higher quality when the institution offering such resources gains a better reputation or establishes its brand. As Weller (2010) points out, people tend to believe that high-quality materials are costly. This means that users lose one of the important keys for ensuring quality of educational materials because OER are free. Thus, they are likely to rely on other keys, such as a brand or reputation. There is also the data illustrating this tendency. Clements and Pawlowski (2011) asked teachers about their ways of finding quality OER on the web, and found that 58% of participants answered that they looked for resources offered by institutions that have "a good reputation" (p. 9). Since it is hard for adopters to find appropriate OER among many due to the lack of standards or metrics that can be used for evaluating OER, a brand or reputation becomes a key factor for adoption among users.

2 Funding

Funding is an essential factor for continuous improvements of courses, managements, and other aspects within initiatives to ensure their sustainability. Because open education initiatives seek to make educational opportunities freely available to anyone, they do not charge users for taking courses or using materials in their own teaching and learning. The process of achieving this mission, however, does incur a cost. Laborious efforts in other parts of projects, such as creating, organizing, and managing courses, need staffs and facilities. As illustrated in the previous chapter, each initiative has strived to find feasible funding strategies to maintain sustainability.

Among several strategies, donation is the most influential in the open education field today. Iiyoshi and Umeda (2010) state that several American foundations, including The William and Flora Hewlett Foundation, The Andrew W. Mellon Foundation, and Bill & Melinda Gates Foundation, are the driving forces behind the prosperity of a variety of open education movements. As shown in the previous chapter, MIT OCW received donations from The William and Flora Hewlett Foundation and

The Andrew W. Mellon Foundation, and OpenLearn and OER Africa are supported by The William and Flora Hewlett Foundation. These foundations serve as "incubators", actively enabling "big ideas" to advance (Iiyoshi & Umeda, 2010, p. 80). Without this basis, open education movements could not have flourished (Iiyoshi & Umeda, 2010).

Wiley (2007) emphasizes the importance of funding for the sustainability of open education initiatives. He concerns the future of the initiatives, especially those run by donation, because they do not have sustainable funding strategies. In order to ensure the sustainability, strategies on funding need to be examined in terms of future prospects. Therefore, it is required not only to produce donations from foundations, but also to develop business models. In that respect, Coursera and Udacity are trying to shore up their future.

Pedagogical Factors

1 Focus of Subjects

Deciding which subject to offer is a factor inevitably affecting the success of open education movements, which is driven by learners' reasons for taking courses. Among many courses in diverse subjects offered in MOOC, it is found that learners are inclined to have different reasons for taking different courses. Christensen, Steinmetz, Alcorn, Bennett, Woods, and Emanuel (2013) discovered that while 39.0% of students who took Coursera's science-related courses, responded that they took the courses for acquiring knowledge for their jobs, only 11.9% of students studying humanities courses said so. Conversely, whereas only 48.9% of learners in science courses answered that they took courses because of a personal interest, 74.6% of people in humanities courses responded that they studied in Coursera for their interests (Christensen et al, 2013). These findings imply that there is quite a strong tendency that learners' studying objectives depend on the subjects of offered courses.

Regarding the focus of subjects, Udacity is of importance because it specializes in offering courses related to sciences. This feature makes Udacity special among other MOOC platforms. In other words, by focusing on high-quality science courses, Udacity meets the demand of the people who want to study science, and thus finds itself in a key position among several open education initiatives.

2 Interactivity

As one of the highly valuable components in open education movements, interactivity cannot be ignored. Since studying with MOOC or OER tends to be individual, interactivity can be a key for the sustainable development of projects. In general, MOOC initiatives are better at providing interactivity than OER projects, for the latter do not usually support users' personal learning-and-teaching. Among the MOOC initiatives, Coursera seems to surpass the rest. As shown, it provides some features to enhance interactivity both in courses and learners' own countries. Learners can feel connections with peers and instructors as they can be connected on and offline.

Social Factors

1 Social View of Open Education

Social recognition of open education matters when considering the success of open education. In other words, how society responds, recognizes, and accepts the idea of open education influences the evolution of the open education movement.

In the United States, a philanthropic view has been the prime mover of open education. A strong philanthropic philosophy in opening up knowledge has been shared among providers of open education, such as universities and individual educators, not to mention American foundations. MIT OCW is a typical example that recognizes the impact of philosophy on its prosperity. Since its establishment, MIT has contributed to the society in various aspects, particularly in technological fields, in a way that disseminates knowledge to the world (Lerman, Miyagawa, & Margulies, 2010). The

philosophy of OCW, "the knowledge is a public good", which conjuncts with "the culture of MIT" that greatly promotes "open sharing of knowledge", significantly facilitated the OCW initiative (Lerman et al, 2010 p. 213). This accordance between MIT's and MIT OCW's philosophies enabled the committee to obtain other faculties' approval, upload their knowledge, and move forward as MIT's project.

In Africa, educators and learners recognize the value of open education movements and appreciate the provision and implementation of those initiatives (OER Africa, n.d.b). People in African countries are interested in cutting education costs and creating high-quality materials due to the lack of human resources and educational resources (OER Africa, n.d.b). Thus, social demands drive the movements in African countries.

The situation is different in other countries. For example, in Japan, whether the idea of open education is accepted or not is greatly influenced by the Japanese society. First, because a lot of Japanese faculty prefer closed culture in academia, Japanese universities have a hard time meeting their approval for opening up lectures. In addition, the Japanese society does not fully accept lifelong learning. According to the opinion poll conducted by Japanese government in 2012, many of those who enjoyed lifelong learning activities answered that they did because of their interest while few people said that they learned in order to gain certain skills (Hirabayashi, 2012). This is an implicative result when considering open education. For, Iiyoshi (2013) argued that there is a tacit understanding that people should try not to make a mistake in Japan, and this notion does not accept the idea that open education serves as a "safety-net" that enables people to recover in their lives. That is to say, open education seems to be less necessary in the Japanese society than other countries in the world. As few Japanese people try to improve their skills in order to get a better job, many Japanese do not need an opportunity of receiving online education. In this society, Iiyoshi (2013) stated, it is not easy to make open education works effectively.

2 Localization

Even though the opportunity to access learning materials has been expanded, it does not necessarily mean that it works well in every part of the globe. As Wiley (2005) writes in his blog that "the future of open education" depends on the success in localization, it has a potential to change the direction of open education initiatives. To get around disparities in technological infrastructure and differences in language, some initiatives have attempted to localize their courses and have gained popularity. The prime example is MIT OCW, which has 342 mirror sites and over one thousand translated courses. Countries such as Taiwan have actively engaged in translating courses. Opensource Opencourse Prototype System in Taiwan, referred to as the OOPS project, has started in 2004 to translate OER into Chinese, as most of the OER on the web are in English (Huang, Lin, & Shen, 2012). Another example is Coursera and Udacity. Partner organizations have translated their courses into multiple languages and enabled people in each nation to learn courses in their local languages. Moreover, meet-ups of Coursera held around the world also allow learners to exchange their experiences using Coursera: this dialogue can facilitate the development of local open education communities that may promote further learning.

	Brand/ Reputation	Funding	Focus of Subjects	Interactivity	Social View	Localization
MIT OCW	High	Foundations/ Supporters	Wide	Low	U.S.	O
Coursera	High	Business models	Wide	High	U.S.	O
Udacity	Low	Business model(s)	Narrow	High	U.S.	O
OpenLearn	High	Foundation(s)	Wide	High	N/A	X
OER Africa	Low	Foundation(s)	Narrow	Low	Africa	O

Table 2 The success factors of each initiative in comparison with each other

As shown above, these six factors influence the initiatives and have led them to the success. None of the initiatives has the same set of factors, and this diversity makes each initiative unique, letting them flourish in the respective countries and fields (see Table 2).

CONCLUSION

In the chaos of various open education initiative, it is quite hard to identify what directly and indirectly makes each initiative success or failure. Since the launch of MIT OCW, enthusiasts around the world have tried to create their unique initiatives in order to enhance the quality of learning experiences by sharing OER or offering online courses, but almost no one has focused on how to compare and contrast those initiatives from other perspectives. Now is the time to capture the current status of open education with the focus on factors affecting the success of initiatives. This paper analyzed famous initiatives in the world and found six essential factors that enable other initiatives to re-evaluate their strategies and also leave important implications for future projects we will have. Although it has several limitations, such as the need for more initiatives for analyzing and the differences on the amount of information gained for each initiative, further studies can accelerate the research on examining factors of the success of open education.

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Internet and social media communication skills: addressing the needs of LLP project teams

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ABSTRACT

The effective use of Internet and social media tools and their embeddedness in a communication strategy are becoming fundamental to the success of cross-border cooperation projects, such as those subsidised by the Lifelong Learning Programme (LLP) of the European Commission. This paper reports on the results of a Europe-wide survey on skills needed by members of LLP projects in order to communicate their project results and engage with the target audience.
The results of the survey show trends in the use of social media based digital communication strategies, as well as areas in which skills need to be developed. They also allow us to identify digital communication opportunities that are of interest in the context of dissemination of project results, despite the fact that little attention is drawn to them by survey respondents. We discuss how the findings of the needs analysis have been used in the design of the training components (materials and courses, face-to-face and online). We conclude with some priority activities that we believe are needed at policy-making level, to allow project results to increase their visibility and impact.

KEYWORDS *project management, social media, social web, communication strategies; professional training; European projects*

SETTING THE SCENE: DIGITAL COMMUNICATION SKILLS OF CROSS-BORDER EUROPEAN PROJECT TEAMS

Cross-border European cooperation is fostered by several national and pan-European funding bodies on various topics of interest (examples include the European Commission's Horizon 2020 for research, the Lifelong Learning Programme (LLP) and the Erasmus+ programme for education and training). In general terms, project teams applying for a grant are asked to elaborate a communication plan covering the approaches and tools that will be developed with the aim of spreading the project results to the right target groups and with the maximum impact for these target groups. Therefore, plans for dissemination and exploitation of results (or, in EU terms, "valorisation of results") are expected to be part of the full project proposal and they are subject to the evaluation criteria set by the funding body. For the LLP programme for instance, one of the eight award criteria is dedicated to the "quality of the valorisation plan". The purpose of this criterion is that the "planned dissemination and exploitation activities will ensure optimal use of the results beyond the participants in the proposal, during and beyond the lifetime of the project" (EACEA, 2012: 18). To meet this criterion, the application has to include "a plan for the exploitation / dissemination of results with appropriate and adequate resources that:

- clearly identifies interested sectors and end users, and their needs ;
- ensures consultation and involvement of end users in the project life and
- demonstrates clear activities throughout the project to ensure that the results / benefits will be spread throughout and beyond the consortium.

The exploitation plan includes measures to ensure that the benefits will endure beyond the life of the project and assures sustainability of project results" (EACEA, 2012:18).

While valorisation plans are mandatory, with their quality being key to the success of the project proposal, the digital skills of project management teams for building sustainable valorisation plans are still open to question, with applicants possibly lacking adequate skills in this area. It should not be forgotten that project teams competing for European cooperation projects focus on expertise in a specific area or discipline in response to the call for proposals, with communication and valorisation strategies regarded as secondary activities, probably due to their transversal nature.

Having been involved in LLP projects for several years, we (the Web2LLP project team) felt that there was a need for project managers and members to upgrade their technology and communication skills and competences. This applied both to the effective use of Internet social media tools, and to their embeddedness in the communication strategies that are fundamental to the success of an LLP project.

More precisely, we realised, through informal exchanges with colleagues at the Info days organised every year by EACEA (which manages programmes and activities on behalf of the European Commission) and other project meetings, that although the social web is a reality that cannot be disregarded, its communication potential for LLP projects has not so far been exploited. This is due to a) a lack of information and appropriation opportunities regarding ways of effectively using these tools as part of a communication strategy, and b) lack of visibility of good practice regarding what is reasonable and achievable in an LLP context. Moreover, although communication is a fundamental part of every LLP project proposal (see above), the funding body does not give applicants any guidelines on how to set up a coherent valorisation strategy for a project.

These initial considerations gave birth to the Web2LLP project which aims to help LLP

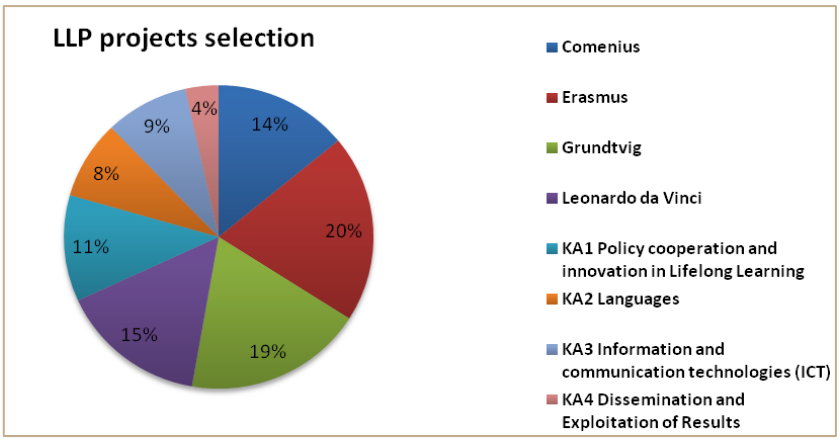

Figure 1 Overview of the selected 150 LLP projects by action

project teams to make better use of the web and social media by improving their skills and competences. The Web2LLP project ("Improving Internet strategies and maximising the social media presence of LLP projects", http://www.web2llp.eu/) is a two-year project running from January 2012 to December 2013, co-funded by the European Commission under the KA4 action of the LLP programme. The partnership consists of six project members: University of Luxembourg (Luxembourg, project coordinator), Web2Learn (Greece, project manager and WP leader), ATiT (WP leader), Coventry University Enterprises (WP leader), Pixel (partner) and PAU Education (partner).

IDENTIFYING THE TRAINING NEEDS OF LLP PROJECT TEAMS IN TERMS OF DIGITAL COMMUNICATION

In order to identify the training needs of LLP project teams we conducted a two-step analysis. Firstly we ran a desktop research to understand the current practice of running LLP projects in terms of valorisation plans enhanced by social networking technologies. Secondly we conducted an online survey to understand the actual needs of project teams in terms of skills required to establish a web strategy including social media tools. The results of the desktop research are synthesised as these have been discussed in a previous paper (Song & Zourou, 2012). More emphasis is given to the results of the online survey.

Background: results from the desktop research

For the desktop analysis we consulted EACEA project compendia and the ADAM database[1]. All sub-programmes were chosen except the Jean Monnet one, due to the lack of at least one digital communication platform such as a website. Out of 289 LLP projects selected for funding in 2010, our desktop research focused on a sample of 150. The methodology adopted (figure 1) was designed to cover equally a) all LLP sub-programmes (or Actions) and b) all project types, i.e. multilateral projects (MP) and networks (NW).

We sampled across LLP sub-actions with the aim of providing a comprehensive overview of the current status of social media in use, regardless of the different objectives of each sub-programme. An overview of the 150 LLP projects by sub-programme is shown above.

The next step was the categorisation of tools relevant to LLP projects. Among typologies of social media tools, the one elaborated by Conole & Alevizou (2010) best fits this particular context and has been used as the basis for building our typology:

[1] http://eacea.ec.europa.eu/llp/results_projects/project_compendia_en.php & http://www.adam-europe.eu/adam/homepageView.htm

1. social networking sites; (i.e. Facebook, LinkedIn, Ning)
2. blogs
3. microblogging tools; (i.e. Twitter)
4. presentation repositories (i.e. Slideshare)
5. video sharing tools; (i.e. YouTube, Vimeo)
6. social bookmarking applications; (i.e. Diigo, del.ici.ous)
7. web 2.0 picture repositories (i.e. Picasa, Flickr)
8. RSS feed (allowing users to receive messages on their RSS aggregator, i.e. Google reader)

We added one more application that we considered useful to LLP projects:

9. shared web 2.0 public libraries (i.e. ObjectSpot, Mendeley).

Finally, we added two more functions enhancing social media presence that we considered useful in our context:

10. easy sharing and bookmarking services (e.g. the "Add this" button) allowing users to share a static page through web 2.0 tools and
11. a feed embedded in the website enabling content flow from social media applications (i.e. from Twitter, Flickr, Picasa).

According to the results, 7% of the sample did not have an Internet presence at all, raising some doubts about project communication practices. Social networking sites are by far the most commonly used type of application, with 31% of projects having one (4% of projects used more than one social networking site).The most popular SNS is Facebook (43 projects), followed by LinkedIn (8 projects) and Ning (2 projects).

Regarding microblogging tools, Twitter, the most popular in our sample, scores 15%, making Twitter the most widely used application after Facebook. Although less popular, 7% of LLP projects keep a blog.

When it comes to media sharing, the LLP projects analysed opt for YouTube and Vimeo for video sharing, Flickr and Picasa for image sharing. The proportion of media sharing tools embedded in a website is 8%.12% of projects offer an RSS service allowing users to receive content updates without visiting the project website each time. Only one project uses a social bookmarking application (0.6%), while none of the 150 projects uses Presentation repositories such as Slideshare (0%) or a web 2.0 public library such as Zotero or Mendeley (0%). Widgets enabling rapid sharing of content through social networks, via the AddThis button or similar widgets were used in almost 16% of our sample. A feed, embedded in the website from a social media application such as Twitter, Flickr or Picasa, is used by 5% of projects. The results were inconclusive in terms of differentiation of practice developed by multilateral projects (MP) compared to networks (NW) or by type of LLP sub-action.

To sum up, results of the desktop research show (very) limited use of Internet and social media based communication and exploitation practice. The overall limited exploitation of social media applications also highlights the apparent discrepancy between the communication means of LLP projects and the web 2.0 communication tools that can be considered nowadays as mainstream interaction means. This indicates a possible mismatch between communication tools set up by projects and the general context of interaction with digital technologies. One of the reasons may be the slow integration of social media tools between 2010 (the year of the LLP projects selection) and today. More insight into the actual needs of project teams in terms of valorisation of results is given in the next section.

Designing the online survey

Based on a state-of-the art regarding practices developed in LLP projects, we built an online survey aiming to identify a) tools and practices they find appropriate for communication and valorisation of their project and b) their specific training needs. Results of the online survey were fundamental to the response to these training needs through targeted courses and materials. The need analysis questionnaire consisted of four sections:

1. Profile and involvement in LLP projects
2. Experience on Internet and social media in general
3. Experience on Internet and social media for project communication and dissemination
4. Open-ended questions: highlighting actual needs and future expectations.

In choosing social media applications, we applied the same typology as in the desktop research. We added one more category, which is a recent trend on the web, online curation tools, which enable users to select online content, edit it and share it.

RESULTS FROM THE ONLINE SURVEY

Target audience

The call for participation in the survey was launched in March 2012. It was sent to a large number of running projects across all sub-actions of the LLP programme. The survey polled 128 project managers and partners involved in LLP projects across Europe between March and June 2012. The profile of participants is shown in figure 2, with over 80% of respondents currently involved in running LLP projects.

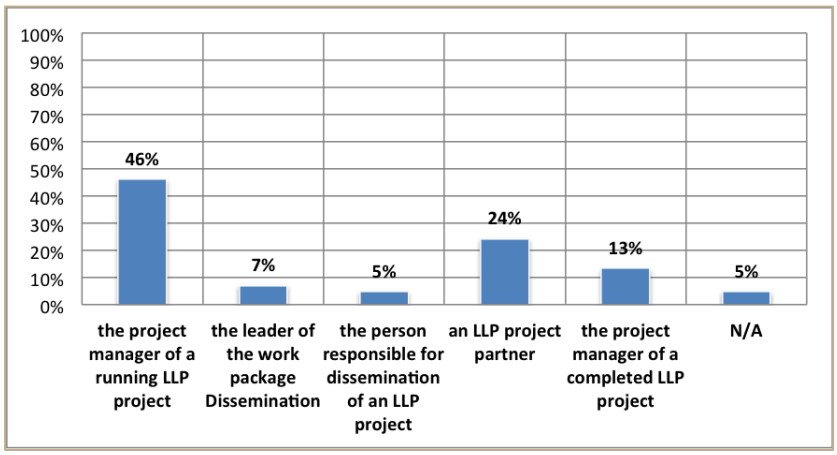

Figure 2 Overview of the 128 participants (percentages)

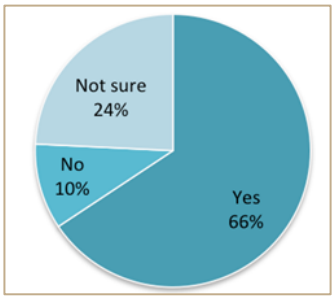

Figure 3 Question "Do you intend to submit an application for the next Call for Proposals?"

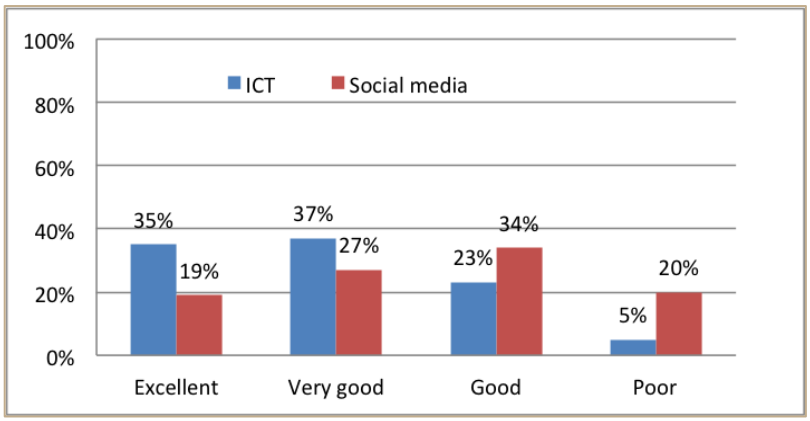

Figure 4 Question "What is your current level of ICT and social media skills?"

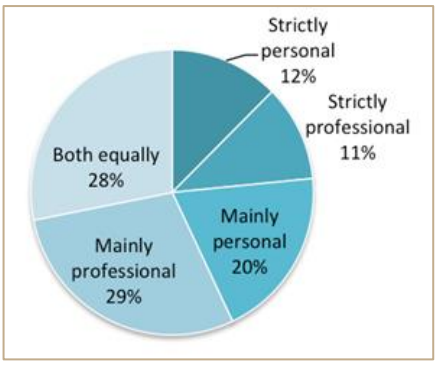

Figure 5 Question "For what purpose do you use the above social media tools?"

According to figure 3 around 66% of them plan to apply to the next call for proposals. This can be interpreted as the desire to improve skills in digital communication in a medium- or long-term perspective, and not only as skills limited in time (for the current project only) as digital communication is an essential part of LLP projects.

Respondents were asked to judge their information and communication technology (ICT) and social media skills in general. As seen in figure 4, the general level of ICT skills was perceived to be good, while only 5% marked their ICT skills poor. The same figure shows that there are different levels of social media skills among respondents, ranging from novice users (20% of respondents) to expert users (19%). This trend is confirmed in the open-ended questions. The divergence in terms of skills will be taken into account in the design of training materials, i.e. in the sense of diversity of materials to cater to a wide range of skills.

Regarding the personal or professional use of social media, more than half of respondents (68%) reportedly use social media for professional purposes (combining 11% (strictly professional), 29% (mainly professional) and 28% (both equally). This underscores the fact that social media are not merely used for personal reasons.

The significant need in terms of development of professional skills is also highlighted in the question regarding the current and future involvement of respondents in dissemination activities. 55% of respondents are currently engaged in this field, with 76% planning to be so in the near feature.

In addition, we asked whether participants in the survey considered social media tools and methods as part of the dissemination strategy for an LLP project. 86% of respondents answered positively in terms of linking and integrating social media tools and methods as part of their dissemination strategy. In fact, the motivation for using social media as part of dissemination proves to be an excellent vehicle for our project in calling attention to this subject among LLP community members and in developing all necessary publications and courses.

Trends in social media practice

In order to tap into current usages of social media applications among the target group, we measure their contribution by asking about their frequency (figure 6).

Blogs are used rather as a reader than a contributor. Reading blogs seems a highly frequent activity at 14% (every day), 23% (several times a week) and 18% (once a week). While more than 50% of respondents indicated their contribution as a reader of blogs, only 15% participate as a contributor to blogs on a regular basis. For this analysis, the term 'regular basis' means once a week or more for their participation. A similar trend can be found in using wiki as a contributor. 21% of respondents say that they also use wiki as a contributor on a regular basis.

Posting on Twitter scored 11% (daily tweeting), 10% (several times a week) and 9% (once a week). Although the usage of Twitter seems more frequent than tools such as blogs and wiki, the rate of respondents who never use it was 41% . This follows a similar pattern to 37% (blog), and 41% (wiki) in 'never' use rate.

In terms of SNS, three questions, on Facebook, LinkedIn and other tools (e.g. Ning, Edmodo) were asked to generate comparable answers on current practice in this category. Posting on a daily basis in Facebook, the most popular social networking site at present, ranked 20% among the respondents. What is more striking is that 59% of respondents participate actively, at least once a week or more, in Facebook postings.

By contrast, regular usage of LinkedIn appeared relatively low in this respect. A total of only 22% participate in discussion or log in more than once a week (1% for daily, 7% for several times a week, 14% for once a week). Also, to our surprise, 29% of respondents never post anything on the LinkedIn site.

When it comes to sharing media resources such as pictures via Flickr or Picasa, and

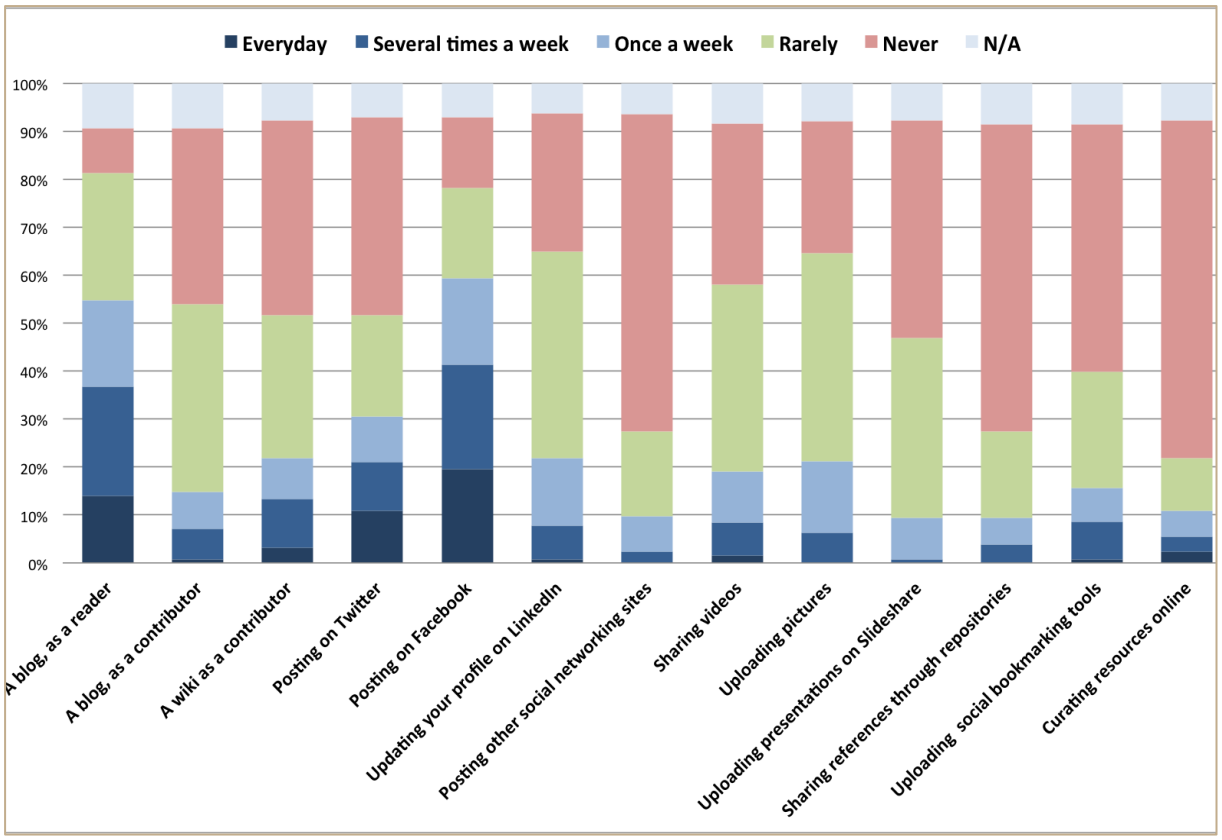

Figure 6 Question "To which of the following social media do you contribute and how frequently?"

videos through Youtube or Vimeo, the respondents contributing regular uploads account for 21% for pictures and 20% for videos. Yet, it should be also considered that 27% (picture sharing) and 34% (video uploading) of respondents never use these tools to upload their pictures or to share videos with other users. Respondents uploading presentations in the Slideshare or sharing references through repositories (e.g. Mendeley, Zotero) were also asked about sharing resources in other forms. A small proportion of respondents use these tools, 10% for sharing slides and 9% for sharing references. In addition, the question on the usage of social bookmarking tools was asked to see if users share and tag interesting websites or links with other users. 16% of respondents upload links on a regular basis while 52% never use this particular tool.

In addition, the question on usage of the online curation tool shows that 10% of respondents participate once a week or more, while 70% never use this tool to collect and share interesting resources.

Last but not least, we raised short questions about the use of a web analytics tool. The use of such a tool is crucial in fields such as business and marketing, as it helps to gain a better understanding of the flow and performance of websites and social media sites. It can serve as a good indicator for the project website for visitor traffic and preferences. As Figure 7 shows, 45% responded that they know this particular tool and 32% have actually used this tool for a review of project dissemination. On the other hand, 20% of respondents have never heard of web analytics tools and 48% have never actually used them.

Preliminary results on social media practice

While fully acknowledging that we cannot obtain a full picture inside each LLP project from the 128 responses, we hope and are

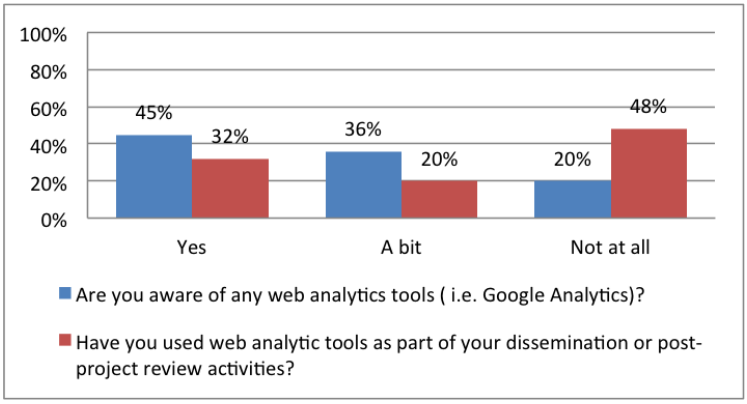

Figure 7 Question "Are you aware of any web analytics tools?"

convinced that this sample remains on the right track in terms of current practices and actual needs among this group. Drawing from the first illustration of the data, we can say that at least 10% of the population actively participate in the selected social media tools on a regular basis. This population can stand as expert users in terms of their usage. Of course, there are considerable differences among the population, as Facebook scored 59% for its use more than once a week while sharing a presentation scored only 9%.

When it comes to the 'never' use, as indicated by the red colour in each bar (figure 5), this varies from 9% (Facebook) to 70% (online curation tool). Large proportions of the population never use these tools.

Priorities in social media enhanced communication skills

In order to get a clear picture of social media tool implementation and usage, we asked which tools are considered to be helpful and appropriate and which tools give rise to learning needs.

Figure 8 gives an overview of the result among 128 respondents. N/A indicates the no replies in the same way as the other figures above. Five different scoring scales were used as follows: 'need to know', 'very useful', 'slightly interesting', 'not interested' and 'don't know this tool' (only one reply possible). In addition,

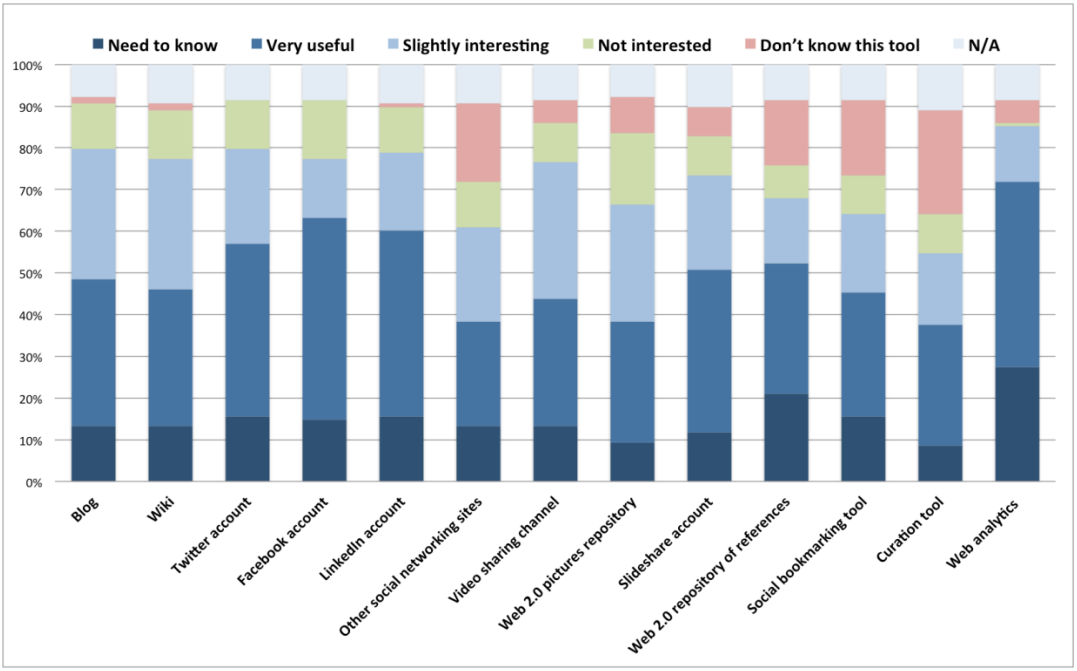

Figure 8 Question "Which of the following tools do you consider useful for dissemination activities and which you would like to learn more about, specifically in terms of implementation and usage?"

the 'need to know' category directly addresses which tools they would like to learn more about for better use in dissemination.

Around 48% find that Facebook is a very useful tool for this specific activity (Figure 9). LinkedIn follows in the footsteps of Facebook, scoring 45% alongside web analytics. Although it does not distinguish between purposes of usage - private or professional - Facebook scored highly, being used by 59% of respondents. This coincides with the findings of the desktop research, where Facebook was the most widely used social media tool in LLP projects screened.

Web analytics, as a tool allowing measurement of the performance of a project website and the embedded social networks, is also regarded as one of the most useful tools among the survey responses.

Aside from this, Twitter takes an important place as 41% found that it is a useful tool with regard to dissemination activities. Following the microblogging Twitter, 39% respondents found it useful to share their slides or articles in Slideshare. Blog and wiki scored 35% and 31% respectively. The above figure shows that approximately 30% of respondents using media-sharing tools for videos, pictures and links to important resources, find these tools useful. For Figure 10, we extracted parts of 'need to know' tools from Figure 8.

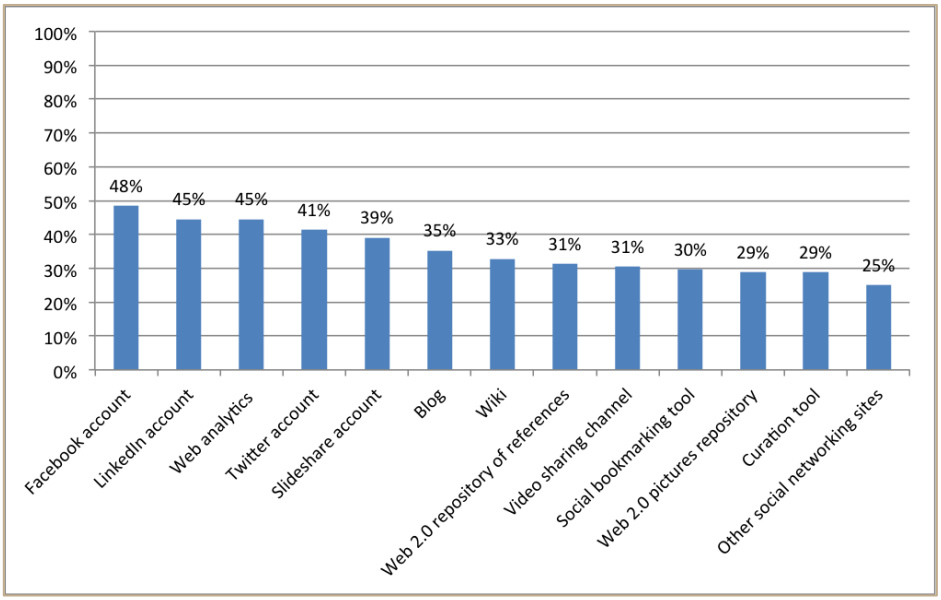

Figure 9 List of tools considered as "very useful" to all respondents

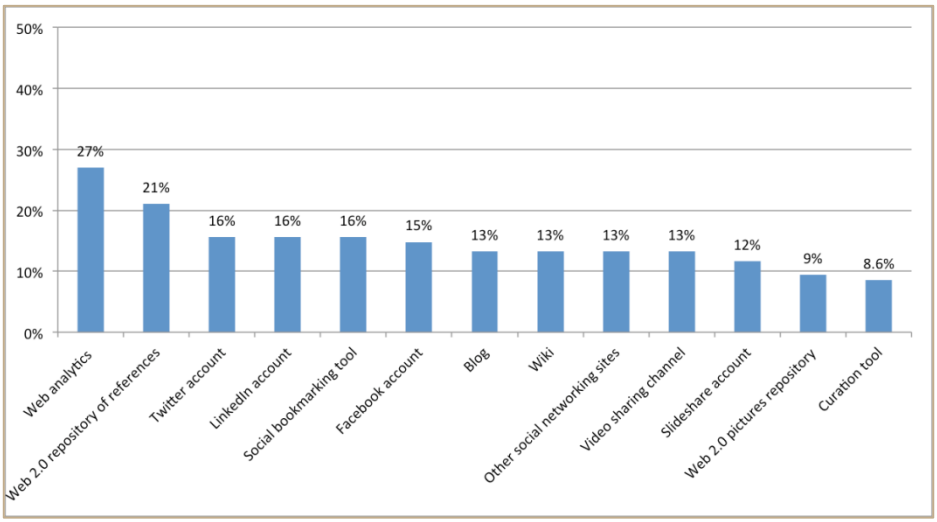

Figure 10 List of 'need to know' tools

The above list gives a full overview relating to 'need to know' tools from respondents. It appears that web analytics has become a significant phenomenon, as we see it in top position at 27%. While only 32% use this tool actively (see Figure 7), it was also ranked in top position for usefulness.

There is another demand to learn about a web 2.0 repository of references such as Mendeley, as this scored 21%. This response is somewhat contradictory, since it was ranked with a low percentage in terms of usefulness while it scored in the top ranking for 'need to know'.

Beside these two tools, 15% said that it is necessary to know tools such as Twitter, LinkedIn, social bookmarking tools and Facebook for their dissemination activities. These tools are found to be useful, and there is a need to learn more about their implementation for project purposes. The online curation tool ranked lower at 13%; it could be quite a new tool to this population and not yet fully exploited in terms of their dissemination activities.

Another interesting finding is that 77% of respondents are eager to know and learn about successful and positive examples of Internet strategies and social media that are currently being utilised in LLP projects. This is an encouragement for our digital showcase (http://www.web2llp.eu/videos) in which the best practices of selected LLP projects are displayed and shared with the community.

Insights from open-ended questions

While the previous section discusses quantitative results, below we provide more in-depth viewpoints collected from the open-ended questions in the survey.

- Diversified training needs, ranging from the novice user, with requests for training on setting up a Twitter account or a Facebook page, to requests such as the following:

> "I know how to use Twitter, although I am aware I am not fully exploiting it. An introductory course to the tool's affordances would be useful".

More experienced users also express their training needs:

> "I'd be more interested in learning more about the technologies underlying future social media implementation (for instance html5 and css3)".
>
> "I am daily looking at new tools and ways to improve and use new strategies"

- The need to focus on the appropriateness of tools in a given LLP project. Respondents wish to move from a technology-centred approach to a socio-technical approach based on clearly identified needs.

> "Harmonisation and optimisation of the combination of all social media elements, tailored to the individual project. Every project is different, therefore e.g. a video or reference repository might not be necessary in one, but essential in another".
>
> "Strategic approach is more interesting than improve specific skills - you learn them by using them."

- Opportunities for engagement with the public. Dissemination activities are about reaching the target groups and more importantly engaging with them, as the one-way mode of communication is no longer compatible with the culture of communication through social media.

> "More engaging with the target group."
>
> "Reaching new target groups; other interested persons who are not yet linked to my project."
>
> "I would be very interested at how to thoroughly involve and animate an online community (I find REAL and

FUNCTIONAL online discussions impossible to initiate/maintain)."

- Viability of Internet and social media presence after the project life cycle. Respondents share their concerns in terms of sustainability of these tools after the lifetime of the project.

> "I would like to address sustainability issues of the use of social networking within LLP projects: how are the social networks maintained during and especially after the project?"

Catering for training needs

The relatively low use of social media in running LLP projects (resulting from the desktop research) and the variety of training needs (documented through the online survey) were the two challenges in the design of the training components that are broadly described below, as well as the adjustments we made.

1. The training components

The courses, the materials and the dissemination activities are the main training components.

Training courses

- A 10 hour online training course in English, French and Italian was organised between June and October 2013. For each language the course was delivered via videoconference over 5 sessions of 1 hour each to groups of participants located in different countries, with 1 hour of online work and a 1-hour webinar.
- The **face-to-face training** took place on 18-23 February 2013 in Leuven, Belgium, where highly motivated LLP project managers from several European countries worked together in groups to create dissemination strategies and action plans to improve the dissemination and reach of lifelong learning projects.

Training materials

- A Video Showcase including interviews with 15 experienced project managers who have used social media in their LLP projects.
- Three downloadable Handbooks on "Improving web strategies of LLP projects", "Maximising the social media presence of LLP projects", and "Tools for self-assessment".
- Nine Video tutorials with more technical guidelines and support provided with actual LLP examples.

Communication and exchange tools

- A Diigo group, an open social bookmarking group where members can share useful links and add descriptions
- A Twitter, a Vimeo and a Slideshare account, the last two for sharing slides and recordings of the courses, and a blog.
- Various face-to-face dissemination activities (participation at events, conference presentation, EACEA meetings, etc.)

2. Adjustments to the training approach to meet real needs

Although the training approach and its key components (types of materials and courses, languages targeted, number of participants estimated for the face-to-face and the online courses) were part of the initial proposal, it became clear that some adjustments were needed to better meet real needs, based on the findings of our two-step analysis. We identify the three main ones.

Firstly, the overall design of the handbooks and the training courses emphasised practical examples as well as advice from experienced LLP project managers. Advice from experienced project managers was given a central role in the handbooks, where we integrated many tips and suggestions (shared with us by experts during interviews for the video showcase) as first hand advice from experts outside our project team. This approach allowed us to increase the number of suggestions both quantitatively and qualitatively and to open up the training materials to a variety of voices and approaches. In addition, practical examples developed in other projects were shared in all online and face-to-face courses as LLP project managers spoke as field experts. The aim was to contextualise information as much as possible so that users see the potential in their own situation.

Secondly, the video tutorials, despite the fact that they were planned in the project

proposal, focused more on the needs of less experienced project teams. Therefore, each video tutorial is composed of an introductory piece (what the tool is about), followed by an explanation of its usefulness in an LLP project and examples from case studies. Video tutorials were developed for self-access, thus complementing the handbooks and the training courses. The video tutorials cover nine subjects and were designed as separate videos so that users see only the video(s) of interest to them. They are available in English, French and Italian:

1. Social Networking Sites (SNS)
2. Social Media Monitoring Tools
3. Media sharing
4. Social bookmarking
5. Web Analytics
6. Social media editors
7. Online Curation tools
8. Integrating networks
9. Blogs and microblogging

Thirdly, we gave more emphasis to tools and practice that we considered as highly useful despite the low interest they attracted in the online survey. One example is online curation tools as a social media category with high potential for a project valorisation plan. We agreed to dedicate a video tutorial to this category and we also made it one of the five topics addressed in our online training sessions. The flexibility and multimodal nature of online curation tools as well as their ease of use make them cost-effective, collaborative and up-to-date technologies for a digital communication strategy. Finally, we highlighted good practice developed in LLP projects making effective use of online curation tools (ex. the iTiLT project http://www.itilt.eu/) both through the dedicated video tutorial and the corresponding online course.

Finally, the team carried out more face-to-face dissemination activities than initially planned (two extra presentations at conferences with a high number of LLP project teams were added, plus a presentation at EACEA Infoday in November 2012). The objective was ensure a maximal reach of the project outcomes and more importantly to inform participants about forthcoming training events and the availability of our materials online for self-access.

3. Future perspectives

Although the short-term Web2LLP project offered training possibilities and provided training materials in three languages free of charge, we believe that there is still more to be done in terms of training present and future project teams engaged in cross-border cooperation. Below we summarise some priority activities aimed at increasing the reach and impact of project results.

A more coherent strategy in developing digital communication skills

Although applicants submit valorisation plans as part of their application, funding bodies should draw more attention to the provision of adequate and sustainable training in valorisation in order to increase the impact of project results. European projects often suffer from low visibility. We therefore argue that funding bodies should be engaged in providing training to the project teams whose project has been selected for funding.

Benchmarking

In the description of the award criterion "valorisation" of the LLP programme (see section 1), there is a lack of indicators as to what is expected as the valorisation outcome. In the case of applicants wishing to set up the valorisation plan of their future project, no indication on the use of communication tools - including social media - is given. Therefore, performance indicators for the use of social media are missing, although we understand the difficulty of this exercise since there are several types of projects submitted by very different types of project partnerships. However, the fact that several projects set up Facebook groups and pages, Twitter accounts and LinkedIn groups, not always with a clear idea of the expected impact, leads us to believe that the existence of a set of performance metrics would be useful both at the application stage and at the final project evaluation stage.

Peer learning in the web 2.0 era

Learning from exemplary practice is always helpful in understanding the value of a practice for one's own context. Peer learning can occur through formal encounters (workshops, training opportunities) and also informally, through informal encounters and Internet searches for instance. In the age of social connectivity, sharing of good examples and collective learning is largely facilitated by social networking technologies that can be a driving force for change.

Emphasis on social media as interaction tools

Although it is common sense that social media are highly interactive, we have noticed that in some projects social media are still used as a "push" tool, that is from the source to an audience (e.g. in the form of an email announcement). However, each digital tool has different affordances and in the case of social media the "push" mode of communication is not compatible with the culture of interaction through these tools. This brings us back to the point of developing adequate digital communication tools with up-to-date technologies, where social media are made for engagement with target groups in a mutually beneficial manner.

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How Innovations and Competence Development support Quality in Lifelong Learning

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ABSTRACT

This article discusses how to achieve the best appropriate learning quality as the core objective in learning, education and training by combining the three dimensions learning history, learning innovations and learning standards. Only their combination can ensure that learners' needs are met and that the best, appropriate learning opportunities with high learning quality are provided for. They have to address the societal changes by the Digital Age and to fit to the given situation in lifelong learning enabling long-term and sustainable improvement across education and training. The paradigm shift towards outcome orientation in learning and the introduction of competence development are identified as two main facilitators and supporters for improving the quality in lifelong learning.

KEYWORDS *Learning quality, learning innovations, learning history, learning standards, competence development, education and training, digital age*

INTRODUCTION

Learning innovations and learning quality have been important and reflected topics for a very long time from the beginning of discussions and theories about learning processes. In Europe, Plato's Allegory of the Cave is one of the earliest examples. Their debate continued during the introduction of the first universities in the Middle Ages and of the school systems in the 18th century. During the last years and the upcoming so called "digital age", many discussions have taken place due to the two main changes covering all sectors, branches and levels of society:

1 Globalisation and

2 Establishment of the worldwide internet

These two factors are leading to global markets, worldwide networking, communication and competition, as well as to the digitalisation of services and systems with the introduction of internet-based services, hardware, and software within all parts of our lives. They have and are still changing all societies and in particular lifelong learning, education and training.

EUROPEAN POLICIES FOR THE DIGITAL AGE AND FUTURE LEARNING

The European Union has identified the challenges and opportunities of these global changes and published several communications and framework for future European society and its learning, education and training. Based on the Lisbon Declaration, the former vision of the Information Society called i2020 and the established Bologna Process (European Commission 2005), the European Commission and Council have reviewed and analysed the impact of globalisation, the internet and information technologies in general, leading to current new communications and policies:

EUROPE 2020 promotes a smart, sustainable and inclusive economy as a leading policy and basis for the future of Europe to be achieved until 2020 in five ambitious objectives - on employment, innovation, education, social inclusion and climate/energy (European Commission 2010a).

The Digital Agenda for Europe, as part of EUROPE 2020, is the strategy of the European Union to help digital technologies, including the internet, deliver sustainable economic growth and support the objectives of EUROPE 2020 for a better digital future in Europe (European Commission 2010b).

And finally the communication on Education and Training 2020 reflects these movements in their relations to learning opportunities with special emphasis on the potentials for the European citizens and communities (European Council 2009).

INTERNATIONAL DISCUSSIONS ON FUTURE LEARNING IN THE DIGITAL AGE

In international discussions about the future learning, education and training from theory, research and politics but also from press, individuals and social communities, the main focus is currently on the technological innovations and their opportunities. That is valid for learning opportunities and in particular for learning at work. Theories and experts are claiming brand new and extraordinary chances, sometimes promising new learning eras and paradigms: e. g., the theories of connectivism by Siemens (2005) or of Social Learning by Hart (2011). Even the arrival of fundamental new ways of learning are promised under the label of learning 2.0 / 3.0 in analogy to the terms web 2.0 / 3.0 (Downes 2005, Karrer 2007, and for an overview Redecker 2009). Finally new concepts and descriptions of our world as a 'flat world' are leading to predictions that 'to learn how to learn' will become the most important asset for all workers due to all the changes and faster innovation (Friedman 2006). It is claimed that is this a new movement and progress however it has been clear and evident in pedagogy for several hundreds of years (if not longer) that 'to learn

how to learn' is most important for learning processes and progress and for the development of personality and competences (Dewey 1966, Piaget 1953, Rousseau 1968 [originally published 1762], Vygotsky 1988).

From this perspective, it seems that learning innovations are the only path and road map for a better future education and training. The underlying (and often hidden) argument is that through them we are earning many new chances to learn, and without them we are not matching the changing times of globalisation and worldwide internet as well as the new digital generation, the so labelled "digital natives" (Prensky 2001, cf. for a general criticism of this term Schulmeister 2008). We call this discussion the (learning) innovation strand.

On the other hand, there has been a long-term discussion with a longstanding tradition (since the beginning of our culture) about learning quality covering a broad range of topics, like the quality of learning design, objectives, materials, input as well as learning processes, outcomes and the achieved knowledge, skills and built competences. In the past, many theories were developed dealing directly or implicitly with the question how to ensure or to improve learning quality (cf. for an overview Stracke 2006a). We call this debate the (learning) history strand even if some of the topics like quality management for education and training are less than 100 years old.

Surprisingly, both discussion strands, the new innovation and the old history, are not interconnected and do not reflect each other. It seems that the supporters of learning innovations do not want to refer to theories of the past and that vice versa the authors of learning history do not want to recognise global changes. That leads us to an important question that requires urgent attention and an answer in our changing times: What is the relation between learning innovations and learning quality?

Our answer is based on three hypotheses of the current learning situation:

1. Learning history should not and cannot be ignored.
2. Learning innovations are mainly technology-driven.
3. Learning is not completely changing.

First of all, it has to be stated clearly that the worldwide changes by globalisation and internet for all through World Wide Web, social media and communities do not justify withdrawing or ignoring all theories from the past. They result from many discussions across societies, cultures and centuries leading to learning experiments, evaluations, failures as well as successes and finally to the improvement of both the learning opportunities as well as the learning theories themselves. Modern innovation theories ignoring this treasure of expertise from history are losing a well-proven foundation for basing their argumentation (even if contradictory) that is providing a huge variety of different concepts (e.g. cf. for extremes the theories of cognitive development by Piaget 1953 and the systems theories by Luhmann 1995 and 1998 and Maturana/Varela 1992). Moreover their ignorance is not convincing because without defining their relation to the historical strand they claim to originate from nothing (see figure 2 below) and start from the scratch (which is evidently not the case).

Second, the currently claimed learning innovations based on the effects of new internet opportunities, services and social media not only deal with technological changes and opportunities. Of course we can realize diverse learning scenarios and (digital) communities, services and systems today that were not available several years ago like social communities, MOOCs, blogging (Redecker 2009, Hart 2011, Daniel 2012). But these technological inventions and changes only offer new options and pre-conditions. They cannot be successful by themselves, they still require an appropriate learning design and setting with an attractive and motivating learning environment: For those (and other) reasons Daniel (2012) calls “MOOC” the 'educational buzzword of 2012'.

Finally, learning is not becoming completely different and changing only due to globalisation, new technologies and network opportunities. The new technologies and global changes are providing challenges and chances to establish new ways to base,

present and integrate learning processes within education and training and learning groups including new options for self-regulated learning. But these new modes and types of access and interactions in learning processes do not change completely the way how people learn. The style how to use, consume and reflect learning opportunities and materials may change through increasing speed and multi-tasking and lower attention, but that is only increasing the requirements for learning designers, educators and teachers.

What is most important for the success of learning processes is learning quality. Learning opportunities have to meet the needs of the learners and to provide the appropriate quality to fulfill their requirements. That can sometimes mean a simple learning course with teacher-centered education and sometimes a complex sophisticated learning environment with learner-oriented group work, enriched and facilitated by an educator as moderator, tutor or enabler, as well as with new learning technologies and innovations including social media and communities. That means that learning quality cannot be pre-defined but has to be adapted to the given situation and learners. In this sense, learning history and learning innovations are two different approaches and points of view that are interdependent and cannot be reflected upon alone but have to be analysed in conjunction for achieving the best and appropriate learning opportunity and success. Next to them, standards build the third source for planning and designing the best learning opportunity and quality (see figure 1), which will be explained more in detail below.

HOW TO ACHIEVE LEARNING QUALITY?

This overall objective for the continuous improvement of learning quality can be called quality development. Quality development has to combine the relevant and appropriate approaches, concepts and elements from all three dimensions upon which learning quality is based: history (by learning theories and traditions), innovation (by new learning options) and standards (by consensus building on learning).

As shown in figure 2, there could be three alternatives and options in theory: to focus only on the learning innovations only (1.), to focus only on the history of learning traditions and theory (2.) or to arrange the mix between both approaches (3.). As already explained above, it is not possible to argue that the only focus on learning innovations can succeed by

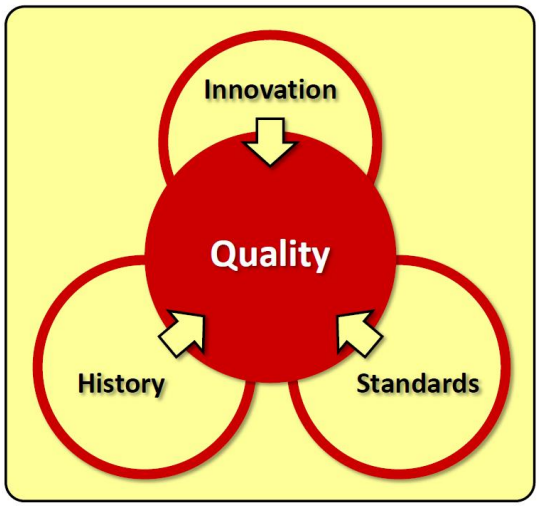

Figure 1 The three dimensions of learning quality

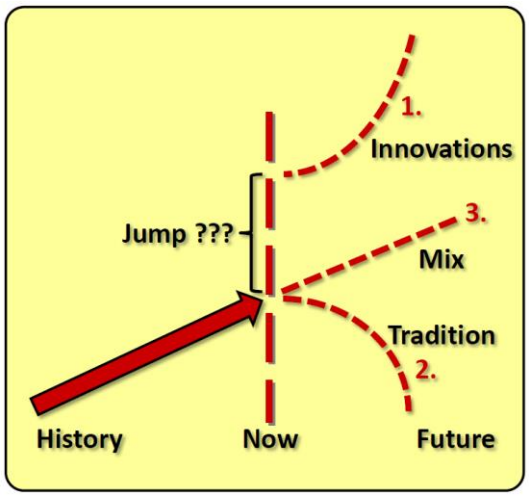

Figure 2 The potential three options for future learning quality

jumping out of nothing as it cannot be argued and proven how such a jump can take place by ignoring the learning experiences and theories. On the other hand, future learning opportunities have to reflect the changes in society and opportunities through innovations and would also fail by ignoring them. Therefore only the mix of learning innovations and history based on learning experiences and theories from the past is promising and convincing as shown in figure 2.

Thus, we can say: quality development is the crucial task for learning, education and training.

In the past, a long-term debate has focussed on quality development in general regarding the different quality issues, aspects and approaches (cf. Deming 1982; Juran 1951 and 1992; and for an overview Stracke 2006a). Quality development in its broad sense can be defined as follows (cf. Stracke 2006b):

Quality development covers every kind of strategy, analysis, design, realisation, evaluation, and continuous improvement of the quality within given systems.

Quality development can be described formally by the chosen scope. Quality is not a fixed characteristic belonging to subjects or systems but depends amongst others on the point of view and scope. The following differentiation of the scope into three quality dimensions has become widely accepted:

- Potential dimension: What are the potentials for the quality development in the future?
- Process dimension: How can the processes be described and optimized for the purpose of quality development?
- Result dimension: How can the quality development be supported regarding given results and systems[2]?

Quality development requires a long process to be established and integrated throughout a whole organisation and in particular, society. Once started, it has to become a continuous improvement circle to be finally successful (Crosby 1980; Deming 1986). Quality cannot be described and fixed by a simple definition, because in itself quality is too abstract to have any impact. Therefore, quality has to be defined and specified according to the given context and situation considering the perspectives of stakeholders involved (Donabedian 1980). It is important to identify the relevant aspects and to specify the suitable criteria. It is necessary to find a consensus amongst the different views and perspectives to gain a common understanding of quality for the given context and situation due to different and sometimes contradictory needs and definitions of quality by all stakeholders (for detailed explanations on context determinations cf. Crosby 1980; Deming 1986; Donabedian 1980).

In this way quality awareness is the basic requirement for the adoption of quality development by all stakeholders from any organisation. But on the other hand quality awareness will also be raised by the implementation of quality development. To come to a sustainable integration of quality development within the whole organisation and to ensure the involvement of all stakeholders it is crucial to build a quality strategy and to integrate the quality objectives into the educational and business processes. Also the stakeholders' needs and responsibilities need to be integrated into the overall quality development.

The process of the adoption, implementation and adaptation of quality development can roughly be divided into three steps based on three different levels that need to be covered and addressed for a sustainable and long-term quality development, according to the concept of the introduction of quality development within organisations (see figure 4, for the three level concept of the introduction of quality development cf. Stracke 2006b and 2009a):

1. Level of the individual persons
2. Level of the organisations, communities, education and training systems and societies
3. Integration of quality development involving all stakeholders

[2] Cf. Donabedian 1980, for the whole long-term debate on the quality issues, aspects and approaches cf. Deming (1982 and 1986) and Juran (1951 and 1992).

Figure 3 The dimensions for defining quality in general

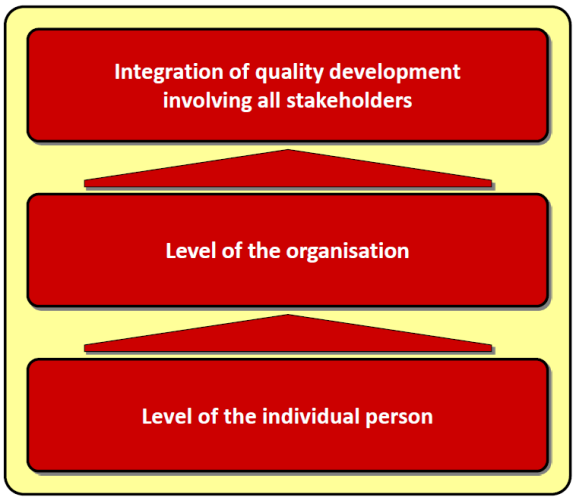

Figure 4 The three levels of quality in general

These explanations are valid for the quality development of learning, education and training in general. The question in the following will be as to how quality and lifelong learning are interlinked and can be combined and addressed by a common approach and instruments, in short: How to improve quality in lifelong learning?

THE PARADIGM SHIFT FROM INPUT TO OUTCOME ORIENTATION IN EDUCATION AND TRAINING

The answer to the key question "How to improve the quality in lifelong learning?" is many-fold and not simple in our days of the digital age with all the aforementioned changes. The paradigm shift plays one major role in the evolution from input to outcome orientation in learning that has been introduced and is taking place in more and more enterprises and organizations to address and fit the current challenges. Today we have to learn during our entire lifetimes to fulfil lifelong learning in order to be prepared for future jobs and tasks that do not yet exist, which are still unknown and cannot even be thought about (Davenport 2005, Friedman 2006, Keeley 2007). This paradigm shift from input to outcome orientation in learning is moving the focus from knowledge (as learning input), which can more and more quickly become outdated, to competences (as learning outcomes), including abilities to transfer and act successfully in an unknown situation.

The importance and impact of competences and of competence development has constantly been increasing since the beginning of the digital age (see above). This is not only true for the (new) media competence (also often called media literacy) but for the business sector and the society itself as a whole. In the Digital Agenda 2020, the European Commission underlines the growing weight and significance of competences for

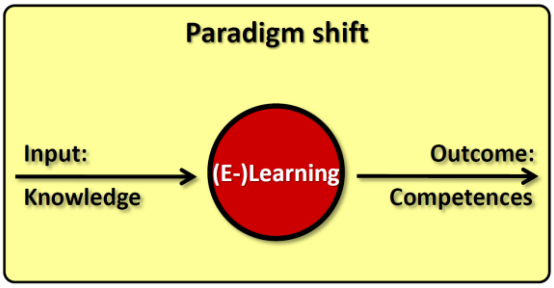

Figure 5 The paradigm shift to learning outcome orientation

the future of Europe and the whole world community and for the international mobility (EC 2010). This has been confirmed by experts from human resources and vocational education and training (VET) as well. The term "competence" is currently on top of the agenda for several reasons: competences as well as the building and the measurement thereof are becoming more crucial for business success in our times of increasing flexibility, speed and globalisation within the economy. Organisations, and in particular enterprises, have to face more complex and unpredictable challenges in markets and societies due to globalisation and stronger competition - together with growing requirements and cost pressures (especially in the economic crisis). At the European level, the concept of key competences (European Parliament/European Council 2006) and the EQF, the European Qualification Framework (European Parliament/European Council 2008), has been developed and approved to face these challenges in lifelong learning. The concept of competence (which is traditionally combined with successful acting in unknown situations in the Central European tradition) offers a theoretical basis for the development of strategies, methods and means for solving the current tasks (Weinert 2001). Enterprises have to make good use of their employees by efficiently and effectively supporting and managing them to survive in the market through success and innovation. In addition, the needs for personal and organizational development have to be identified, and vocational training and change management methods have to be introduced and evaluated, as also mentioned by the OECD (Keeley 2007).

However the term "competence" is defined in many different ways, in particular in business practice. Thus, strong initiatives are taking place in human resource development and in vocational education and training to harmonize the whole competence field on the basis of the requirements from all stakeholders of businesses, political systems and societies (ISO 20006, 2012). The aim is to develop valuable and adaptable instruments for the building, measurement, and modelling of competences.

For this ambitious and long-term objective, the term "competence" and its historical development and definition have to be established. The historical development lines of the term "competence" in different science disciplines verify the variety and complexity of meanings and views on the term. In psychology, White has used the term "competence" very early to designate skills developed by self-organization and required for performance (1959). In semantics and only a few years later, Chomsky (1962) defined competence as the self-organized ability to construct and understand a potentially unlimited amount of sentences using a limited set of vocabulary and thus, to manage speech acts as a competent speaker. And based on these concepts, two different schools of thought were developed in different directions: the first line continued the Chomsky's ideas by broadening them to a human being's acting in general; the second line used the term for societal criticism and combined it along with "coping", in particular with the generation of social situations.

This short overview demonstrates the increasing relevance and importance of the concept of competence, independent from the variety of different traditions and understandings. In the following we use the term "competence" according to its general meaning defined by Stracke (2011) as:

> Competence is the ability (that cannot be observed directly but only by activities) to adequately and successfully combine and perform necessary activities in any contexts to achieve specific tasks or objectives.

Using this definition as the basis, the potential (non-observable) competences and the (observable) activities performing the competence can be distinguished. This is most important and can be expressed by using the following simplified representation:

- Competence = Knowledge + Skills (+ individual ability)
- Activities = Performance of Knowledge + Skills + Competences (+ individual ability)

Competences can be built and exist without being demonstrated and performed. Most important is the fact that they are non-observable; they are only shown and observable through acting, i.e. through performance and activities. Only activities can be observed and measured.

To summarize, the general answer to the key question regarding how to improve quality in lifelong learning is given by the paradigm shift from input to outcome orientation in learning, and by the introduction of competences as the main basis and core concept for this shift.

Further key questions are how competences and their development contribute to the improvement of lifelong learning and its quality and what are their use cases and benefits. A framework for competence modelling and related instruments was developed in several research projects and tested in pilot implementations (cf. Stracke 2011 and 2009b for more details). In a very brief summary, it can be stated that competence models are required and used for describing and measuring competences. Thus, competence models are the core instruments for competence modelling and its implementation and therefore for competence development in general. Competence models contribute and support the improvement of learning quality and build the basis for lifelong learning.

CONCLUSIONS

This article has analysed how to achieve the best appropriate quality in lifelong learning through the introduction and support of innovation and competence development. The changes through the digital age require new approaches to fulfil future jobs and tasks that are still unknown today. Therefore it is a core objective for learners, learning providers and the whole society to focus on the quality of lifelong learning and to improve it by learning outcome orientation and competence development. This can be addressed by combining the three dimensions learning history, learning innovations and learning standards. Only their combination can ensure that learners' needs are met and that the best, appropriate learning opportunities with high learning quality are provided for. They have to address the societal changes by the Digital Age and to fit to the given situation in lifelong learning enabling long-term and sustainable improvement across education and training. The paradigm shift towards outcome orientation in learning together with the introduction of competence development could be identified as two main facilitators and supporters of improving quality in lifelong learning. It has to be stated that current research and development is still in its initial stages but the future roadmap is becoming clear: development towards learning and personal and societal life, not separated and isolated, but instead combined and interlinked in all learning modes (formal, non-formal and informal) through learning outcome orientation, competence development and technology-enhanced learning. Learning innovations will be the facilitator and learning design and pedagogy will remain most important aspects for learning quality and success.

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"QUALITY IN MASSIVE OPEN ONLINE COURSES"

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Introducing MOOCs to Austrian Universities - Is It Worth It to Accept the Challenge?

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ABSTRACT

The paper deals with necessary requirements to implement MOOCs at European universities, by the example of Austria. As the respective general conditions and business environments are obviously different from the university system in the United States, the analysis of advantages and obstacles of offering MOOCs is done from a local point of view including lecturers' and students' perspectives as well as necessary preconditions that have to be established by the universities and the government. Thereby, challenges in the fields of content creation, the supply of MOOCs, the assessment of knowledge and the development of business models are pointed out and discussed.

KEYWORDS *MOOC, middle Europe, higher education, perspective, preconditions, Austria*

INTRODUCTION

If 2012 was the "Year of the MOOC" (Pappano, 2012) when teachers and learners became really interested in it, then 2013 and 2014 are the years when many start to scrutinize the necessity and ability of MOOCs in today's Higher Education. Even if the approach has changed, the discussion itself is still driven by scientists and practitioners mainly from the United States where the MOOC-movement started (McAuley, Stewart and Siemens, 2010) and where the current main providers of so called xMOOCs (Carson & Schmidt, 2012) like Coursera, Udacity or edX are located (Daniel, 2012). In the following text we mean so-called xMOOCs when MOOCs are mentioned. cMOOCs and experiences on that (Arnold, Kumar, Thillosen & Ebner, 2014) are not part of this publication.

European universities are getting more and more involved in the MOOC movement, and in this context it becomes more obvious that the creation and the use of MOOCs in Europe, especially in German speaking countries, cannot be handled in the same way as in the United States because of the different educational systems and framework requirements. Conole (2013) also classified different types of MOOCs and pointed out the main discrepancies. Therefore this publication deals with the challenges faced by German speaking (brick and mortar) universities when they consider offering MOOCs to their students and (taking into account lifelong learning) to other target groups. In our contribution we take the perspective of Austria as a representative of a middle European country. Step by step we will provide and discuss important considerations which have to be taken into account if a MOOC is offered at an Austrian university. We strongly agree that conceptual and theoretical considerations running high quality MOOCs are absolutely necessary (Reeves, 2013) and would like to contribute essential advisements which should be taken into account before entering the MOOC playground.

Before going into detail about MOOCs, just a few sentences about the situation in higher education in Austria. Universities in Austria are financed by the public and studying is in general free of any charges for resident students. Each university itself is responsible for its study programs. At Austrian universities so-called science-driven lecturing is standard which means that there are no fulltime-lecturers who are not involved in research or - the other way round - lectures are given exclusively by researchers. Finally it is not usual to give lectures online, due to the fact that there are no real distance problems. Teaching is more or less almost face-to-face and on campus. Bearing in mind these major characteristics, it becomes obvious that starting a MOOC initiative has to follow different framework requirements than e.g. in the United States.

METHODOLOGY

The idea of this publication is to sum up all relevant and crucial facts, obstacles and challenges that must be taken into account when a MOOC shall be offered. Therefore numerous qualitative interviews with different stakeholders were conducted to gather different points of view. All in all we talked to seven stakeholders covering different aspects of the topic. In detail we interviewed a platform developer, a student, a teacher, an e-learning expert, an instructional designer, a scientist holding a PhD in education as well as the head of the supporting unit responsible for studies and teaching at in one Austrian university. Together with our own in depth experiences of participating in, running own MOOCs and offering a MOOC-platform we elaborated the main points which have to be considered. Each interview has been transcribed and each single mentioned point is categorized into different perspectives which are explained in more detail in the following chapters.

STEP 1 - CONSIDERING CONDITIONS BEFORE STARTING A MOOC (THE LECTURERS' PERSPECTIVE)

By talking about MOOCs it must be taken into account that their main components are video lectures, quizzes, discussion forums and

multiple-choice assessments (Wedekind, 2014). Providing these components means a lot of work for the lecturers as well as for the instructional designers and producers. Thus the following crucial challenges have to be kept in mind:

- Obligation: The production of such materials is not enshrined in the Austrian civil service law of academic staff. I.e. in general nobody can be forced to offer a lecture in the form of a MOOC (or even to enrich his/her lecture(s) with for example additional multimedia material).
- Financial situation: Due to the strained financial situation, there is normally no extra money for such productions, i.e. lecturers have no financial incentive to take on this additional work.
- Reputation: Moreover, there are no other motivating factors such as appreciation within the university or the consideration for habilitation procedures (kind of second PhD at Austrian and German universities). I.e. lecturers who are willing to do the needed extra work do not get any additional benefit for their personal career out of it.

And even if lecturers follow their intrinsic motivation for good education to take all the effort they have to deal with additional challenges:

- Copyright: The Austrian copyright is very strict and distinguishes clearly between teaching in a lecture hall (which is considered to be an academic context) and teaching with the help of online components (which is considered to be a public context). Therefore, while using third party content in the form of a scientific quote is legal within a lecture hall, the same way of providing the content as a video lecture may cause serious legal issues, due to the fact that they may be at risk of not being allowed to provide content in that way. This means that lecturers - who of course are aware of this issue - hesitate to make their presentation available to the public. The use of Open Educational Resources (OER) can be a solution in this matter (Schaffert, 2010). But OER-contents are rather rare and many lecturers do not even use the existing sources because they tend to rely on familiar materials like published (and printed) books because they follow habitual routine.
- Replacement: In the civil service law of academic staff there exists no (!) regulation whether and how the production of materials used in a MOOC replaces traditional teaching activities, i.e. lecturers in fact have to face an additional time exposure, which they do not get paid for. Moreover, they depend on the decision of their university management whether they are allowed (or encouraged) in general to produce MOOCs. However, at the moment there is no general guideline in Austria if (and under which conditions) the actually prescribed presence of lecturers in classrooms may be replaced by online teaching activities
- Instructional Design: Teaching with the use of MOOCs needs special educational concepts including instructional design, communication strategies and a basic knowledge about educational technologies (Khalil & Ebner, 2013). Normally lecturers per se do not have any of these skills, they need to be trained. Many of them would attend such trainings to increase their didactic knowledge but most Austrian universities do still not offer further education in this subject area. Therefore, many lecturers refuse to produce MOOCs because of their didactic and technical uncertainty.

Summing up Step 1, there is no real motivation for a lecturer to do a MOOC as well as a negative financial situation with little monetary backing and more or less no real benefit for his/her personal career. Furthermore, the lecturers have to struggle with copyright issues and need training to get the required knowledge to deliver a technically sound and well-supported piece of work.

STEP 2 - SUPPLY OF MOOCS (THE INSTITUTIONS' PERSPECTIVE)

Currently there is no clear opinion whether universities should host their MOOCs on their own servers or if they should participate in consortia like Coursera or EdX, which started doing business with Google (Oremus, 2013). A decision on this question of course depends on the existing infrastructure and the technical possibilities as well as the strategic focus of the respective university. Assuming that Austrian universities would rather use their own information systems (due to the fact that they do not really rely on third-party products), they have to consider the following challenges from a technical point of view:

- Information System: Although almost every university in Austria runs a learning management system, these systems are not designed to host MOOCs in a proper way. This means that universities have to invest much time as well as money to develop and operate their own MOOC-platform.
- Privacy Policies: If the successful completion of a MOOC by students should be credited to their study, it must be known whether these students are enrolled at the university as well as fulfill all degree requirements. I.e. an interface between the user management of the MOOC platform and the students´ database is needed, a requirement which may affect privacy policies. Since by definition a MOOC is open to anybody there must also be a technical solution to distinguish enrolled students from independent learners.

From a legal and organizational perspective the following obstacles have to be overcome:

- Curricula: If a MOOC has to be part of a regular course, it must be included in the respective curriculum. Since adapting a curriculum is a large administrative effort, the usage of MOOCs as part of a regular study program needs to be planned thoroughly in advance. Currently, there is no real evidence that Austrian universities have already begun to consider how to integrate MOOCs into their curricula.
- Critical Mass: MOOCs by definition should be attended by a critical mass of participants. Apart from a few massive face-to-face courses such a course format would probably fail to attract a sufficient number of participants (even if enrolled students and individual learners are put together) in a small country like Austria. I.e. that Austrian universities (the reputation of which cannot compete against e.g. Harvard or MIT) either have to cooperate and offer joint MOOCs or they need to spend a rather huge amount of financial and personnel resources to promote their MOOCs properly. At present there seems to be no common strategy on this matter.

Summing up Step 2, the infrastructure, privacy policies and the effect on the curricula must be taken into account from an institutional perspective. Further problems could also occur such as the multiple reuse of content or the question of a sufficient number of participants being enrolled to make the course sustainable.

STEP 3 - REVIEW OF KNOWLEDGE ACQUISITION AND RECOGNITION (THE STUDENTS' PERSPECTIVE)

Almost all of the current MOOCs offer tools for self-evaluation (e.g. quizzes), use multiple-choice assessments to examine the learning outcome and award certificates of attendance and completion. But students who pass these exams won´t be awarded credit points (Gaebel, 2013). This concept is not really attractive for regular students who seek to finish their studies as soon as possible. Hence, if Austrian universities want to implement MOOCs as successfully as possible they have to consider the following conditions:

- Credits: Under Austrian conditions MOOCs only make sense to students if they will be credited for their studies (which is currently rarely the case). I.e. universities have to develop certain strategies

(especially considering the curricular integration) on how MOOCs can become comparable to regular lectures.
- Assessment: To examine a huge number of students (who are enrolled for a MOOC) technical and organizational solutions need to be developed. These solutions must ensure that students are completing the exams by themselves.
- Learning Outcomes: The learning outcome guidelines have to be defined to regulate how a specific learning outcome is measured. E.g. the measurement may include the participation in discussions in the form of forums as well as a successfully passed examination.
- Third-party MOOC: Additional guidelines need to be developed to regulate the conditions under which the completion of third-party MOOCs will be awarded with credits so that students know for sure if it is worth (in the sense of her/his study progress) to enroll for a MOOC.
- Role of participants: MOOCs will be attended by regular students and individual learners at the same time but only the first group may be awarded credits. Thus, different types of certificates must be labeled.
- Quality: Eventually, guidelines for quality assurance have to be defined considering the quality of video lectures and quizzes as well as the collaborative performance of the students and their learning outcomes - not to forget measures against plagiarism (Lackner, Kopp and Ebner, 2014).

Step 3 can be summarized that from the students' perspective questions concerning credits, types of assessments and learning outcomes must be answered. Furthermore students strongly claim the appropriate quality of the MOOCs and the permission of integration of so called third-party MOOCs. Finally, the institutions have to bear in mind that because of the openness of MOOCs different kinds of participants can enroll for the course.

STEP 4 - FINANCING OF MOOCS (THE GOVERNMENT'S PERSPECTIVE)

It is obvious that a large amount of money is needed to develop and provide MOOCs. The operators of MOOC-platforms in the United States have worked on different business models in the meantime. These models include: certification (students pay for a badge or certificate); secure assessments (students pay to have their examinations invigilated/proctored); employee recruitment (companies pay for access to student performance records); applicant screening (employers/universities pay for access to records to screen applicants); human tutoring or assignment marking (for which students pay); selling the MOOC platform to enterprises to use them in their own training courses; sponsorships (third party sponsors of courses); tuition fees (Daniel, 2012).

However, these business models cannot be adapted easily to the conditions of Austrian (and most of the European) universities. This is for the following reasons:

- Tuition: The majority of students does not pay tuition and/or examination fees in Austria or several other European countries.
- Recruitment: Privacy policies are rather strict in Austrian universities, i.e. it is inconceivable to sell students' data to third-party institutions. Because there is nothing to sell to enterprises, no well-frequented MOOC-platforms have been established in Europe by now.
- Sponsorship: Sponsorship has no big tradition in academia in Europe.

Considering these circumstances step 4 can be summarized that there are not too many options left for Austrian universities to finance the development and provision of MOOCs. On the one hand they may try to adapt the business models established in the United States, on the other hand they may ask the ministry of education or other governmental institutions for additional funding.

Lecturer	Institution	Student	Government
Financial situation	Information system	Third-party MOOC	Sponsorship
Replacement	Multiple lecturers	Role of participants	Recruitment
Copyright	Privacy Policies	Assessment	Tuition
Obligation	Curricula	Credits	
Reputation	Critical Mass	Quality	
Instructional Design	Reuse of content	Learning Outcomes	

Table 1 Obstacles and challenges from different perspectives

CONCLUSION

All the obstacles mentioned above are summarized again in Table 1 (as an enumeration not as a classification): Are there any good reasons why Austrian universities should accept the challenge to provide MOOCs to their students? Again the main reason why universities in the United States currently accept the challenge (namely to promote their institution, professors and study programs) holds not much value for Austrian universities, as they do not compete with each other in the manner of their American counterparts. Nevertheless, one reason for the implementation of MOOCs might be that Austrian universities may fulfill their obligations in the field of lifelong learning by providing scientific content to the general public.

Furthermore, there is also a unique selling point called creditability. If the universities manage to overcome all mentioned obstacles that come along with the implementation of MOOCs into regular study programs, this will have an innovative impact on the prospective specification of MOOCs. Dropout rates would decrease tremendously because enrolled students are awarded credit points (which is usually the strongest motivation to finish a course). Overcrowded lecture halls would be a thing of the past because students have the opportunity to learn online. Recorded lectures could be re-used by different institutions, which grants lecturers more time to coach their students personally. The coverage of the associated challenges is accompanied by the enhancement of the instructional design of MOOCs. In this context the "third model" mentioned by de Freitas (de Freitas, 2013) could be a good basis: The model suggests "using a third of recorded materials, a third of activities including quizzes and assignments and a third of time for social interactions".

Finally, taking into account the specific Austrian (and European - at least German-speaking -countries) conditions, the development and provision of MOOCs as proposed above will be a long and bumpy road. However, considering the possible outcome as a substantial step towards tomorrow´s higher education landscape it might well be worth it to accept the challenge.

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Academics' Perceptions on the Quality of MOOCs: An Empirical Study

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ABSTRACT

Massive Open Online Courses, or MOOCs, have become a global phenomenon. Tens of thousands of people have enrolled into free online courses provided by some of the world's most prestigious universities. As they are such a recent creation, discussion about the value and the operation of MOOCs has been predominately in the general media and academic blogosphere. It would seem that many of those who have been pontificating about the good (or evil) of MOOCs have been doing so without having experienced one as a participant or organiser. This paper investigates the views of academics who participated as students in a MOOC. A survey and follow up focus group of academics are used to discuss the pedagogical design and also the broader implications that MOOCs have for the tertiary education sector.

KEYWORDS *MOOCs, quality, pedagogy, impact, academic participants*

INTRODUCTION

The introduction of Massive Open Online Courses (MOOCs) to the education world was heralded as a paradigm shift in the way that we view education. However, despite a large number of opinion and media articles about MOOCs, the academic literature in the area is only building slowly. While this is in part due to MOOCs being such a recent phenomenon, the articles that have been published have been predominantly based in educational theory, or are opinion pieces without empirical evidence. In this article we will examine the results of a survey and focus group of academics who have participated in a MOOC. Participants were questioned on both the pedagogy and impact of these massive courses.

There are two main areas of interest for this study. Firstly, we are interested in the pedagogy of MOOCs as seen by educators enrolled as students. As with pedagogy, most writing about the impact and implications of MOOCs has been speculation and conjecture in the media. We wish to provide a different viewpoint to these two areas by asking participants, specifically those who work in academic institutions. Our two research questions are:

1. What are academics' perceptions on the quality of MOOCs?
2. How do academics believe MOOCs will impact the tertiary education sector?

Although these are very broad questions to address, we felt that given the lack of survey research on MOOCs, we wanted to focus on general impressions rather than any particular specific detail. This will also allow us to relate the perceptions of the academics back to the existing literature about MOOCs.

LITERATURE REVIEW

In a detailed discussion of the history and implications of MOOCs, Daniel (2013) comments that in the media frenzy around MOOCs:

> Sober analysis is overwhelmed by apocalyptic predictions that ignore the history of earlier educational technology fads.

Liyanagunawardena et. al. (2013a) review MOOC related publications 2008-2012 and find little was written prior to 2012, when the media started to comment on them. However, there is now a growing body of peer-reviewed literature in the area. The Journal of Online Learning and Teaching (JOLT, www.jolt.merlot.org) and eLearning Papers (elearningeuropa.info) have both dedicated 2013 special issues to the topic. While this paper was under review, an edited book was published containing twenty-one essays written by MOOC design and teaching staff, students enrolled in MOOCs and academic observers providing a wide range of perspectives and impressions (Krause and Lowe, 2014).

This literature review will examine academic and media articles about MOOC teaching and policy, but for a more general description of MOOCs, The Chronicle of Higher Education provides a useful summary on what MOOCs are and a timeline of news articles about them (What You Need to Know About MOOCs, 2013).

MOOCS: Teaching and Pedagogy

Massive online courses are not a new invention: The upscaling of an existing course at the Open University in the UK has been described as early as in 2000 (Weller, 2000; Weller & Robinson, 2001). What distinguishes these early courses from today's MOOCs is that they were not "open", i.e. the student cohort was limited to students enrolled in degree programs at the university, and with that students were entitled to the same supportive environment as other students. This included the employment of a large number of tutors (600 tutors to support 12,000 students). Since the focus was on student retention and on preserving the quality of an Open University education, Weller and Robinson commented that the "idea that use of the Web therefore affords

large student uptake at relatively low cost is in many ways misguided".

By virtue of their size and online nature, *Massive open online courses* have some limitations in how they can be designed. Ignoring these factors and trying to scale up a smaller course can lead to disaster, as witnessed by the failure of the Georgia Tech's ironically titled "Fundamentals of Online Education: Planning and Application" course (Kolowich, 2013a), where the number of students was too great for the digital resources they attempted to use. Teaching a large and highly diverse cohort of students effectively requires careful consideration of the pedagogy of the course and the learning materials that are used. However, many MOOCS are either a "cut and paste" of an existing on campus class, or a collection of non-interactive videos on a topic. Vardi (2012) decries the pedagogy of MOOCs, stating:

> In fact, the absence of serious pedagogy in MOOCs is rather striking, their essential feature being short, unsophisticated video chunks, interleaved with online quizzes, and accompanied by social networking.

However, Vardi then proceeds to state this is perhaps not so different from the kind of teaching seen in many universities, with "professors monologuing to large classes".

By contrast, other authors have considered the positives of the pedagogy and learning experiences provided by MOOCs. Glance et al. (2013) discussed MOOCs in terms of learning mastery, peer and self-assessment, and the efficacy of online learning. By comparing the pedagogical practice of MOOCs to educational literature they conclude that:

> Although not specifically designed to optimise learning, claims have been made that MOOCs are based on sound pedagogical foundations that are at the very least comparable with courses offered by universities in face–to–face mode.

Mackness et al. (2010) describe how MOOCs promote autonomy, diversity, connectedness and interactivity, but tempers this by explaining that there is a paradox, where the more open the course is and the more autonomy the participants are afforded, the greater the likelihood that the learning will be limited by the lack of structure, support and moderation. The value and importance of connectivism was echoed by Milligan et al. (2013), who emphasised the role of student engagement in the learning process, and how a connectivist approach helped to facilitate this. Connectivsim is a learning theory that emphasises social connection, often applying the metaphor of a network of nodes and connections to the learning process (Griffiths & Guile, 2003).

One feature of a successful MOOC is the collaboration between participants as a way of enhancing their learning experience. As part of their exploration of the MOOC format as a pedagogical approach to learning, de Waard et. al. (2011) place a strong focus on connectivism, the construction of knowledge and the creation of collaborative networks. They recommend moving the focus of MOOCs from the technology, to the value of the interaction between people. This recommendation is further expanded on by Guàrdia et. al. (2013), who came up with the following set of design principles based on participant comments in MOOC related blogs.

- Competence-Based Design Approach
- Learner empowerment.
- Learning plan and clear orientations
- Collaborative learning
- Social networking
- Peer Assistance
- Quality criteria for knowledge creation & generation
- Interest groups
- Assessment & peer feedback
- Media-technology-enhanced learning

On first view this list seems to be very similar to what you would expect from any educational course, with areas focussing on interaction, collaboration, and student-centred learning. This corresponds with the

views expressed by Glance et al. (2013) and de Waard et. al. (2011), who also describe the pedagogy (or the desired pedagogy) to be similar to that of existing online teaching. However, these researchers, and those discussed earlier, talk about MOOCs in terms of teaching theory, and tend to ignore the pragmatics of teaching a course that has tens of thousands of participants.

The Impact and Implications of MOOCs

The impact and implications of MOOCs have been discussed in a number of contexts, although much of this writing has been in the general media rather than in academic publications. The areas of focus have included the implications for students, staff, institutions, and on the tertiary sector as a whole.

In an extensive review of the MOOC paradigm, Daniel (2013) posits that while much of the writing has focussed on the scale of MOOCs as their revolutionary aspect, it is in fact their openness that is the real game changer. He writes that:

> … the real revolution is that universities with scarcity at the heart of their business models are embracing openness … obliging participating institutions to revisit their missions and focus on teaching quality and students as never before. It could also create a welcome deflationary trend in the costs of higher education.

One of the supposed benefits of the MOOC model is that it provides free and accessible education to those who would otherwise not be able to access it. Yuan and Powell (2013) describe MOOCs as promising "accessible, flexible, affordable, high quality resources for free or at a low cost for learners". However, Liyanagunawardena et. al. (2013b) refute the idea that MOOCs are providing a major service to developing countries. They argue that most developing countries, especially outside of major metropolitan areas, have insufficient infrastructure to allow even the most basic of online learning. They highlight that the demographic data collected by MOOC providers does not give sufficient detail to demonstrate participation in developing countries and in particular, those in rural areas who do not have access to traditional forms of education. More recently, the University of Edinburgh has reported on the origin of participants in their six MOOCs: most were from the US and the UK, with "close to zero" participants from China, given the size of the Chinese population (MOOCs @ Edinburgh Group, 2013). Language barriers may have played a role here and with the low participation rates from other countries where English is not a first language.

At an institutional level, a well run MOOC can promote the institution and be an excellent marketing tool. However, the reverse is also true, with a poorly run MOOC having a negative impact on the reputation of an institution. The most recognised example to-date of a MOOC failing is the Georgia Tech course that had such significant technical issues that it was cancelled half way through (Kolowich, 2013a). Also at an institutional level, MOOCs have the potential to have an impact on the credibility of academic qualifications. With some providers offering completion certificates, and toying with the idea of even giving course credit for the completion of MOOCs, it is natural to question the credibility of results. Wukman (2012) describes how some classes are rife with cheating, and the lecturers of those courses have resorted to pleading with their participants to stop plagiarising. There are also questions around how students extract value from these courses, if success rates are low, with some courses having success rates below ten percent (Meyer, 2012), while the University of Edinburgh reported that only 12% of the total enrolment received a statement of accomplishment (MOOCs @ Edinburgh Group, 2013). In July 2013 San Jose State University put their MOOC project on hold for this reason after their attempts to run credit-bearing courses online saw pass rates at 12 percent (Kolowich, 2013c). Lombardi (2013) highlights that MOOCs have "generated new insights about quality in online education", explaining that traditional metrics such as pass rates are not a reasonable indicator of the value of a course.

As well as impacting on an institution, the decision to run a MOOC has an impact on teaching staff. Running a MOOC is a different teaching experience to running a traditional class. Even for those who teach online (for some MOOCs staff, teaching online rather than face-to-face was already new), the scale and open nature of the course alters the locus of control of those running it – with teaching staff often performing roles more akin to facilitators than lecturers (Boven, 2013). Whilst an academic may be happy for themselves and their course to receive the increased exposure, it can also create conflict. Since the institutional reputation is riding on each MOOC that is run, there may be pressure to teach material in a certain way. In one such case, a University of California faculty member withdrew from teaching part way through a Coursera course due to disagreements over how to teach the material (Kolowich, 2013b). Another academic spent time building a MOOC that was not run due to the materials being perceived to be of insufficient quality by the MOOC provider (Young, 2012). Above and beyond the time commitment required to teach a large course and deal with potentially thousands of students, the additional institutional pressure placed on MOOC teaching staff could have a serious impact on job satisfaction.

The literature on MOOCs is divided into two main areas: articles focussing on the teaching, pedagogy and quality of MOOCs, and articles, particularly from the media, about the impact and implications of MOOCs, with education academics tending to focus on the former and the media on the later. Whilst some institutions who have run MOOCs have surveyed participants, there has not been a study that focuses specifically on the perceptions of participants who also work in higher education.

METHODOLOGY

A snowball sampling method was used to distribute survey invitations. The invitations were distributed via Twitter and by email via personal networks, with recipients encouraged to forward them to other suitable candidates during November 2012. The Twitter invitation was retweeted amongst the Australian Society for Computers in Learning in Education (ASCILITE) conference participants, and then to the wider Twitter education community. The invite was retweeted at least 15 times to over 20,000 followers. At the 2012 ASCILITE conference potential participants were handed flyers to invite participation. Our population of interest was academics who had attempted at least one MOOC. Our definition of "academic" was someone working in a tertiary institution in a teaching and learning related role. They did not have to be a lecturer but did need to be involved in the educational process. This meant that we could include learning designers and other staff with an awareness of pedagogy and the tertiary sector. Participants of the survey were invited to provide contact details for a follow up focus group.

A total of 26 academics completed the survey. The survey questions are listed in the appendix of this paper. Although this is a relatively small sample size, the pool of potential participants – being an academic, and having participated in a MOOC, and available to be surveyed/interviewed – was also fairly small. While it is not possible to test the representativeness of the sample, the range of positions, disciplines, and institutions represented in the survey indicate that the survey is providing data of value.

There were three distinct groups within the sample; lecturers, learning designers, and non-teaching university staff (including librarians and learning resource/technical positions). In total there were 13 academics, six learning or e-learning advisors/designers and seven other tertiary staff. There were a wide range of views with some distinct patterns that separate the three groups. The findings of the survey are separated into data about the teaching and pedagogy of MOOCs and feelings about the wider impact of MOOCs. Given the small sample size and qualitative nature of most of the questions, a thematic analysis of the data was conducted, with the results presented in the form of themes and quotes rather than percentages. Since we were interested in the views of all academics

who had participated in a MOOC, we did not ask for geographic details. However, based on the snowball sampling method and some of the answers that were provided, we believe that most were from Australia and New Zealand.

The focus group comprised of one lecturer, one learning designer (online learning specialist) and a librarian, and was conducted in April 2013 on-campus at Swinburne University of Technology in Melbourne. This allowed us to gain a deeper understanding of their views, following a semi-structured format where we discussed their experiences, their thoughts on the pedagogy of the courses they had completed, and their opinions on the potential impact of MOOCs. The focus groups were recorded and transcribed for analysis.

RESULTS

The participants had enrolled with a range of different MOOC providers including Coursera, Udacity and EdX. It was common for those surveyed to have participated in multiple courses. One focus group participant described themselves as "a serial MOOCist", having participated in more courses than she could recall. There was a range of different topics, ranging from literature and music recording to programming and statistics. There were two main reasons participants gave for attempting a MOOC. The first was to learn more about an area of personal interest. These tended to be arts, music and humanities courses. The second was because they felt it would be useful for work or professional development. These courses fell into two groups: courses that were attempted in order to acquire new skills such as statistics or programming; or courses in their own field, where the participant was interested in how the materials were presented. One participant commented that they liked finding new materials, but seemed unaware of the potential copyright issues that could come from using them in their own course. However, another participant commented on how a finance course they were participating in locked all of the videos and materials after discovering that they were being redistributed and reused without permission.

Teaching

The survey participants were asked about their opinions of the pedagogy of the MOOCs that they had completed, as well as whether they believe that deep learning can be attained in the MOOC format. The general impressions of the pedagogy varied greatly by subject and provider. A common complaint from the participants who were dissatisfied with the MOOC they completed was that the material was just transferred directly from an on-campus course, with no thought to the online medium. Courses with material and exercises designed specifically for the online format were seen as more useful than others that are "*more traditional, more or less recording the lecturer talking into a camera*", which was regarded as less engaging.

A survey participant said that "I think there is a tendency to take up this new model and step back three or more paces in pedagogy to deliver "shovel ware" - loads of resources and uncreative tasks", while one of the focus group participants commented that the pedagogy was:

> "Terrible, the approach was clearly to transplant a f2f course directly online without considering the instructional design. It simply didn't work and the lecturer spent most of the course in damage control."

This dissatisfaction was often coupled with criticisms over the quality of the materials, particularly poorly produced videos, excessively long videos, and courses where to avoid long videos the videos had been cut into 20-30 short videos (which may be just as overwhelming as a long video). The other major issue was the lack of consideration of the size of the classes. For instance, some courses would have a single discussion board for the tens of thousands of participants. One participant commented:

> "Due to the overwhelming number of

> students who enrolled and given the first task was to introduce yourself on the discussion board and there were possibly 400+ messages to read through, I got to page 2 and gave up."

However, not all of the feedback was negative. Participants commented that the better courses were able to provide effective feedback with frequent quizzes, self-review multiple choice quizzes and peer assessed tasks. The short quizzes interrupting the videos were helping to keep students focused. As one participant commented, this "switches back from passive to active learning ".Very important to a respondent was also that the MOOC had clearly identified learning outcomes, while another liked that his MOOC's teaching philosophy matched his own, of constructivist, collaborative networked learning. Some video materials were well produced, with articulate and passionate subject experts. One of the focus group participants commented that despite there being tens of thousands of participants, the videos shot in the professor's office made her feel engaged and connected to the subject and the teaching staff. Another survey participant described the better courses as being:

> "Well-structured with clear expectations. Material was clearly presented using PowerPoint with professor speaking. Short lectures with self-review MC quizzes. Resources were all public access. Short videos of graduate students discussing various topic included. Strict deadlines for submission and peer and self-assessment of assignments."

While another commented:

> "The facilitation of communication between students is great. Lecturer/teaching assistant participation makes a huge difference (improved quality of engagement) but varies dramatically between courses. However, I feel I am learning the topics just as well as I would have in a traditional classroom."

Two participants commented on the motivational aspect of the MOOC: One actually preferred the MOOC to a class-room experience, the second felt that "*the pedagogy is very effective for students that are motivated either by the topic or the credit. However, for those who do not have self-motivation, I don't think they would get much out of it and it would be easy to drop out.*"

Completing the assessments was not a priority for our participants, with only two out of 26 survey participants completing assessment tasks for a MOOC. Most cited a lack of time, and their being interested in the content rather than a "certificate" as the reason for not attempting the assessment. This would suggest that academics who participate in MOOCs may be a different cohort from the participants who are more interested in courses that provide completion certificates. Two survey participants commented that they had observed plagiarism and cheating in MOOCs that did provide certificates, with students requesting or providing assessment answers on course discussion boards.

In addition to learning about academics' experiences as a MOOC participant, we were also interested in whether they considered the MOOC format one in which deep learning can take place. There was a clear division in responses between the learning designers, who resoundingly agreed that deep learning would be possible, but would require some work, whilst the remainder of the participants provided a chorus of "maybe", "not sure" and "I don't know". The learning designers were very positive about the possibilities available via the MOOC format. There were comments about connectivism and metacognition, and how if designed correctly, they would expect high quality deep learning to be possible in a MOOC.

Two of the three focus group participants were academics experienced in teaching online-only units. They agreed that the size of a MOOC makes it difficult to provide a quality education, and one commented: "I've got 110 students online [...] and I can't possibly imagine having 10,000 in those units and being able to deliver a quality service to them, 110 is enough." He experienced first hand how a MOOC can fail, as he had been one of the

students enrolled in Fundamentals of Online Education (discussed earlier). He said: "*[they] locked us all out of the course, said sorry. Yeah, it's quite interesting. So I was glad to be part of that experiment but yeah, that was tens of thousands of students there so I can understand the challenges*." While doing a different MOOC, this participant said that teams were formed to join students in smaller groups of 25, however "it wasn't explained what the purpose of teams were", and "*everyone was very confused and the convenor was overwhelmed with emails*".

Another theme that emerged from the focus group discussion was that of involvement and quality of teaching staff. While universities enrolling students in degrees need to follow quality assurance processes, which also include the careful selection of qualified teaching and teaching assistance staff, some MOOCs appear to take minimalist approaches and employ staff that may not qualify for teaching positions at a university. Comparing to his own involvement in teaching an online unit, one of the participants said "*I don't know how involved then the 'lecturer' for want of a better name was in the actual discussion groups, which seemed to be farmed off to the teaching assistants.*" While the lecturer came back into the discussion for short periods of time, "*the real teaching [...] is always in the discussion groups", and "the actual testing your understanding whether you've learnt anything comes from the teaching assistant [...] are they all equally capable or not?*"

Impact on Tertiary Education

Participants were asked about their thoughts on how MOOCs may affect their discipline, their institution and themselves. There were fewer responses to this part of the survey, with seven participants saying that they had not thought about it, were not sure, or just not answering the questions. Of the 19 participants who did complete the section, there was some concern about how MOOCs may affect them personally, but they were less certain about how they might impact the sector.

At a discipline level, there was some agreement that MOOCs could be beneficial for the promotion of a discipline. Of course, this does assume that it is well taught. Poorly presented subject matter may reinforce a dislike of a subject. This issue was observed by one participant in an introductory statistics MOOC that was taught in a not-so-introductory way, reinforcing some of the negative beliefs students had about the subject.

Most survey participants were from Australia and did not work at an institution that ran MOOCs, so were generally unsure or not expecting much impact at an institutional or country level. However, most saw MOOCs as being run largely as a marketing exercise for institutions rather than any particular altruistic purpose.

At an individual level, some participants voiced concern that the government view might be that they are replaceable with this style of education. One commented that:

> "Since lecturers and contingent faculty are those that cut first, I see some universities using it to get rid of these positions, instead hiring 'graders'. This means that there will be less perspectives as only a few 'experts' will have a voice if MOOCs are used in place of traditional research universities."

Similar views were discussed in the focus group. Although the participants felt that the media had hyped the impact of MOOCs, they still had concerns about how some commentators had described them as a replacement for the traditional tertiary education, and that were their institution to offer MOOC, it could have an impact on their teaching duties, and subsequently on their job satisfaction. Academics in positions that carry teaching loads more often than not have selected these positions because they enjoy teaching and the intellectual exchange with students. Removing *"individualism in the education"* by offering massive courses rather than education for just the students at one's own university may have adverse effect on job satisfaction of academics. While one of the

participants said that from his experience, he "*can't imagine that teaching a MOOC reduces your workload"* which means there is no pay-off in terms of increased research time for the involved academic, there is a chance that universities may lose highly qualified teachers and researchers should they delve too deeply into MOOCism. One of the focus group participants made the comment:

> "But if my entire teaching role was reduced to every semester record a few extra videos to replace the ones that didn't work last time, and then answering the same question ten thousand times, I have no intellectual satisfaction, no interest, if that takes up more and more of my time, I'm going to have to make a decision and so your universities will then risk losing really good teachers and they might not ever get them back. So then your overall quality of education is going to go down, because you've made a commitment to run a course, they've got to hire someone to do it, so I'll start hiring people who are at the same level educationally as the people that they're trying to teach, and I don't think that's a very sustainable model that universities are going to be happy about."

A focus group participant highlighted that a badly run open online course is not just reflected in bad lecturer feedback internally, it is reflected in an online international forum:

> "… you also need the IT support if that becomes successful, to make sure that you don't have the technology failures because I think once you fail once, there are many more people who will share the word that you failed versus within the safety of a university environment, you might get some bad student feedback and you make some changes to what you do but I don't think you can kill a course or kill a thing quite so easily within that environment, it doesn't reflect as badly on the university."

DISCUSSION

The negative perceptions of the pedagogy of MOOCS, described by Vardi (2012) seemed to be echoed by some of the survey participants who commented on the quality of resources and the style of courses. However, there is wide variety in the quality of MOOCs offered and others seemed to be very engaging to the motivated learner. Learning designers tended to side with de Waard et. al. (2011) and Mackness et. al. (2010), looking at the positives and the potential of MOOCs to engage students in deep learning.

Will MOOCs inform teaching in non-massive courses? The focus group agreed that a well-run MOOC gives a student a free taste of a university course and as more students participate in these, it will alter what their expectations are of a university. At present, most students only experience one, sometimes two universities in their academic career. MOOCs allow them to sample courses from many. On one hand, this will set higher expectations of what constitutes good teaching practice, and this may mean abolishment of traditional face-to-face only courses, to be replaced by blended learning models. On the other hand, it will also help set more realistic expectations of what to expect from a university course.

Meyer (2012) commented that some courses have had completion rates (generally defined as completing the assessment tasks) of less than ten per cent. Nearly all of the survey participants fall into the "non-completers" group, having not completed the assessments for their MOOC. Most commented that they were interested in learning material but did not feel that the assessments added value for them. One survey participant felt that this was in fact an advantage of MOOCS, commenting that in their discipline there is a tendency for students to go to university to get a degree rather than learn, but with MOOCs the focus was on learning rather than just getting a qualification.

Our observation of the media exposure given to MOOCs has changed, with fewer articles in 2013 predicting the end of a traditional

university education. At the same time, more and more Australian universities are producing MOOCs, for specific purposes such as the Open Universities Australia short teasers for online degree programs. As any marketing exercise, MOOCs need to be of high quality to increase the reputation of the delivering university, and to avoid PR disasters such as Georgia Tech's unsuccessful running of a MOOC that tarnished their teaching reputation.

Institutions should also consider the effect that running MOOCs may have on the staff who are required to run them and whose job satisfaction would diminish considerably if the sole teaching component of their job was to facilitate MOOCs.

6 CONCLUSION

MOOCs have quickly occupied a unique spot in the educational framework. They provide a wide range of disciplines, but seem to work best with courses teaching technical skills. They are limited in the way that faculty can interact with students, but may offer education to those who could not otherwise access or afford it.

Incorporating the feedback of our survey and focus group participants, together with the peer-reviewed literature and media content about MOOCS, we would consider that they have a valuable place as a compliment but not substitute to existing tertiary education. They offer a taster of university content, and allow universities to market themselves. This was succinctly put by one survey participant who said:

> "I think they are effective for lifelong learning, but not in place of traditional schooling as traditional schooling includes enculturating students as much as learning."

Further research on the "quality of MOOCs" could try to examine the views of academic participants, non-academic participants, and staff of a MOOC to see how their experiences of the same course differ.

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APPENDIX – SURVEY QUESTIONS

1. Do you work in an academic institution?
    a. What is your current role?
    b. Do you teach at university level?
    c. At what year level do you teach at university?
    d. In what discipline(s) do you teach?
    e. How long have you taught at university level?
2. What Massive Open Online Courses (MOOCs) have you participated in?
3. Why did you decide to participate in these MOOCs?
4. Are any of these MOOCs in your own discipline?
5. Did you complete all assessments for these MOOCs?
6. Have you experienced cheating by fellow students, or seen students opening share assessment answers on discussion groups?
7. What is your impression of the pedagogy of the MOOCs you participated in?
8. Do you think deep learning can be facilitated in MOOCs?
9. Why do you think the enrolments are so high in MOOCs?
10. What impact do you think MOOCS will have:
    a. In your discipline?
    b. At your university?
    c. In your country?
    d. On yourself as a university lecturer?

Do you have any other comments on MOOCs?

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A new classification schema for MOOCs

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ABSTRACT

This paper considers the pedagogies associated with different types of Massive Open Online Courses (MOOCs). It argues that the current discourse around the concept of xMOOCs (primarily based around interaction with content and essentially adopting a behaviourist learning approach), and cMOOCs (which focus on harnessing the power of social media and interaction with peers, adopting a connectivist learning approach), is an inadequate way of describing the variety of MOOCs and the ways in which learners engage with them. It will provide a brief history of the emergence of MOOCs and the key stakeholders. It will introduce an alternative means of categorising MOOCs, based on their key characteristics. It will then describe the 7Cs of Learning Design framework, which can be used to design more pedagogically informed MOOCs, which enhances the learner experience and ensure quality assurance.

KEYWORDS *Massive Open Online Courses (MOOCs), classification, quality assurance, Learning Design*

INTRODUCTION

Every few years a new disruptive technology emerges, i.e. something that fundamentally changes the way we do things (Christensen 1997). The Internet, mobile devices and even Virtual Learning Environments are all examples. With the Internet, institutions moved from communication through paper memos to ubiquitous use of email, similarly all departments have a web presence, both to promote the department's activities generally and to have at least some presence in terms of course offerings. Mobile phones have made landlines virtually redundant; and the functionality of today's smart phones means that they are used for far, far more things than simply making a phone call. Virtual Learning Environments made institutions realise that technologies were an essential part of the service they offered students. They enabled teachers to upload content and provide mechanisms for students to communicate and collaborate via tools such as forums, blogs and wikis.

The latest in the line of disruptive technologies is Massive Open Online Courses (MOOCs). Initiated by the *Connectivism and Connective Knowledge* course created by Siemen's et al. in 2008 (Wikipedia 2012), the number of MOOCs have proliferated in recent years. Indeed there isn't a Vice Chancellor or Rector in the world who isn't considering what the impact of these free online courses might have on traditional educational offerings. Martin Bean (Vice Chancellor of the Open University UK), talking about the announcement of FutureLearn[3], stated:

> "In 2012 that wave of disruption hit higher education. By the end of the year, 18 of the top 20 universities in North America were offering MOOCs – so that's the 'great brands' box ticked (Bean 2013)."

However, MOOCs have generated heated debate; opinions are divided about their value and importance. Some argue that they open up access to education and hence foster social inclusion, others cynically suggest that they are merely a marketing exercise – more about 'learning income than learning outcomes' and point to the phenomenally high drop out rates (typically between 95-98%).[4]

This paper will summarise some of the key discourses around MOOCs. It will describe the way in which they are being characterised as either xMOOCs or cMOOCs, but will suggest that this distinction is too limiting. It will put forward a categorisation that can better describe the nuances of different types of MOOCs and will demonstrate how this framework, along with new approaches to designing, through use of a Learning Design framework (the 7Cs of Learning Design) can be use to create more pedagogically effective MOOCs, which will enhance the learning experience and lead to quality enhancement of these types of courses (Conole 2012; Conole 2013).

THE LEARNING EXPERIENCE AND QUALITY ENHANCEMENT

Before discussing MOOCs, it is worth reflecting on what characterises good learning. An understanding of this will help frame the extent to which these facets of learning are realised in MOOCs and how they underpin the proposed framework described in this paper for providing a more quality assured approach to the design of MOOCs.

The nature of learning and the learner experience

Research into what constitutes good learning goes back to Dewey and beyond (Dewey 1916; Biggs 1999; Brown 2001; Thorpe 2002; Jarvis 2004; Sawyer 2006). More recently, there has been a substantial body of research exploring learners' experience of and perceptions about technology (Oblinger and Oblinger 2005; Borgeman, Abelson et al. 2008; De Freitas and

[3] http://futurelearn.com/

[4] For a debate on the pros and cons see the video of ASCILITE's 'The great MOOC debate' http://alternative-educate.blogspot.co.uk/2012/12/audio-ascilite-2012-great-debate-moocs.html

Conole 2010; Sharpe and Beetham 2010).[5] This research indicates that today's learners are technologically immersed and see technologies as an essential tool for learning, they use a variety of strategies for findings and collating resources and for communicating and collaborating with peers. In essence, the characteristics of good learning (Conole 2013) are that it:

- Encourages reflection
- Enables dialogue
- Fosters collaboration
- Applies theory learnt to practice
- Creates a community of peers
- Enables creativity
- Motivates the learners.

Technologies offer many ways in which these can be realised; through interaction with multimedia, and through communication and collaboration with peers (Traxler 2005; Conole and Alevizou 2010; Childs and Peachey 2011; Rennie and Morrison 2012). Technologies can be used to foster different pedagogical approaches, which can be characterised as: associative, constructivist, situative and connectivist (Conole, Dyke et al. 2004; Mayes and De Freitas 2004; Conole 2010).

Defining quality

There are a number of general teaching and learning national quality agencies. Specifically, in relation to quality and e-learning, EFQUEL[6] is Europe's professional body for quality in e-learning. EFQUEL's mission 'to promote excellence and innovation in education in order to achieve qualitative learning opportunities in Europe and beyond'.[7]

A fundamental aspect of ensuring a good learner experience is the quality of the course. It is important to distinguish between three main aspects of quality: quality audit, quality assurance and quality enhancement.

In general quality can be defined as 'the standard of something as measured against other things of a similar kind; the degree of excellence of something: quality of life'.[8] Therefore arguably quality in e-learning is the degree to which it measure up to 'good learning' (although that might be construed as a somewhat contentious statement). It certainly points to the notion of excellence and worth.

Quality assurance mechanisms are now requirements in most formal educational institutions and indeed many countries have a requirement for institutions to undergo externally reviewed quality audits on a regular basis. Institutional quality audit aims 'to contribute, in conjunction with other mechanisms, to the promotion and enhancement of high-quality in teaching and learning'.[9]

The Quality Assurance Agency in the UK describes quality assurance as 'the means through which an institution ensures and confirms that the conditions are in place for students to achieve the standards set by it or by another awarding body' (QAA 2004), and quality enhancement as 'the process of taking deliberate steps at institutional level to improve the quality of learning opportunities.... Quality enhancement is therefore seen as an aspect of institutional quality management that is designed to secure, in the context of the constraints within which individual institutions operate, steady, reliable and demonstrable improvements in the quality of learning opportunities' (QAA 2006). The EvidenceNet web page[10] from which these terms were taken, provides a diagram, which suggests that the two terms are in opposition (Figure 1).

[5] See also the JISC Learning Experience Programme (http://www.jisc.ac.uk/whatwedo/programmes/elearningpedagogy/learnerexperience.aspx)

[6] http://efquel.org

[7] http://efquel.org/aboutus/vision-mission/

[8] https://www.google.co.uk/search?q=quality+definition+elearning&aq=f&oq=quality+definition&aqs=chrome.0.59j57j0l2j60j62.4758j0&sourceid=chrome&ie=UTF-8#sclient=psy-ab&q=quality+definition+&oq=quality+definition+&gs_l=serp.3..0l4.2269.2269.0.2481.1.1.0.0.0.0.107.107.0j1.1.0...0.0...1c.1.14.psy-ab.oVQgVsASSAQ&pbx=1&bav=on.2,or.r_cp.r_qf.&bvm=bv.46751780,d.d2k&fp=13e85b7e7d899dc&biw=853&bih=343

[9] http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/eLearning.pdf

[10] http://evidencenet.pbworks.com/

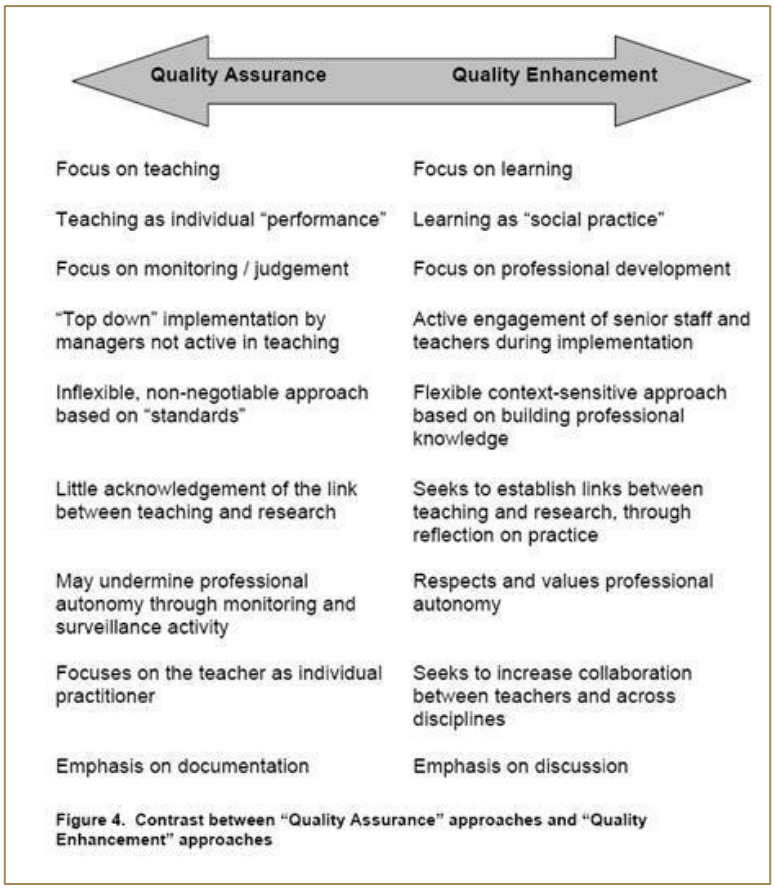

Figure 1 Comparing the focus of quality assurance and quality enhancement

However, Raban (2007) argues that the two are not in opposition, suggesting that we need to seek innovation and enhancement of learning:

> The improvement of teaching and learning and the dissemination of good practice are important; and conventional approaches to quality management can provide the intelligence and stimulus for this kind of enhancement. But these approaches are not conducive to more fundamental action on the deeper institutional factors that impact on teaching and learning; nor are they conducive to the promotion of innovative (and risk-taking) practice and the creation of new curricular and organisational structures. For this we require a 'modernisation' of our quality assurance systems that would facilitate risk-taking and anticipate its possible consequences.

This statement is of particular importance in relation to the increased use of technologies; clearly there are benefits as outlined earlier and mechanisms of promoting innovation, but equally there are risk associated. MOOCs are a prime example of this, on the one hand they offer an innovative, potentially exciting educational experience, which promotes social inclusion, on the other hand there are dangers is terms of a detrimental learner experience through bad design.

Ehlers et al. (Ehlers, Ossiannilsson et al. 2013) argue that quality is very much the condition which determines how effective and successful learning can take place. They go on to pose the following questions in relation to the quality of MOOCs:

- What are MOOCs actually aiming at?
- Can the quality of MOOCs be assessed in the same way as any defined university course with traditional degree awarding processes? Or do we have to take into

account a different type of objective with MOOC learners?
- Are the learners mostly interested in only small sequences of learning, tailored to their own individual purpose, and then sign off and move to other MOOCs because their own learning objective was fulfilled?

Discussing MOOCs and quality, Downes argues that:

> When we are evaluating a *tool*, we evaluate it against its design specifications; mathematics and deduction tell us from there that it will produce its intended outcome. It is only when we evaluate the *use* of a tool that we evaluate against the actual outcome. So measuring drop-out rates, counting test scores, and adding up student satisfaction scores will not tell us whether a MOOC was successful, only whether this particular application of this particular MOOC was successful in this particular instance (Downes 2013).

Therefore quality is a fundamental facet that needs to be considered in relation to both the design and delivery of MOOCs. We need to develop better metrics to understand the way in which learners are interacting with MOOCs and hence their experience of them.

The importance of good learning and enhancing the quality of the learner experience

This section has described both the characteristics of good learning and the concept and importance of quality. Both need to be considered in conjunction to enhance the quality of the learner experience. Whilst mechanisms to ensure this are well established in formal education institutions, such mechanisms are not in place, certainly not in any formal sense, for MOOCs. And arguably this is a key issue that needs to be address if MOOCs are going to valuable and viable learning experiences and be sustainable in the longer term.

MASSIVE OPEN ONLINE COURSES (MOOCS)

This section will begin by defining MOOCs and providing a brief description of their emergence. Key stakeholders will be described, along with the perceived benefits and challenges associated with MOOCs. The types of MOOCs will be discussed and a new classification framework for distinguishing different types of MOOCs will be introduced.

3.1 A brief history of MOOCs

MOOCs have been defined as:

> A massive open online course (MOOC) is an online course aimed at large-scale interactive participation and open access via the web. In addition to traditional course materials such as videos, readings, and problem sets, MOOCs provide interactive user forums that help build a community for the students, professors, and TAs (Teaching Assistants) (Wikipedia 2012).

The acronym highlights the key components; i.e. that they are online courses which harness the potential for learning in a large-scale, distributed community of peers, through open practices.

Much has been written about the emergence of MOOCs as a phenomenon, these are not listed here, but for an up to date account of MOOC research, there are two recent special issues which point to much of the literature in the field,[11] and at the time of writing there is a call out for a special issue of Distance Education.[12] Siemens et al. created the first MOOC in 2008, called '*Connectivism and Connective Knowledge*'. The course was based on a connectivist pedagogy, which aimed to foster the affordances of social and participatory media. It relied on the benefits of

[11] http://elearningyork.wordpress.com/2013/05/14/elearning-papers-special-moocs-and-beyond/ and http://ispr.info/2012/10/26/call-massive-open-online-courses-moocs-special-issue-of-journal-of-online-learning-and-teaching-jolt/ (due out late 2013).

[12] http://www.tandf.co.uk/journals/cfp/cdiecfp.pdf

scale though significant interaction with a distributed network of peers. Participants were encouraged to use a variety of technologies; to reflect on their learning and to interact with others. There was no 'right way' through the course; the emphasis was on personalised learning through a personal learning environment. Variants on this course emerged, collectively known as cMOOCs, examples included: David Wiley's course on '*Open Education*', [13] '*Personal Learning Environments and Networks (CCK11)*',[14] and '*Learning Analytics (LAK12)*'.[15]

A second type of MOOC emerged in 2011, namely xMOOCs. These were primarily based on interactive media, such as lectures, videos and text. xMOOCs adopted a more behaviourist pedagogical approach, with the emphasis on individual learning, rather than learning through peers. As a result a number of companies emerged, such as: Audacity,[16] EdX,[17] and Coursera.[18] These courses tend to be offered by prestigious institutions, such as Harvard and Stanford, the emphasis is on delivery of content via professors from these institutions.

Nkuyubwatsi provides a useful overview of MOOCs, including a review of some of the key courses from 2008 to the present day (Nkuyubwatsi 2013). He discusses the key controversy around MOOCs, stating that MOOCs are hailed for their fit within a knowledge society, providing each learner with opportunities to engage with material via formative assessments and the ability to personalise their learning environment. However, he goes on to state that they are criticised for the lack of constructive feedback and the lack of creative and original thinking, citing Bates (2012) and low completion rates, citing Daniel (2012).

Pedagogical approaches

Participation in MOOCs can range from informal non-accredited participation through to engagement as part of a formal course offering. In some instances, tuition-paying students taking courses for credit join the same class as non-tuition paying, non-credit learners.

Many xMOOCs are primarily based on interactive material and videos plus multiple-choice quizzes. Udacity, Coursera and EdX courses consist mainly of lecture videos, course materials, quizzes and assignments. Some do contain wikis and discussion forums, although these are not extensively promoted or used. In some cases forum posts can be up- or down-voted by other participants; if a post is up-voted that participant receives a 'karma point'. For some Udacity courses, participants have organized their own meet-ups with others who are Geographically co-located. Udacity has set up a meet-up site to facilitate this.

Cormier, in a video describing the nature of Connectivist MOOCs,[19] defines five steps to success: orient, declare, network, cluster and focus. He also argues that knowledge in a MOOC is emergent and dependent on the interaction with others. In his *PLENK2010* course he defines four types of activities: aggregate, remix, repurpose and feed forward. Therefore the intention of cMOOCs is to harness the power of social and participatory media to enable participants to communicate and collaborate through a variety of channels; for example Twitter, blogs, wikis, etc. and the use hashtags and curation tools (such as Pinterist or Scoop.it) to filter and aggregate. The focus is on personalisation, but also collective intelligence (Lévy 1997). Each participate forges their own learning path through the materials; picking and mixing which content, activities and communications are meaningful for them. These types of course align well with Cormier's notion of Rhizomatic learning (Cormier 2008; Cormier 2011), i.e. networks are horizontal, dynamic and emergent, developing in different

[13] https://learn.canvas.net/courses/4
[14] http://cck11.mooc.ca/
[15] http://lak12.mooc.ca/
[16] https://www.udacity.com/
[17] https://www.edx.org/
[18] https://www.coursera.org/
[19] http://www.youtube.com/watch?v=eW3gMGqcZQc

directions for different individuals. Barry provides a nice comparison of three different MOOCs in terms of workload, technology, content, pedagogy, assessment, etc. (Barry 2013).

Assessment models for MOOCs vary, from simple Multiple Choice responses, through to peer-reviewed feedback and more formal, traditional modes of assessment. *DS106,*[20] adopted an interesting approach to assessment, whereby course assignments were collectively created by participants and then posted to an assessment bank (EDUCAUSE 2013). Participants could then choose which assignment they wanted to do which were rated on a difficulty of 1 – 5. In this model the assessment bank expanded for use by further participants. An interesting recent innovation in terms of assessment is the use of open badges. The concept is simple; learners can apply for badges demonstrating their completion of aspects of a MOOC. This may be as simple as completion of part of the course or evidence of particular aspects of learning. Badges have criteria associated with them; learners are expected to demonstrate how they have achieved these criteria and this is validated either by peers or tutors. The Mozilla's Open Badges,[21] are perhaps the best known examples of badges. Their slogan is 'Get recognition for skills you learn anywhere'. There are three parts to the process: earn (earn badges for skills you learn online and off), issue (get recognition for things you teach) and display (show your badges on the places that matter).

Therefore there are a variety of different pedagogical approaches being adopted in different MOOCs, some emphisising individual learning through interactive materials, others focusing more on social learning.

Stakeholders

The stakeholders for MOOCs are essentially learners (in terms of participating in the MOOCs, tutors (if there are any – in terms of facilitating the MOOCs), teachers (in terms of designing and assessing the MOOCs), institutional managers (in terms of considering their place alongside traditional educational offerings), policy makers (in terms of thinking of the longer term implications for the educational landscape) and venture capitalists (looking to get a return on investment).

Arguably the origin of MOOCs was bottom up; developed by individuals with a vision for promoting open educational practices[22] and fostering connectivist learning approaches through use of social and participatory media. However the recent emergence of start-ups, like Audacity, and initiatives like FutureLearn suggest a shift to a more top down structured approach. Coupled with this, there is evidence of an increase in the notion of open education at policy debate. For example, in December 2012, the Opening up Education through Technologies conference was held in Oslo. The conference was aimed at ministers of education across Europe, to inform them of current thinking on openness and the implications for policy. UNESCO has long being a promoted of Open Educational Resources, stating that:

> UNESCO believes that universal access to high quality education is key to the building of peace, sustainable social and economic development, and intercultural dialogue. Open Educational Resources (OER) provide a strategic opportunity to improve the quality of education as well as facilitate policy dialogue, knowledge sharing and capacity building.[23]

Whether there is a tension between the grass roots initiatives and the more structured approaches remains to be seen.

[20] http://ds106.us/

[21] dougbelshaw.com/blog/2012/07/19/informal-learning-gaming-and-openbadges-design/#.UAviyURJH40

[22] Open Educational Practices (OEP) were first defined in relation to the creation, management and repurposes of Open Educational Resources (OER) as part of the OPAL initiative (http://www.oer-quality.org/), i.e. a focus on how OER are being used rather than their production per se. The notion has seen been expanded to cover other facets of Open Education, including MOOCs. Therefore I would argue OEP relate to adopting more open practices in educational contexts.

[23] http://www.unesco.org/new/en/communication-and-information/access-to-knowledge/open-educational-resources/

The plethora of MOOCs now available, in a variety of languages (although the majority are still in English), is staggering. Recent examples include: the announcement in the UK of FutureLearn (with 21 UK institutions), Open2Study from the Open University of Australia and the EU-based OpenUpEd.

Classifying MOOCs

Terminology is always tricky when trying to describe a new disruptive technology. Even the term for the use of technology to support learning is contested and various terms have been used over the years: educational technology, learning technology, networked learning, Technology-Enhanced Learning, etc. (Conole and Oliver 2007). MOOCs can be seen along a spectrum of adopting more open education practices; from the concept of Learning Objects (Littlejohn 2003) and more recently Open Educational Resources (Glennie, Harley et al. 2012).

As mentioned earlier, to date, MOOCs have been classified as either xMOOCs or cMOOcs. I want to argue that such a classification is too simplistic and in this section put forward an alternative mechanism for describing the nature of MOOCs. Downes suggest four criteria: autonomy, diversity, openness, and interactivity (Downes 2010). Clark (2013) recently provided the follow taxonomy of types of MOOCs:

- transferMOOCs – where existing courses are transferred to a MOOC
- madeMOOCs – which are more innovative, making effective use of video and interactive material and are more quality driven
- synchMOOCs – with a fixed start and end date
- asynchMOOCs – which don't have fixed start and end dates and have more flexible assignment deadlines
- adaptiveMOOCs – which provide personalised learning experiences, based on dynamic assessment and data gathering on the course
- groupMOOCs –where the focus is on collaboration in small groups
- connectivistMOOCS – emphasis on connection across a network of peers
- miniMOOCSs - which are much smaller than the traditional massive MOOC

Reich asked the question is a MOOC a textbook or a course (Reich 2013)? He suggests that even the notion of a course is contentious, with parameters such as: start/end dates, self-paced or directed learning, skills or content based, the nature of interactions and whether or not certification is included. He suggests there are two analogies for MOOCs; as books or courses. I think these analogies are flawed. Learning occurs along a spectrum from informal to formal; from loosely based resource-based learning to a structured, time-defined course, which is accredited. MOOCs, in my view, can fit along any point of this spectrum; i.e. they can be used by individuals to support informal learning, where learners might not complete all of the MOOC, but instead dip into different aspects - through to receiving full accreditation and being part of an institutional provided formal course.

I want to suggest that a better classification of MOOCs is in terms of a set of twelve dimensions: the degree of openness, the scale of participation (massification), the amount of use of multimedia, the amount of communication, the extent to which collaboration is included, the type of learner pathway (from learner centred to teacher-centred and highly structured), the level of quality assurance, the extent to which reflection is encouraged, the level of assessment, how informal or formal it is, autonomy, and diversity. MOOCs can then be measured against these twelve dimensions (Table 1). The following MOOCs are shown to illustrate how different MOOCs map to these ten dimensions:

1. **Connectivism and Connective Learning 2011 (CCK).**[24] The course took part over twelve weeks. The course uses a variety of technologies, for example, blogs, Second Life, RSS Readers, UStream, etc. Course resources were provided using

[24] http://cck11.mooc.ca/

gRSShopper and online seminars delivered using Elluminate. Participants were encouraged to use a variety of social media and to connect with peer learners, creating their own Personal Learning Environment and network of co-learners.

2. **Introduction to Artificial Intelligence (AI) 2011 (CS221).**[25] The course ran over three months and included feedback and a statement of accomplishment. A small percentage of participants enrolled registered for the campus-based Stanford course. The course was primarily based around interactive multimedia resources. The course is now based on the Audacity platform.
3. **OLDS (Learning Design) (OLDS) 2013.**[26] The course ran over eight weeks, with a ninth reflection week. It was delivered using Google Apps, the main course site being built in Google Drive, Google forums and Hangouts were also used. Cloudworks[27] was used as a space for participants to share and discuss their course artefacts and to claim credit for badges against course achievements.
4. **Openness and innovation in elearning (H817).** [28] The course is part of the Masters in Open and Distance Education offered by the Open University UK. H817 runs between February and October 2013 months, however the MOOC component of the course consists of 100 learning hours spread over seven weeks from March 2013 and is open to a wider audience than those registered on the OU course. The course adopts an 'activity-based' pedagogy. There is an emphasis on communication through blog postings and the forum. Participants have the opportunity to acquire badges for accomplishments.
5. **Introduction to Openness in Education (OE).**[29] The course tutor advocates that "learning occurs through construction, annotation and maintenance of learning artifacts," which is the philosophy that underpins the design of the course. Participant could acquire badges for various accomplishments.

[25] https://www.udacity.com/course/cs271
[26] http://www.olds.ac.uk/
[27] http://cloudworks.ac.uk
[28] http://www.open.edu/openlearn/education/open-education/content-section-0
[29] https://learn.canvas.net/courses/4

Dimension	Low	Medium	High
Open		H817, OE, AI	CCK, OLDS
Massive	OLDS, H817, OE	CCK	AI
Use of multimedia		CCK, OLDS, H817, OE	AI
Degree of communication	AI	OLDS, H817, OE	CCK
Degree of collaboration	AI	CCK, OLDS, OE	H817
Learning pathway	CCK	OLDS, H817, OE	AI
Quality Assurance	CCK	AI, OLDS, OE	H817
Amount of reflection	AI	OLDS, OE	CCK
Certification	CCK[30]	OLDS, AI	OE
Formal learning	AI, CCK	OLDS	H817, OE
Autonomy		H817, OE	CCK, OLDS, AI
Diversity		H817, AI, OLDS	CCK, OE

Table 1 Mapping 5 course to the 10 dimensions of MOOCs

The table demonstrates that, in terms of the twelve dimensions, the five MOOCs illustrate examples of low, medium and high degrees of each. I would argue that at a glance this classification framework gives a far better indication of the nature of each MOOC than the simple classification as xMOOCs and cMOOCs.

ENHANCING THE QUALITY OF MOOCS THROUGH LEARNING DESIGN

Despite the potential of new technologies to support learning, there is a gap between the reality and practice; teachers lack the skills needed to harness the power of new technologies (Conole 2013). In particular, as outlined earlier, many criticise MOOCs,

[30] Although it was possible to obtain certification from the University of Manitoba for completion of the course

pointing to high drop out rates and learner confusion and frustration. Particularly, with cMOOCs many participants complain that they are confused by the multitude of communication routes. Another common complaint relates to workload, i.e. the actual time required to complete the courses far exceeds the stated time allocation. Critics of xMOOCs argue that they represent a 'step back' pedagogically, re-instantiating didactic learning, which they argue does not translate well into the online learning environment.

The 7Cs of Learning Design framework (Figure 1) aims to provide teachers with the guidance and support they need to make more pedagogically informed design decisions that make effective use of new technologies. It consists of the following elements: Conceptualise (what is the vision for the course?), Capture (a resource audit), Communicate (mechanisms to foster communication), Collaborate (mechanisms to foster collaboration), Consider (assessment strategies), Combine (overarching views of the design), and Consolidate (implementing and evaluating the design in a real learning context). For each C we have developed a range of resources and tools to guide the teacher through the design process.. These include the Course Features view (Conceptualise), which enables teachers to design a vision for the course in terms of key principles and pedagogical approaches), a resource audit (Capture), mechanisms to foster communication and collaboration (Communicate and Collaborate), assessment strategies, such as ensuring learning outcomes are aligned to assessment elements (Consider), a Course Map view, showing what guidance and support, content and activities, reflection and demonstration, and communication and collaboration are included, along with an activity profile showing the percentage of time learners spend on different types of activities (Combine), and an evaluation rubric for assessing the quality and effectiveness of the design(Consolidate).

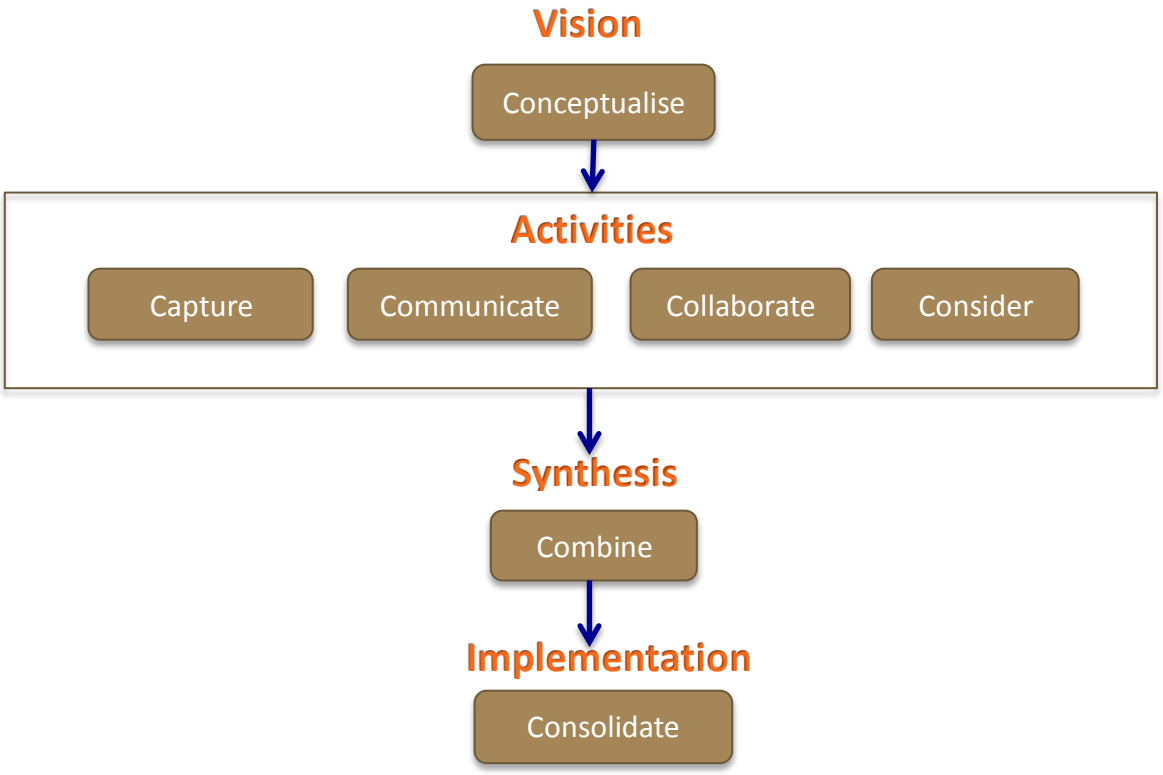

Figure 2 The 7Cs of Learning Design Framework

Dimension	Degree of evidence
Open	High - The course is built using open source tools and participants are encouraged to share their learning outputs using the creative commons license.
Massive	Low – The course is designed for Continuing Professional Development for Medics in a local authority.
Use of multimedia	High – The course uses a range of multimedia and interactive media, along with an extensive range of medical OER.
Degree of communication	Medium – The participants are encourage to contribute to a number of key debates on the discussion forum, as well as keeping a reflective blog of how the course relates to their professional practice.
Degree of collaboration	Low – The course is designed for busy working professionals, collaboration is kept to a minimum.
Learning pathway	Medium – There are two structured routes through the course – an advanced and a lite version.
Quality Assurance	Medium – The course is peer-reviewed prior to delivery.
Amount of reflection	High – Participants are asked to reflect continually during the course, their personal blogs are particularly important in this respect.
Certification	Medium – Participants can obtain a number of badges on completion of different aspects of the course and receive a certificate of attendance.
Formal learning	Low – The course is informal and optional.
Autonomy	High – Participants are expected to work individually and take control of their learning, there is little in the way of tutor support.
Diversity	Low – The course is specialised for UK medics in one local authority.

Table 2 Example of using the MOOC criteria in the design of a course

The MOOC criteria outlined earlier fits under the Conceptualise C. It can be used to plan the design of the MOOC against these twelve criteria. Table 2 shows how these criteria can be used to characterise a Continuing Professional Development course for Medics. The course is informal and is aimed at Medics in a local authority in the UK.

The 7Cs framework can be used both to design and evaluate MOOCs. The tools and resources associated with each of the Cs enable the designer to make more informed design decisions. The evaluation rubric under the Consolidate C enables them to ensure that the design is fit for purpose, hence ensuring the quality of the MOOCs and the ultimate learner experience.

CONCLUSION

It is evident that there are a number of drivers impacting on education. Firstly, universities are increasingly looking to expand their online offerings and make more effective use of technologies. Secondly, there is increasing demand from higher student numbers and greater diversity. Thirdly, there is a need to shift from knowledge recall to development of skills to find and use information effectively. In this respect, there is a need to enable learners to develop 21st Century digital literacy skills (Jenkins 2009) to equip them for an increasingly complex and changing societal context. Finally, given the proliferation of new competitors, there is a need for traditional institutions to tackle new competitive niches and business models.[31] MOOCs represent a sign of the times; they instantiate an example of how technologies can disrupt the status quo of education and are a forewarning of further changes to come. Whether or not MOOCs will reach the potential hype currently being discussed is a mote point, what is clear is that we need to take them seriously. More importantly, for both MOOCs and traditional educational offerings we need to make more informed design decisions that are pedagogically effective, leading to an enhanced learner experience and ensuring quality assurance.

Finally, the key value of MOOCs for me is that they are challenging traditional educational institutions and having to make them think

[31] As a recent article states MOOCs are challenging traditional institutional business models http://www.universityworldnews.com/article.php?story=20120831103842302

about what they are offering, how it is distinctive and what the unique learner experience will be at their institution. As Cormier states:

> When we use the MOOC as a lense to examine Higher Education, some interesting things come to light. The question of the 'reason' for education comes into focus (Cormier 2013).

Furthermore, UNESCO estimate that more than 100 million children can't afford formal education,[32] MOOCs provide them with a real lifeline to get above the poverty line. This, and the fact that MOOCs provide access to millions. As Creelman notes:

> Whatever you think of them they are opening up new learning opportunities for millions of people and that is really the main point of it all (Creelman 2013).

So for me the value of MOOCs to promote social inclusion, coupled with them making traditional institutions look harder at what they are providing their students, signifies their importance as a disruptive technology. For me therefore, whether they survive or not, if they result in an opening up of education and a better quality of the learner experience that has got to be for the good.

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[32] http://enikki.mitsubishi.or.jp/e/event/index6.html

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INNOQUAL
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Perspectives on MOOC quality - An account of the EFQUEL MOOC Quality Project

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KEY MESSAGE

Massive Open Online Courses (MOOC) represent a recent stage in open education. In more and more institutions they are moving from an early entrepreneurial stage into the reality. The rapidly rising participation levels, high visibility and a growing community worldwide prompt a number of important questions.
The MOOC Quality Project, an initiative of the European Foundation for Quality in E-Learning (EFQUEL), addresses the question of quality and MOOCs, not by trying to find one answer which fits all, but by trying to stimulate a discourse on the issue of quality in MOOCs. A series of blogposts by eleven worldwide experts and stakeholders in the field addressed the issues from each participant's viewpoint.
From twelve experts' blog contributions key quality areas were identified by way of document analysis, amongst which were addressing a massive (and often unspecified) target group, mixing formal and informal learners, learning across contexts, transparency and openness, peer-to-peer pedagogy, choice-based learning and learner support.

KEYWORDS *EFQUEL, MOOC, MOOC quality project, personalization, quality, choice- based learning*

INNOQUAL Practice
The work below was submitted to the INNOQUAL call for practice-based papers, i.e. stories from the field and reflections on current practice.

INTRODUCTION: OPEN EDUCATION ON THE RISE

Since Dave Cormier has coined the term MOOC, what he described is a moving target. While Downes and Siemens in 2008 focussed on creating mass communication and interaction with what today is known as cMOOC, where c stands for "connectivist type" of MOOC, and the set of main characteristics is described as aggregate, remix, repurpose, feed forward, also other types of MOOCs are emerging, often referred to as xMOOCs. xMOOCs are large (by numbers) – usually by far larger than cMOOCs - content related courses, often of famous professors from highly reputed universities, which are opened to online participants which learn autonomously without (necessarily) much focus on creating social interaction. A first xMOOC has been the course of Sebastian Thrun on Artificial Intelligence with about 130.000 participants (see figure 1).

MOOCs can be characterized through the following elements, they are

- highly specific learning environments, characterised by a high degree of pre-structure content, often in video or (portable) document format (specifically xMOOCs),
- vast but unstructured landscapes of opportunities of social interaction with the variety of fellow course participants from the crowd (specifically true with cMOOCs),
- of a certain, often weekly pace of learning events like a live session or a paced content release.
- open freely available to everbody who wants to take part in them
- can lead to a certificate through submitting assignmenets or registering for an exam.

MOOCs do not so much constitute a learning revolution but to a certain degree reveal what technology can achieve – create educational offerings for masses. Soon voices were heard that if all universities would open their courses to the masses than this would solve the problems of equal access to education, and for the first time truly would democratize education. Now, sometime later, being through the first pioneer trials, a more balanced view emerges in conversations, informed through accounts of experiences from first „users" and a more detailed consideration can be seen. Like with every other learning innovation MOOCs first raised a lot of interests and promises but now come down to evaluate if the promises can be seen in the long term and on sustainable basis. One aspect which due to the young age of MOOCs

FIGURE 3. MOOCs

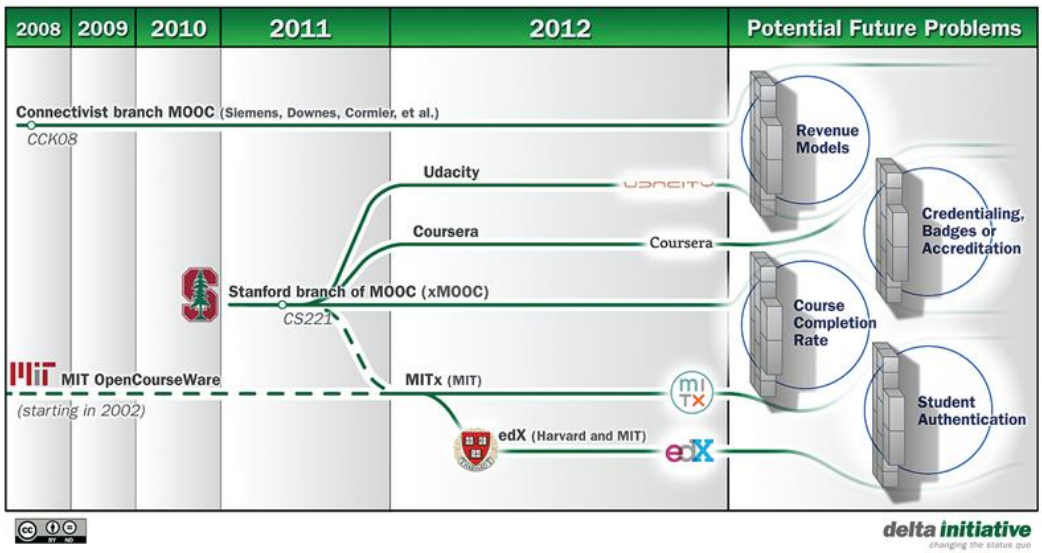

Figure 1 A MOOC Timeline

as learning innovation so far has not yet been analyzed is the aspect of quality of MOOCs. As with every other learning environment the quality is very much the condition which determines how effective and successful learning can take place.

The underlying assumption in this article as well in earlier writings is that a learning environment by itself has not a certain determined quality, but only gains quality in relation to the learners, their characteristics, abilities as well as preferences.

2. Approaching the Question of Quality of MOOCs

What could be a suitable quality framework for MOOCs. Should it be a content oriented type of framework which is assessing the quality of the content objects which are presented in a MOOC? Then subject matter experts would be needed and an analysis of the learning design to evaluate how content is presented, which type of learning objectives and assignments are given. Or should it rather be a framework relating to the desired social interaction which are specifically in cMOOCs the desired outcome, then it would probably be a model based on the Community of Practice Model or situated around the theory of constructivist or connectivist assumptions. In all three then, there would be a focus on looking at the progression of learners growing into the community of their peers in a way that they built up expertise through making use of the connections an links they build within the sphere of social interaction. All in all it comes down to the question what are the specific characteristics of MOOCs to see how quality can be described, ensured and developed.

The MOOC Quality Project[33], an initiative of the European Foundation for Quality in E-Learning (EFQUEL)[34], addresses the question of quality and MOOCs, not by trying to find one answer which fits all, but by trying to stimulate a discourse on the issue of quality in MOOCs. A series of blogposts by eleven worldwide experts and stakeholders in the field addressed the issues from each participant's viewpoint. The blogposts attracted considerable interest from readers worldwide and during the 12 weeks (May - September 2013) more than 15,000 people read the blog posts and many readers also made use of the feedback options with sometimes lively discussions, even between the experts. The project was disseminated through social media, like Scoopit, Twitter and Facebook and as well in the contributors' own networks. This project could rightly be described as the first MOBP – a Massive Open Blog Project.

The project started because at that time the discussion on the quality of MOOCs was not yet mature enough to come to conclusions on a sustainable model for quality in MOOCs. The aim was to start a conversation on MOOC quality by involving those who had participated in the development of MOOCs and had written and reflected extensively on the subject. Through this we wanted to extract dimensions that could be used to develop the language of quality for MOOCs.

Thanks to the contributors we have now an excellent base from which to further develop the concept of quality in MOOCs. When the project and this discussion started we realised that we were shooting at a moving target. New MOOC models are appearing each month as are potential new business models. One point that emerged in the project was that MOOCs demand new thinking about quality and that direct comparison with regular for–credit university courses are often misleading. Some criteria will be similar to those applied to traditional syllabus but will probably manifest themselves in new ways. Other criteria will apply more specifically to the online environment. The notion of choice seems to be a very important aspect when it comes to MOOC quality. Are dropouts viewed as a sign of deficient quality or are they an expression of individual choice and actually designed into MOOCs? This is just one example leading the way to new thinking on quality in this field.

There are many factors to be considered when assessing MOOC quality. One of the most

33 http://mooc.efquel.org/[cited 30 June 2014]
34 http://efquel.org/ [cited 30 June 2014]

important aspects is the pre-course information available to prospective students and whether some kind of declaration of contents can be agreed upon showing clearly the type of course, pedagogical approaches to be used, level of student commitment, schedule/deadlines, technical requirements, role of teacher/tutor (if any), availability and level of interaction, availability of credentials etc. The key issue is perhaps to ensure that promises are kept and that MOOC providers provide clear information about what the course can and cannot offer.

STUDY DESIGN: AN EXPERTS' INQUIRY

On May 8th 2013 EFQUEL launched a series of blog posts from acknowledged experts on the topic of defining MOOC quality. The invited experts decided themselves about the theme they wished to focus on. The project followed some simple rules: a duration of 12 weeks with each week featuring one new contribution, of maximum 1500 words. Every Wednesday noon a new post was published with opportunities to comment and discuss on the topic. The project was then disseminated at the EFQUEL Innovation Forum in Barcelona 2013[35] in an extra-long session aptly named the MOOCathon. The MOOCathon was run as a workshop where the key issues from the project were discussed and input from several recent European MOOC initiatives was added to the mix.

The project started with an introductory article by Ehlers, Ossiannilsson and Creelman (2013) who also summarised the lessons learned at the end of the project period. The full schedule for the project can be seen in Table 1 below with links to each post.

The expert panel stems from different field of experience and expertise as can be seen below:

Stephen Downes, National Research Council of Canada and one of the team who launched the original MOOC concept in 2008, opened the discussion by claiming that the success of a MOOC is process-defined rather than outcomes-defined and that it should be seen as a vehicle for discovery and experience. Each learner has her/his own objectives and success criteria and the success of the course depends on each learner meeting their own goals. He offered four key success factors for a MOOC: autonomy, diversity, openness, interactivity. The success or failure of a course depends on how well it satisfies these criteria.

Dave Cormier, University of Prince Edward Island, Canada, another leading practitioner of open education and inventor of the term MOOC, identified four stakeholders each with their own motivators:

- the researcher/activist/community organizer and their reasons for running the course.
- higher education institutions and their interest in enhancing community outreach, reputation and participation in the public arena.
- governments and their interest in widening participation in education as well as saving money
- investors and their interest in return on investment.

Each stakeholder and participant judges course quality from their own perspective and so MOOC quality has many dimensions. However his conclusion is that we need to look at what MOOCs can achieve in a much broader perspective but still focused on the individual.

> "The quality that I'm interested in, the of the impact of our learning on our culture, is not measured in dollars, or votes or students. The question that I'd like to leave you all with is: how are you going to support the quality you believe in?"

Asha Kanwar, one of the world's leading advocates for learning for development and President of the Commonwealth of Learning (COL), and **Venkataraman Balaji**, specialist in the area of ICT in rural development, reflected on their experience with MOOCs in India and observed that they were more like

[35] http://eif.efquel.org/archives/eif2013/ [cited 30 June 2014]

Date 2014	Expert
8.5.	Introductory post by Prof. Dr. Ulf-Daniel Ehlers, Ebba Ossiannilsson, Alastair Creelman http://bit.ly/1qqHU9v
15.5.	Stephen Downes, National Research Council of Canada *The Quality of MOOCs* http://bit.ly/1pE85Kh
22.5.	Dave Cormier, Web Technology Specialist for the University of Prince Edward Island, Canada *Forget the learner – how do I measure quality experience for ME!* http://bit.ly/1k5AFw0
29.5.	Prof. Asha Kanwar, President of Commonwealth of Learning, Canada, Dr. Venkataraman Balaji *An Experience of an Indian MOOC* http://bit.ly/1nWuOKY
5.6.	Prof. Dr. Grainne Conole, University of Leicester, UK *A New Classification for MOOCs* http://bit.ly/1z1VR02
12.6.	Claudia Bremer, Learning Technology Specialist, University Frankfurt, Germany *Keeping our promise* http://bit.ly/1rPiSOK
19.6.	Prof. Dr. Martin Weller, Institute of Educational Technology, Open University, UK *MOOCs & quality* http://bit.ly/1mdmESL
26.6.	Julius Kvissberg, Student, Lund University, Sweden *MOOCs, a student perspective* http://bit.ly/TJeLbr
3.7.	Paul Stacey, Director Creative Commons *The pedagogy of MOOCs* http://bit.ly/1nWuZWr
10.7.	Wayne Macintosh, Director OER Foundation, New Zealand Quality and the eye of the MOOC beholder http://bit.ly/1nYhkzF
17.7.	Prof. Dr. Gilly Salmon, Pro Vice-Chancellor of Learning Transformations at Swinburne University of Technology, Melbourne, Australia *MOOOCS – Massive Opportunities to Overcome Organisational Catastrophes* http://bit.ly/1m2cF13
24.7.	Yves Epelboin, Professor at University P.M. Curie (Paris, France) *About MOOC in Europe* http://bit.ly/1z1W8QH
2.9.	Alastair Creelman, Ulf Ehlers, Ebba Ossiannilsson MOOC quality – what have we learned? http://bit.ly/1nYhAi5
24.10	Ebba Ossiannilsson, Alastair Creelman, Ulf Ehlers MOOCathon in Barcelona http://bit.ly/1z1Wgj1

Table 1 Schedule of contributions

online conferences than regular courses. Activity extended far beyond the bounds of the actual course with participants forming groups to discuss and develop points of interest and developing new material. A key quality factor was the provision of teacher development to adapt to this new learning environment.

Grainne Conole, professor of learning innovation at the University of Leicester, proposed a set of twelve dimensions for classifying MOOCs and mapped five MOOCs with varying approaches on to these dimensions. The quality of a MOOC, she argued, can be judged by how well the course meets these key dimensions.

> "I want to suggest that a better classification of MOOCs is in terms of a set of twelve dimensions: the degree of openness, the scale of participation (massification), the amount of use of multimedia, the amount of communication, the extent to which collaboration is included, the type of learner pathway (from learner centred to teacher-centred and highly structured), the level of quality assurance, the extent to which reflection is encouraged, the level of assessment, how informal or formal it is, autonomy, and diversity."

Claudia Bremer, head of the e-learning center of the University of Frankfurt, stressed the importance of keeping our promises when offering a MOOC. Detailed pre-course information and transparent course design are essential to ensure that participants know what to expect. The expected amount of commitment must be clear from the start though options for different levels of pace must also be available. In addition to the twelve dimensions proposed by Conole, Bremer suggests the following key factors:

target group, teaching and learning methods, social settings, tutoring, learning outcomes, underlying learning theory and course structure.

Martin Weller, leading researcher in open education and professor at the UK's Open University, and in 2014 awarded the ICDE Chair in OER, warned against comparing MOOCs with formal Higher Education courses since they are still in the experimental stage and have radically different purpose and format. Higher education filters students applying for courses whereas MOOCs welcome all who wish to participate. There are new types of learner in MOOCs today and Weller introduces terms like *drive-by learners* who simply drop in to satisfy their curiosity and *antagonistic learners* who participate in order to highlight the faults of a model they are opposed to. Since MOOCs are still in a period of rapid development we should only compare them with each other rather than burdening them with comparisons to for-credit HE courses.

> "One last plea – MOOCs are still a new kid on the block. Let them make mistakes, let them be experimental, let people play and explore in this space without tying it down with the types of quality overhead we already have in formal education."

Julius Kvissberg, a student at Lund University in Sweden, offered a student perspective by urging universities to involve students in the MOOC development process from the start. Since few MOOCs offer credits there should be greater scope for student involvement and this involvement will be one of the key quality factors as MOOCs mature. It is still too early to make judgements on the effect of MOOCs in education but he welcomed the opportunity for students to widen their perspectives by taking courses from universities in other countries.

Paul Stacey, senior project manager at Creative Commons, focused on the pedagogical aspects of MOOC development. Many MOOCs are simply adapting classroom-based didactic learning pedagogies to an online environment and not fully exploiting the potential for truly open collaboration and peer learning. He advocates MOOCs being as open as possible, using OER and user-generated content, focusing on peer-to-peer pedagogies, using social learning and leveraging massive participation by getting students to actively contribute to the course development.

> "Learning happens through relationships. The best online pedagogies are those that use the open web and relationship to mine veins of knowledge, expertise, and connections between students, between students and the instructor, and between students and others on the open web"

Wayne Mackintosh, founder of WikiEducator and director of the OER Foundation, looked at MOOC quality through the lense of the OER university partnership of which he is one of the leading figures. A *pedagogy of discovery* is being developed to focus on students gathering relevant content to support their learning rather than institutions offering pre-selected course content. This personalisation of learning can be best developed by a wide range of micro Open Online Courses (mOOCs) which allow students to choose their own learning paths but which can also lead to formal credentials through validation (ie. the role of the OERu partnership). MOOCs and related forms of open education propose an unbundled model for education based on individual choice, flexibility (opt in / opt out) and peer learning but always with the option of converting skills gained in open learning environments into credible credentials.

Gilly Salmon, digital learning innovator and Pro Vice-Chancellor of Learning Transformations at Swinburne University of Technology, Melbourne, posed the question of whether we should view the success of MOOCs on the grounds of how successfully they create positive and lasting change to the higher education system of the future; their value as disruptors. If universities are supertankers that are slow to manoeuvre then MOOCs could be seen as tugboats that can help the supertankers turn in time.

> "What might the qualities of this disruption be? Well, for me the constructive ones are pointing to the fuller development and deployment of open education resources, of the appreciation of the potential and reach for huge scale learning, addressing and solving challenges of very large numbers of participants, global reach, accessibility and participation and the enormous advantages of flexible, entirely digital learning provision. There's also something about learners and participants determining their own choices and pathways, and following their own rather than the providers' motivations, outcomes and determinants."

Yves Epelboin, member of the advisory committee for the French MOOC initiative (FUN), discussed the challenges for European universities entering into the MOOC arena and the need to build national and transnational consortia to provide a quality framework for MOOCs and an alternative to the US-based major MOOC consortia. MOOCs represent a break with traditional models of education, both campus-based and online and require new criteria for quality assurance. MOOC development in Europe lags behind that of the USA but there are strong signs that the focus in Europe will be much more on developing new pedagogies than focusing on content delivery.

RESULTS: QUALITY CONSIDERATIONS FOR MOOCS

Sometimes it might seem paradoxical to talk about quality development for open learning cultures, as we find that these cultures are frequently dominated by disruptive, autonomous and seemingly non-planable processes on the one hand side and quality development is often understood as *checking* and controlling through externally imposed standards on the other hand. However, quality can also be understood in a development-oriented way, which means enabling learners to develop themselves in their own learning processes and consequently produce better results as far as quality is concerned. In this view, methods of self-evaluation, reflection and peer-evaluation are seen as more important. This kind of quality methodology does not have anything to do with normative, universally-valid standards, but aims at improving the quality of the learning processes.

Taking a look at the relevant literature on quality in the educational sector, it quickly becomes clear that quality can definitely be more than a "check by means of standards". Harvey & Green (2000:36)[36] view not *one* but *five* basically different pedagogical ways of understanding quality at work in the educational sector. They conclude that quality is a philosophical ter. Similarly, Posch & Altrichter

(1997: 28) point at quality being a relative term which has to be more closely defined with regard to the values of different pressure groups. It follows that they talk about quality as a relative term, which has to be organized as a negotiation process in the relation between stakeholders (ibid, similarly also: Harvey & Green, 2000: 17). Heid emphasizes that quality is not a characteristic of an educational process that can be observed generally. Rather, it is the result of an assessment (Heid, 2000: 41). Quality in education can thus not be understood as an overall classification of good schools, programs or learning scenarios, but needs to be seen as a result of clear negotiation processes of value systems, requirements and

[36] First of all, Harvey and Green call quality an exception (1). That means quality itself is an exception in that it goes beyond the highest standards or reaches at least prescribed minimal standards. In contrast, quality can be interpreted as (2) perfection or consistency. This approach focuses on processes which can be achieved when striving for quality and expresses itself in lack of errors as well as effectiveness and efficiency. Different than the two first approaches, (3) refers to quality as purposeful, which means that it related to the underlying purpose of a product or service. A fourth approach (4) then focuses on the relation between quality and market/ price: the adequate countervalue. Finally, quality is understood as being transformative (5). This understanding focuses mainly on services and generally questions product-oriented quality assessment in the educational sector.

results (cf. also Ditton, 2000: 73). Posch & Altrichter (1997: 130) conclude that it is impossible to achieve more than clearly defining the criteria which every stakeholder uses in his quality assessments and take into consideration those competing points of view when making quality assessments."

For the quality of educational processes this means that we need to ask *which* stakeholders having *which* interests take part in the educational scenario in *which* way. In this regard, an obvious difference can be seen between the broadcast-oriented understanding inherent in technology enhanced learning 1.0 and the rather participation-oriented understanding predominant in technology enhanced learning 2.0. E-learning 2.0 not only centers the learners as receivers but also as active actors which take part in the definition and evaluation of the learning resources' and processes' quality. While in technology enhanced learning 1.0 learning material is more often than not compiled or designed, as well as assessed by experts and learning platforms are quality-assured by institutions and experts, in e-learning 2.0 learners compile their own Personal Learning Environments (PLE), create their own content and learn together with and from others. Learning material is simultaneously assessed through the peers.

The MOOCs and the MOOC Quality Project shows that in open education scenarios, the learner has an important role as active constructor of learning materials (co-creator), PLEs and is the initiator of his or her own learning processes. Interestingly, this is a characteristic which is often felt to be a barrier for integrating e-learning 2.0 into formal educational processes. This is because the competition of learners and teachers and/ or other institutional actors during quality assessment seems to be insurmountable and only resolvable through a loss of power for the institution. From the expert blog posts key quality areas were identified for further discussion

1. **Massive (and often unspecified) target group**. Although it is impossible to predict who will participate in a MOOC some general assumptions must be made as to their objectives and levels of participation. This demands developing a variety of content, assignments, forms and levels of interaction and assessment methods to provide a range of possible learning paths. Flexibility and diversity are key concepts in MOOC design. There needs to be a greater understanding that not all participants are actively involved in group work and discussion and that such an approach does not necessarily signify passivity. The pejorative term "lurker" should be removed from the MOOC discourse. One suggestion was to instead use the term "observer" which has no negative connotations and reflects how many learners prefer to approach a new and unfamiliar form of learning.
2. **Mixing formal and informal learners**. Many MOOCs involve both registered students studying for formal credits and informal learners studying purely for self development. Here it is important to define different levels of success and provide awards appropriate to the different learners (badges and/or credits). It may be appropriate to offer certain activities or assignments specifically for the credit students whereas other activities may be blended groups (credit/non-credit).
3. **Learning across contexts**. MOOC providers need to be prepared to adapt their model to the learners' needs and evaluate as the course progresses. The concept of crowd-to-crowd learning was introduced to reflect the fact that a MOOC comprises several large networks of learners with varying focus areas but which influence each other and drive the course forward. The MOOC providers should allow these networks to modify the course rules to a certain extent. Quality assurance may therefore be described as crowd-driven.

4. **Declaration of contents (pre-course information)**. Transparency is an essential feature of MOOCs and students must be able to see a clear declaration of what sort of course they are signing up for. The structure, expected workload, study methods, learning outcomes, pedagogy, use of ICT, degree of self-organisation, assessment methods and criteria for certification must be fully explained on the basis of easily understandable and standardised criteria. One interesting suggestion was to develop an educational equivalent of Trip Advisor letting students review and recommend courses.
5. **Peer to peer pedagogy**. Peer learning, peer review and peer assessment are essential features of MOOCs since the sheer scale precludes a traditional teacher -based approach. This requires considerable support since learners accustomed to traditional classroom education will find MOOCs a daunting experience and the risk of dropping out is therefore high. Scaffolding is required to assist such learners by asking more experienced participants to be mentors as well as providing online support in the form of FAQ pages, how-to videos and forums.
6. **MOOCs supporting choice based learning**. As MOOCs are chosen by individuals' interest and demands, the term choice-based learning was coined. However having a wide choice of courses does not mean that the learner is more likely to complete the chosen course and providers need to understand what types of "investment" determines whether a learner will stay or leave. Creating a sense of belonging to a community and a shared responsibility for the progression of the course are important quality indicators. MOOC providers should be open about requirements of self-organisation and provide scaffolding for those who lack that self-organisation

The recommendations from the MOOC Quality Project blogposts proved to be relevant to the participants in the MOOCathon, representing a wide variety of countries and professions. The MOOCathon day in some ways resembled a real MOOC with a wide diversity of experiences and expectations. Some participants were advanced MOOC learners whereas some were new in the field. We didn't experience any serious drop-out rates but the group was rather fluid with some participants staying for all the three sessions whereas others came and went during the day.

POSTSCRIPTUM

MOOCs and open education require different quality indicators than those traditionally used in higher education. The European Commission's (EC) new *Opening up education*[37] initiative states that quality issues must be rethought and revalued. The EC has set out seven recommendations which institutions and authorities need to focus on (EC 2013):

- reviewing their organisational strategies
- exploiting the potential of Massive Open Online Courses (MOOCs)
- stimulating innovative learning practices such as blended learning
- equipping teachers with high digital competences
- equipping learners with digital skills
- thinking about how to validate and recognise learner's achievements in online education
- making high quality Open Educational Resources (OER) visible and accessible

Since the MOOC Quality Project there have been a number of major European initiatives focusing on quality assurance in MOOCs. The *Openuped* [38] initiative founded by the European Association of Distance Teaching Universities (EADTU) in partnership with a growing number of European universities

[37] http://europa.eu/rapid/press-release_IP-13-859_en.htm [cited 30 June 2014]

[38] http://www.openuped.eu/ [cited 30 June 2014]

offers a quality framework for MOOCs based on eight key principles:

- Openness to learners
- Digital openness
- Learner-centred approach
- Independent learning
- Media-supported interaction
- Recognition options
- Quality focus
- Spectrum of diversity

Another initiative since the MOOC Quality Project was the European MOOCs Stakeholders Summit[39] held in February 2014 and organised by the École Polytechnique Fédérale de Lausanne (EPFL) and P.A.U. Education. The Summit gathered European MOOC actors, from policy makers to practitioners to researchers. The goal of the summit was to develop synergies among European universities around themes such as student assessment, MOOC accreditation, platform interoperability and joint research initiatives. The conference included four tracks: Policy, Experience, Research and Business. The discussions at the summit very much also focused on the question of how MOOCs are actually defined, and how they can be described, who is using them and with which usage patterns (Cress & Delgado Kloos 2014).

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The OpenupEd quality label: Benchmarks for MOOCs

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ABSTRACT

In this paper we report on the development of the OpenupEd Quality Label, a self-assessment and review quality assurance process for the new European OpenupEd portal (www.openuped.eu) for MOOCs (massive open online courses). This process is focused on benchmark statements that seek to capture good practice, both at the level of the institution and at the level of individual courses. The benchmark statements for MOOCs are derived from benchmarks produced by the E xcellence e learning quality projects (E-xcellencelabel.eadtu.eu/). A process of self-assessment and review is intended to encourage quality enhancement, captured in an action plan. We suggest that a quality label for MOOCs will benefit all MOOC stakeholders.

KEYWORDS *MOOC, e learning, quality assurance*

INTRODUCTION

This paper introduces the OpenupEd Quality Label, a quality assurance process for MOOCs that has emerged from the quality assurance of e-learning in distance education. Before introducing the details of this process, we briefly review the history of MOOCs, positioning this in relation to open and distance education, and note concerns about quality in MOOCs. We propose that existing e-learning quality approaches are an appropriate starting point for quality assurance of MOOCs.

Background

The rise of MOOCs has been recent and rapid (for an overview, see Daniel, 2012; Yuan and Powell, 2013; Haggard, 2013). The term 'massive open online course' (MOOC) was used by Dave Cormier in 2008 to describe a course 'Constructivism and Connective Knowledge' run by George Siemens and Stephen Downes (Cormier, 2008). This course was delivered to 25 students for credit at the University of Manitoba who were joined by 2,300 others who participated without fee and without gaining credit (Daniel, 2012). In 2011, Sebastian Thrun and colleagues gave open access to their Stanford course 'Introduction to Artificial Intelligence' and attracted 160,000 learners (Yuan and Powell, 2013). The publicity surrounding these and other early MOOCs led to an explosion of activity in 2012 and 2013 which resulted in the formation of a number of platforms and providers for higher education such as Coursera (https://www.coursera.org/), edX (https://www.edx.org/), Eliademy (https://eliademy.com/), FutureLearn (https://www.futurelearn.com/), Open2Study (https://www.open2study.com/) and Udacity (https://www.udacity.com/). These can certainly claim to provide courses on a massive scale: by early 2014, Coursera had 22 million enrolments on 571 courses, with 240,000 enrolments on the most popular course (Coursera, 2014).

However, it is also clear that many different kinds of course are labelled as MOOCs. An early distinction was made on the basis of pedagogy. Siemens (2012) used the terms cMOOC and xMOOC to contrast two forms of pedagogy. He labelled the early courses, rooted in principles of connectivist learning that emphasise creation, creativity, autonomy and social networked learning, as cMOOCs. The courses that had begun to appear on platforms such as Coursera and edX were based on a transmission model of teaching and learning; Siemens suggested the label xMOOCs for these. Other authors have since given other taxonomies and classifications. Clark (2013) identified eight types of MOOC based on different pedagogies. Conole (2013) highlighted a round dozen dimensions on which a course could vary, for example its scale of participation, use of multimedia, and amount of communication. Mulder and Jannsen (2013) take a broader view still of open education by suggesting a model with five dimensions: open educational resources, open learning services, open teaching efforts, open to learner needs, and open to employability and capabilities. MOOCs as currently understood may inhabit only part of this space.

Conversely, there are other courses that are not claimed as MOOCs but which are massive, open and online; in particular there is a history of open distance learning (ODL) courses which predate the rise of MOOCs. The 'open' in the context of MOOCs is normally interpreted to mean open access, and specifically free in the sense of 'gratis'. But it also has a sense shared with the ODL community, and specifically in the Open University UK and similar institutions. Openness in that context means that courses do not require formal qualifications for enrolment; entry level courses are designed to be widely accessible to learners with limited prior knowledge. There are other meanings of 'open' in education, particularly open licencing of open educational resources (OER) that can be reused, repurposed and redistributed, and the still broader conception of open educational practices given in the Cape Town Open Education Declaration (2007).

The 'massive' nature of MOOCs has similarities and differences to the massiveness of ODL. The dizzying numbers of students enrolled in MOOCs may have made headlines but numbers in ODL may also be very large, certainly compared to many campus-based universities. To give an example, Weller and Robinson (2001) describe the introduction of an early online course *You, your computer and the net* at the UK Open University (OU) with 12,000 students. However, what is characteristic of MOOCs is not so much their absolute size but a design which is scale-independent. At a practical level, this means being able to offer a course with no restriction on student numbers: the students should be able to learn successfully whether 50 or 50,000 students enrol. The traditional OU model of independent learning from high-quality materials can easily handle such different scales, whether using print delivery or online. However, as Weller and Robinson (2001) relate, the introduction of a new course of 12,000 students, while maintaining the OU model of supported open learning with a personal tutor assigned to a group of around 20 students, was more challenging. Some 580 new tutors had to be recruited and trained in a short timescale; additional staff posts were required to support tutors and maintain the quality assurance processes applied to teaching and assessment. By contrast, MOOCs have sought models of teaching and learning that scale more gracefully. Typically this means forgoing support and assessment from a personal tutor and instead relying on peer support through forums and some combination of automated marking and peer assessment, with limited input from teaching and associate staff. While these approaches can address the problems of scale with regard to resources and costs, it must still be asked whether the quality of the learning experience remains unchanged.

Questions about the quality of the MOOC experience were beginning to be widely asked in 2013, for example in reports by Yuan and Powell (2013) and Haggard (2013). (By contrast, open and distance learning can deliver a quality learning experience: the UK Open University has consistently ranked in the top five universities for student satisfaction in the National Student Survey.) The concern over quality in MOOCs was coupled with a concern over high drop-out rates. The conspicuous success of MOOCs in enrolling massive numbers of students was tempered by low completion rates. A report from the University of Edinburgh (2013) on their first six MOOCs recorded that 12% of enrolled students completed. In more recent work, Jordan (2014) found that the majority of 279 MOOCs analysed had completion rates of less than 10%; the median completion rate was only 6.5%. Low completion rates might indicate that the open nature of MOOCs allows students to enrol on courses for which they are ill-prepared; however, many MOOC participants appear well-qualified, if not over-qualified. Thrun (2013) reported on a San Jose State University pilot project to deliver for-credit MOOCs. The target audience was 'students who are presently under-served and left out of higher education' and the courses were pitched at college entry level. However, 53% of the student body had post-secondary qualifications, including 20% with Masters or PhD. A presentation by Daphne Koller included figures suggesting that 80% of Coursera students already had bachelors, masters or doctoral qualifications (Koller and Ng, 2013); somewhat ironically, the presentation was titled 'Education for everyone'.

Both ODL and MOOCs attract students who might otherwise not be able to attend traditional on-campus instruction because of work, family and other obligations. MOOCs may attract participants with widely different cultures, motives and intentions, and the expectations and behaviour of MOOC students may therefore be quite different to fee-paying students studying for qualifications. There is after all a very low commitment required to enrol on a MOOC – there are typically no fees to pay and no books to buy – and correspondingly little is lost by dropping out of study. It may be that some students are achieving their goals by simply 'browsing' in a MOOC without participating in assessments (Koller et al, 2013). Perhaps, therefore, low completion rates simply go with the MOOC territory.

On the other hand, maybe the MOOC territory is not that distinctive after all. Clow (2013) analyses the 'funnel of participation' on a MOOC and two other sites (www.ispot.org.uk and www.cloudworks.ac.uk) that support informal learning communities but are not structured as courses. He finds a similar pattern of attrition. This suggests that, although MOOCs are structured as non-formal courses, they are no more successful at engaging students than are informal learning communities. (The terms formal, non-formal and informal learning here are used in the sense of the ISCED 2011 classification (UNESCO, 2012).

Does quality in MOOCs matter?

We believe that teachers in higher education should be concerned to give students a good quality learning experience, whether students are enrolled on a fee-paying credit-bearing course or a MOOC. Particularly if we think that the aim of MOOCs is to open up access to higher education, a good quality experience is important. Given that starting point, the low completion rates discussed above should be a cause for concern: how can MOOC producers claim a good quality learning experience if students are failing to complete? Others agree: for example, Anthony McClaran, Chief Executive of the UK Quality Assurance Agency for Higher Education (QAA), said in July 2013:

> "Now at the outset I should say that the QAA does not have a policy or an agency position on MOOCs, at least not yet. What we do have is a frame of reference. In particular the UK Quality Code for Higher Education, our role in external review and quality assurance and in student engagement. Factors which apply to all learning opportunities regardless of location, mode of study, academic subject; MOOCs are no exception to that." (McClaran, 2013)

It is for these reasons that the MOOC community should engage with the issue of quality assurance and quality enhancement. For many staff in conventional campus universities used to teaching relatively small classes in a largely face-to-face setting, creating e-learning courses for very large numbers of students is a radical departure. This suggests that attention should focus on e-learning quality and its enhancement. Kear, Williams and Rosewell (2014) suggest that quality assurance procedures established for campus based universities do not necessarily fit well with e-learning and that specific resources and processes for quality assurance of e-learning are needed. This remains the case even though e-learning, particularly in the guise of blended learning, is becoming more mainstream in higher education (HE).

Ehlers, Ossiannilsson and Creelman (2013) posed a question at the start of the EFQUEL MOOC project (http://mooc.efquel.org): 'Can the quality of MOOCs be assessed in the same way as any defined university course with traditional degree awarding processes?'

Weller (2013a) argues that, since the aims and intentions of both student and institution differ in the context of MOOCs compared to formal education, conventional quality measures are inappropriate; for example, if many students don't have course completion as a major goal, it should not be used as a quality measure. But this is to position a MOOC as an OER open to informal learners, and seems to miss the distinctive feature that a MOOC is, by definition, a course, even if non-formal education rather than formal. Further, current higher education MOOCs are usually closely aligned to more conventional university courses. MOOCs are usually branded by an HE institution, and so the institution takes on a reputational risk unless quality is maintained. MOOCs are authored and taught by HE staff. Material is often derived from existing credit-bearing courses, or is positioned as providing an access route to credit-bearing curriculum. In practice, therefore, it is often the case that MOOCs stand in some relation to existing institutional QA processes. For example, there should be a course approval process, although this may be 'light-touch', given that MOOCs typically do not bear credit and are not part of a designed curriculum and there is accordingly less need for approval for accreditation purposes.

The simple separation of MOOC as non-formal learning from formal, credit-bearing courses is in any case beginning to break down. For example, by November 2013 the OpenupEd partnership (http://www.openuped.eu/) offered 174 MOOCs of which over 100 had some opportunity for recognition as ECTS credits. In some cases, such as UNED Abierta, a freemium model is used where the same MOOC can be certified at three levels: badges earned for completion of specific activities, a credential for completion of the majority of activities and a final online test, and full certificate with ECTS credit obtained after a proctored test (Read and Rodrigo, 2014).

So on balance, while there may be reasons for thinking that MOOCs and their students are different from traditional university courses, we believe that there are also good reasons for suggesting that the answer to Ehlers, Ossianilsson and Creelman's question should be 'yes, we should assess quality in the same way'. Yes, because MOOCs are produced by the same staff in the same institutions as conventional courses and are often extracts from or reversioning of existing course material. Yes, because MOOCs should have perceived value and increasingly can be recognised for credit. Yes, because students deserve a good quality experience if the intention of MOOCs is to open up higher education, either for an initial experience of higher education or for lifelong learning. Yes, because MOOCs are a form of e-learning and the HE sector's understanding of e-learning quality is still developing and cannot be taken for granted; a culture of quality enhancement is needed.

Quality in e-learning

If MOOCs require a quality assurance process, that process should be one that is tailored to e-learning. The OpenupEd Quality Label described below is derived from the E-xcellence label (http://E-xcellencelabel.eadtu.eu/) which applies to e-learning and blended learning. There are other existing e-learning quality approaches although intended for use in formal, credit-bearing education. Butcher and Wilson-Strydom (2013) provide a useful overview and guide to the issues. Some criteria-based approaches to e-learning that are not dissimilar to E-xcellence should be mentioned. The European Foundation for Quality in e-learning (EFQUEL) operates the UNIQUe certification (http://unique.efquel.org/). This takes a broadly similar approach to E-xcellence with self-evaluation, external review and improvement plan; there are currently 71 criteria and compliance is scored numerically (EFQUEL, 2011). The Quality Matters Program (https://www.qualitymatters.org/) reviews HE courses by scoring against a rubric of 41 criteria. The Sloan Consortium (Sloan Consortium, n.d.) offer a scorecard of 70 criteria. Peres, Lima and Lima (2014) recently compared six quality frameworks, including E-xcellence, UNIQUe and Quality Matters, and produced a lengthy narrative description that combines elements from all of these with additional elements derived from their own experience; however, their focus was specifically on blended learning.

Read and Rodrigo (2014) report on the quality model for UNED MOOCs. Although they later considered a draft version of the OpenupEd benchmarks, their MOOC quality process began earlier with approval and planning of a MOOC programme in 2012. UNED is a mature distance teaching university with established online programmes and so was able to draw on existing procedures and practices. High-level guidelines on course design were provided to course creators and courses were reviewed against a number of major aspects: topic, reuse of existing content, overall duration, course structure, instructional design including assessment, social learning, and teaching support. This pre-launch review was complemented by evaluation of the course presentation, using quantitative data and qualitative feedback gathered in course forums.

The remainder of this paper outlines the OpenupEd Quality Label, an approach to quality assurance for MOOCs that is derived from E-xcellence, an established approach to quality assurance of e-learning that has roots

in the experience of open and distance learning institutions.

THE OPENUPED INITIATIVE

The OpenupEd initiative was launched in April 2013 by the European Association of Distance Teaching Universities (EADTU) with support from the European Commission. OpenupEd (www.openuped.eu) is an open, non-profit partnership for MOOCs.

OpenupEd promises to bring some distinctive features to the MOOC landscape. The launch partners (see http://openuped.eu/partners/current-partners) will apply their extensive experience of open and distance learning to MOOCs. In addition, OpenupEd partners have a commitment to opening up education to the benefit both of learners and of wider society, while reflecting "European values such as equity, quality and diversity" (Commissioner Vassiliou in European Commission, 2013). The vision is to reach out to all those learners who wish to take part in online higher education in a way that meets their needs and accommodates their situation.

OpenupEd positions MOOCs as part of open education. The MOOCs offered by OpenupEd partners are intended to remove all unnecessary barriers to learning and provide students with a reasonable chance of success in education. This implies 'openness' in the sense not only of no financial cost, but also open accessibility, open licensing policy, freedom of place, pace and time of study, open entry, and open pedagogy (Weller, 2013b).

To ensure that OpenupEd courses meet this vision, partners are asked to endorse the eight distinctive features described below.

Openness to learners: This captures aspects such as: open entry (no formal admission requirements), freedom to study at time, place and pace of choice, and flexible pathways. In a broader perspective this feature stresses the importance of being open to learners' needs and providing for a wide variety of lifelong learners.

Digital openness: Courses should be freely available online but in addition apply open licensing so that material and data can be reused, remixed, reworked and redistributed (e.g. using CC-BY-SA or similar).

Learner-centred approach: Courses should aid students to construct their own learning from a rich environment, and to share and communicate it with others; they should not simply focus on the transmission of content knowledge to the student.

Independent learning: Courses should provide high quality materials to enable an independent learner to progress through self-study.

Media-supported interaction: Course materials should make best use of online affordances (interactivity, communication, collaboration) as well as rich media (video and audio) to engage students with their learning.

Recognition options: Successful course completion should be recognised as indicating worthwhile educational achievement.

Quality focus: There should be a consistent focus on quality in the production and presentation of a course.

Spectrum of diversity: Courses should be inclusive and accessible to the wide diversity of citizens; they should allow a spectrum of approaches and contexts, accounting for a variety of language, culture, setting, pedagogics and technologies.

A distinctive aspect of OpenupEd is the promise of a quality educational experience that can bridge between informal and formal learning and provide recognition for the student's achievement. This promise is to be encapsulated in a 'quality label'.

THE OPENUPED QUALITY LABEL

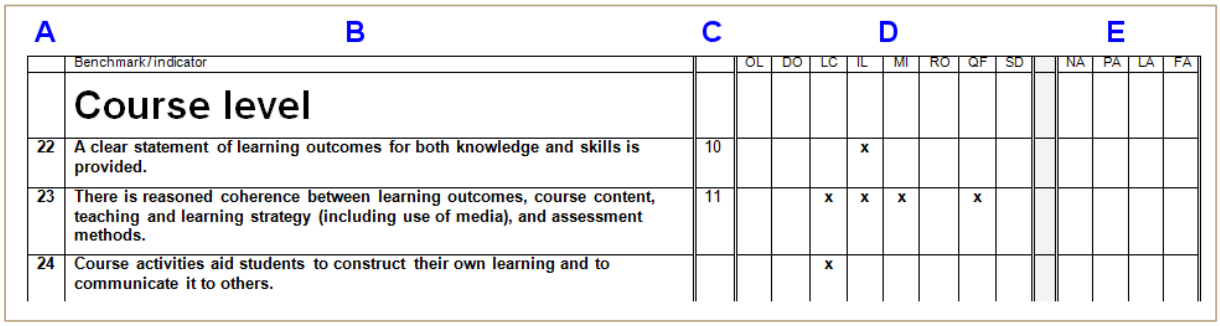
The OpenupEd Quality Label is intended to encourage quality enhancement for MOOCs and their providers. It was derived from the

E-xcellence label (http://E-xcellencelabel.eadtu.eu/) which provides a methodology for assessing the quality of e-learning in higher education (HE). E-xcellence has evolved over a series of projects commencing in 2005 (Williams, Kear, Rosewell and Ferreira, 2011). E-xcellence now provides a series of tools, including a manual (Williams, Kear and Rosewell, 2012) and interactive 'quick scan' self-assessment, that support a review process based around a number of benchmark statements. There are 35 benchmark statements which are grouped into six areas: Strategic Management, Curriculum Design, Course Design, Course Delivery, Staff Support and Student Support. The manual provides supporting text and more detailed indicators of good practice.

For the OpenupEd Quality Label, we drafted a revised set of benchmarks and a self-assessment and review process better suited to MOOCs. These were first presented at a master class at the 2013 EADTU conference (http://conference.eadtu.eu/). This draft was updated using feedback gathered at this event, and then made available for further review, with comment invited from OpenupEd partners and E-xcellence assessors. The final version was published in January 2014 (http://openuped.eu/mooc-features/openuped-label).

The resulting benchmarks are listed in Appendix 1 below. The benchmarks are divided into two major groups, one that applies at the institutional level and another that applies to individual courses. As described below, each MOOC should be considered against the course-level benchmarks, but the institutional-level benchmarks are intended only for periodic review. The institutional-level benchmarks are grouped into the same six areas as the E-xcellence benchmarks.

An outline of the OpenupEd Quality Label process is as follows. OpenupEd partners are expected to be higher education institutions (HEI) that meet national requirements for quality assurance and accreditation. The HEI should have an internal procedure to approve a MOOC; this is expected to be a 'light-touch' version of the institutional quality assurance systems that apply to their formal courses. New partners will obtain the OpenupEd Quality Label by a self-assessment and review process that will consider benchmarks both at institutional and course level (for two courses initially). The HEI should endorse the eight distinctive OpenupEd features listed above; in particular, every MOOC must demonstrate the features 'openness to learners' and 'digital openness'. The OpenupEd Quality Label must be renewed periodically. Between institutional reviews, additional MOOCs will be reviewed at course level only. The institution is expected to evaluate and monitor each MOOC in presentation, providing quantitative data including participation, completion and student satisfaction, and a qualitative assessment of equity, quality, and diversity. The OpenupEd partnership will collaborate to share standardised evaluation data.



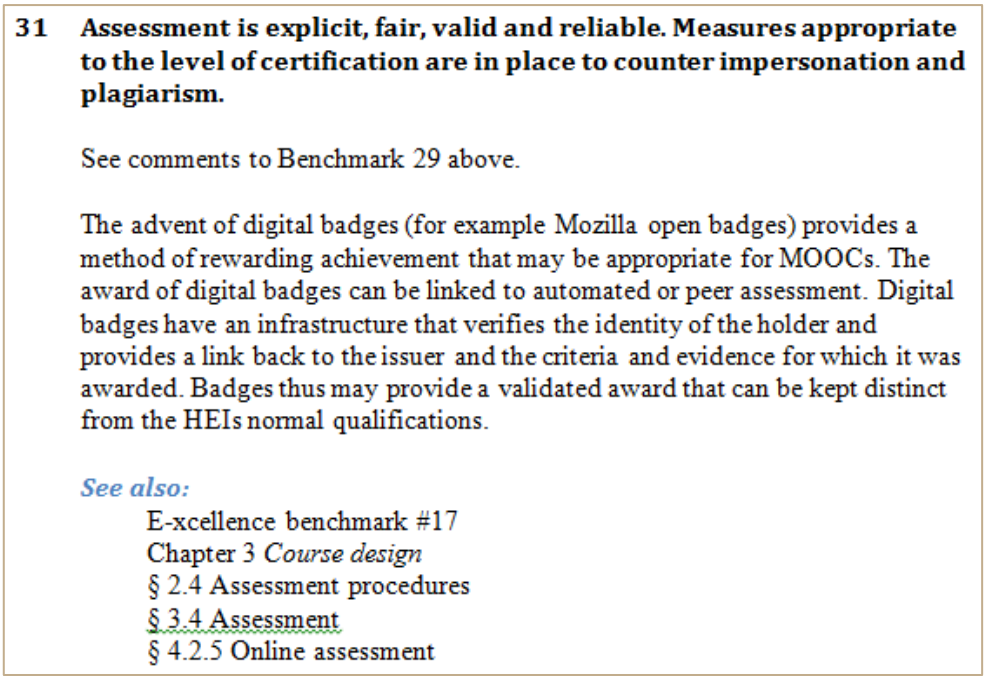
A	B	C	D								E			
	Benchmark/indicator		OL	DO	LC	IL	MI	RO	QF	SD	NA	PA	LA	FA
	Course level													
22	A clear statement of learning outcomes for both knowledge and skills is provided.	10				x								
23	There is reasoned coherence between learning outcomes, course content, teaching and learning strategy (including use of media), and assessment methods.	11			x	x	x		x					
24	Course activities aid students to construct their own learning and to communicate it to others.				x									

Figure 1 Part of the quick scan checklist.
Key: A – benchmark number; B – Benchmark statement; C – cross-reference to E-xcellence manual; D – mapping to OpenupEd features; E – grid for recording benchmark achievement

The self-assessment and review are focussed around the benchmarks given in Appendix 1. A 'quick scan' checklist is provided (**Error! Reference source not found.**) which lists the benchmarks with an accompanying grid to record two aspects. First, an overall judgement can be made on the extent to which the benchmark is achieved (on a four-point scale: not achieved, partially achieved, largely achieved, or fully achieved). Secondly, a mapping can be made between each benchmark and the eight OpenupEd distinctive features; an initial mapping is provided but this can be adapted where necessary. For example, in Figure 1 benchmark #22 'A clear statement of learning outcomes for both knowledge and skills is provided' is mapped to the distinctive feature 'IL – Independent learning' to suggest that evidence gathered in relation to the benchmark is also likely to provide evidence of a course suited to independent learning.

The quick scan can be used to give an initial picture of areas of strength and weakness. It can also highlight: where benchmarks may not be fully appropriate; where they may fail to capture good practice in a particular HEI or MOOC; and where additional detailed indicators might be helpful. The quick scan should then be fleshed out by a more detailed self-assessment process, ideally including different stakeholders such as academics, managers, course designers and students. This should gather evidence for each benchmark, including the extent to which it supports the distinctive OpenupEd features. A plan detailing improvement actions is then prepared. The documented self-assessment and the improvement plan form the basis of a final review and discussion with external assessors, who then prepare a final report including their recommendation for the award of the OpenupEd Quality Label.

A number of documents support this process, including templates for the quick scan checklist, evidence gathering and action plan. Assessor's notes are provided that cross-reference the OpenupEd benchmarks to additional indicators and background material in the E-xcellence manual (Williams, Kear and Rosewell, 2012), with supplementary material provided for MOOC-specific aspects where necessary (**Figure**). It is anticipated that this documentation will be extended in the light of experience.



31 Assessment is explicit, fair, valid and reliable. Measures appropriate to the level of certification are in place to counter impersonation and plagiarism.

See comments to Benchmark 29 above.

The advent of digital badges (for example Mozilla open badges) provides a method of rewarding achievement that may be appropriate for MOOCs. The award of digital badges can be linked to automated or peer assessment. Digital badges have an infrastructure that verifies the identity of the holder and provides a link back to the issuer and the criteria and evidence for which it was awarded. Badges thus may provide a validated award that can be kept distinct from the HEIs normal qualifications.

See also:

E-xcellence benchmark #17
Chapter 3 *Course design*
§ 2.4 Assessment procedures
§ 3.4 Assessment
§ 4.2.5 Online assessment

Figure 2 Example additional assessor's note, with references to the E-xcellence manual

There is considerable diversity in institutional approaches to opening up education by the use of MOOCs, and the OpenupEd label should embrace this. It is not therefore expected that every benchmark will be achieved by every institution. In our approach, benchmarking is intended as an improvement tool; a process of comparing the institutional performance with best practices as currently understood in the field of MOOCs and open education. This process guides institutions to look critically at their own position and practices, and leads to identification of weaknesses and strengths in comparison to other universities. Institutions that use the OpenupEd Quality Label should be guided towards improving their performance in e-learning and in opening up education by the use of MOOCs.

The initial MOOCs offered through the OpenupEd portal have been courses from EADTU members that had undergone institutional quality procedures that were judged sufficient by the EADTU board to meet the OpenupEd label without following the process outlined above. Evaluation of the quality label process will follow as MOOCs are subject to the full process.

CONCLUSION

The OpenupEd Quality Label is offered as a way of ensuring that MOOCs offer a good quality educational experience. It does this by adopting a quality enhancement approach, based on initial self-assessment against benchmark indicators, followed by external review leading to an improvement action plan. This process is designed to complement both an institutional course approval process, and ongoing evaluation and monitoring of courses in presentation. The overall approach and the benchmarks are derived from the E-xcellence e-learning quality projects, emphasising the importance of e-learning features. The OpenupEd Quality Label process is a lighter-touch version of E-xcellence since it separates institutional level benchmarks which need be checked only periodically from course level benchmarks that can be applied to each course. The benchmarks have also been adapted to be more appropriate to the MOOC context.

The OpenupEd label should benefit all stakeholders in MOOCs. Students can be reassured about the experience they are committing to. Employers can recognise the content and skills demonstrated by a MOOC certificate. MOOC authors can achieve recognition for their input. Institutions can protect their brand reputation. Funders can be reassured that products are worthwhile. Quality agencies, who work on behalf of all the above parties, may find their task eased.

ACKNOWLEDGEMENTS

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APPENDIX: OPENUPED QUALITY BENCHMARKS

Institutional level

Strategic management

1. The institution has a MOOC strategy that relates to its overarching strategies for e-learning, open education and open licensing.
2. Research and monitoring of developments in education and technology inform the design of MOOCs. There is an organisational framework to foster this.
3. The institution has a strategy for the appropriate resourcing of MOOC development. It has a business model, appropriate to the institutional mission, that addresses the sustainability of MOOCs.
4. The institution has a service relationship to MOOC participants that addresses ethical and legal dimensions including accessibility and data protection.
5. Collaborative and partnership activities have clearly defined roles and responsibilities and operational agreements exist where appropriate. Policies exist to cover issues such as intellectual property rights and open licensing.
6. The institution has a quality policy that relates to national frameworks, and the MOOC offering is related to that policy.

Curriculum design

7. The institution makes explicit the relationship between its MOOC portfolio and its mainstream curriculum.
8. The MOOC portfolio provides for the development of students' cognitive skills, key/transferrable skills, and professional/practical skills in addition to knowledge and understanding.

Course design

9. The institution provides templates or guidelines for layout and presentation of MOOCS to support consistency across the portfolio. These templates have the flexibility to accommodate a range of teaching and learning methods.
10. Course materials, including the intended learning outcomes, are regularly reviewed, up-dated and improved using feedback from stakeholders.
11. The institution specifies an open licence for MOOC components, and has a mechanism to track intellectual property rights.

Course delivery

12. The MOOC platform is reliable, secure and assures appropriate levels of privacy. Provision is made for system maintenance, monitoring and review of performance.
13. The MOOC platform provides a range of online tools which are appropriate for the educational models adopted.
14. Mechanisms exist to monitor and evaluate MOOCs using quantitative and qualitative approaches.

Staff support

15. The institution provides appropriate training for academic and support staff to develop the skills required to develop and deliver e-learning.
16. Educational research and innovation in e-learning are regarded as high status activities. There are mechanisms for the dissemination of good practice.
17. The institution provides adequate support and resources to MOOC staff and manages workloads appropriately.

Student support

18. MOOC students are provided with clear and up-to-date information about courses including aims/objectives, learning and assessment methods, workload and prerequisite knowledge. Where possible,

courses should be related to national or European academic frameworks or specifications.
19. The rights, roles and responsibilities of MOOC students and those of their institution are clearly stated.
20. The institution uses social networking to foster academic communities among MOOC students.
21. MOOC students have clear routes to academic, technical and administrative support. The level of support provided by the institution is clearly stated.

Course level

22. A clear statement of learning outcomes for both knowledge and skills is provided.
23. There is reasoned coherence between learning outcomes, course content, teaching and learning strategy (including use of media), and assessment methods.
24. Course activities aid students to construct their own learning and to communicate it to others.
25. The course content is relevant, accurate, and current.
26. Staff who write and deliver the course have the skills and experience to do so successfully.
27. Course components have an open licence and are correctly attributed. Reuse of material is supported by the appropriate choice of formats and standards.
28. Courses conform to guidelines for layout, presentation and accessibility.
29. The course contains sufficient interactivity (student-to-content or student-to-student) to encourage active engagement. The course provides learners with regular feedback through self-assessment activities, tests or peer feedback.
30. Learning outcomes are assessed using a balance of formative and summative assessment appropriate to the level of certification.
31. Assessment is explicit, fair, valid and reliable. Measures appropriate to the level of certification are in place to counter impersonation and plagiarism.
32. Course materials are reviewed, updated and improved using feedback from stakeholders.

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UNX: A Latin American Community of Knowledge for Entrepreneurship

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KEY MESSAGE

UNX is an innovative knowledge community for entrepreneurship that promotes open education and entrepreneurial skills online in Spain, Portugal and Latin America. UNX is based on the delivery of cMOOCs in Spanish and Portuguese with open and flexible content from websites, wikis, OERs and social networks, which can be scaled up to respond to demand. Learning is based on the knowledge acquired from the community and individuals working together (social and peer-to-peer learning), while the activities draw on a challenge and game-based methodology.
Unemployed young people from Europe and Latin America, students as well as entrepreneurs, investors or everyone interested in entrepreneurship can find all kind of open courses and resources in UNX.
The UNX platform is now integrated in a Personal Learning Environment (PLE) aggregator called Colmenia, and it will also be optimized for mobile devices, so that users can take all the opportunities to learn about entrepreneurship and other issues – on the bus, train, at home, etc. More than 38.000 entrepreneurs are enrolled in UNX community currently.

KEYWORDS *Community of knowledge, Peer to Peer learning, MOOC, Latin America, Entrepreneurship, Mobile Learning, and Personal Learning Environment (PLE)*

INNOQUAL Practice
The work below was submitted to the INNOQUAL call for practice-based papers, i.e. stories from the field and reflections on current practice.

INTRODUCTION: BUILDING COMMUNITIES OF KNOWLEDGE THROUGH cMOOCS; UNX EXPERIENCE

The dynamics of open and massive participation that are at the core of MOOCs produce creative, enriching and self-organized learning experiences that may well turn into an opportunity window in other economic and social contexts. The most relevant outcomes brought about by MOOCs are related with the ability to connect worlds, which have remained distant so far. In fact, MOOCs more influenced by Connectivism theory (cMOOCs) may provide an opportunity to interact with thousands of people, share knowledge and ideas, vote those considered especially relevant and distinguish the most active/prominent members of the community in a transparent and free way. If these aspects are connected to an assessment process, dynamics of learning may flourish, enabling any person to improve his/her CV, acquire new professional competences and/or help to launch an entrepreneurial initiative.

This is the rationale of UNX, the first Ibero-American Community for Digital Entrepreneurship. UNX is a learning and social environment that includes a layer with cMOOC platform and another layer for social interaction of the community of knowledge. The cMOOC platform integrates many P2P tools to enhance peer to peer learning, and the instructional and functional design of massive courses are inspired by pedagogical models based on Conectivism. The layer for the community complement the cMOOC platform, facilitating other kind of interaction between entrepreneurs, like interchange of experiences, supply and demand of services or publication of job opportunities. Both layers support a Portuguese and Spanish Speaking community of knowledge for Entrepreneurship.

UNX is an innovative open on-line community that intends to offer free and collaborative education and network to people interested in the entrepreneurship. UNX has been launched in Spain, Portugal and Latin America, in order to fight against the high rate of unemployment that especially affects young people in these countries. The lack of the digital skills and the mismatching between formal education and new capabilities demanded by the labor market is one of the main causes of young

Figure 1 Home Design of UNX

unemployment in Ibero-America. In this sense UNX try to foster employment and social inclusion with the following actions:

- Promote on-line lifelong learning, particularly the skills and competences needed for the digital economy, such as digital competences, app development, languages and new business models;
- Encourage knowledge-based entrepreneurship;
- Foster inclusion through open education of new collectives in labor market, focusing particularly on the under-employed and the unemployed people.

One example about a successfully cMOOC in UNX is the pilot course called "App Inventor and Entrepreneurship". This MOOC was coordinated by CSEV Foundation and co-designed in collaboration with MIT Center for Mobile Learning, and UNED University acting as partner of teaching . More than 15.000 students have been registered in this MOOC, and 8000 of them have interchanged their projects using the UNX P2P tools.

App Inventor is a software created by Google and developped by MIT that enables to create mobile apps without programming. App Inventor facilitates the democratization of the software development.

The people who takes part in this cMOOC, not only learn about how to create their own mobile app, but also they can upload them in the main digital markets.

HOW UNX WORKS: MAIN FEATURES

UNX uses Connectivist Massive Online Open Courses (cMOOCs) to offer training to large groups of people (unemployed, students, entrepreneurs…) combining with social tools, both Facebook and tools they have created themselves, to make it easy for users to interact with each other. With a range of open courses focused in transversal competences for entrepreneurs, and innovative online motivation and accreditation mechanisms, they plan to enhance entrepreneurial skills in the digital economy using on-line distributed, peer-to-peer learning to achieve a human-centred education supported by technology.

It is a platform to help people become active and entrepreneurial in their professional lives, not just those who are already entrepreneurs.

UNX uses an on-line badge-based approach for accreditation and certification. Badges (or insignia) are visual indications of levels of achievement, skill or knowledge, and mark exceptional involvement in a reading, discussion, group work or virtual events. The UNX platform also awards 'Karma' (social reputation) points, which measure participation in the knowledge community via the forum, Q&A and blog. This system means less reliance on course professors, which is particularly important since there are potentially thousands of students involved in a MOOC.

Once participants have their certifications and badge credentials they are ready to create their own enterprises and start-ups. They also remain in the UNX Community, establishing local communities of entrepreneurs and sharing their experiences with their peers.

Notwithstanding this, what makes UNX different from most of the rest of MOOC-based platforms is the concept of community that it advocates. In fact, UNX not only combines courses that promote entrepreneurship and self-employment with social networks, but also works with business enterprises to publish news and information regarding online and off-line job opportunities and events. New entrepreneurs can access tutoring and mentoring, information about financing, business angels, awards, grants and other opportunities. In this sense, UNX works as a melting pot where different needs, demands, skills and job offerings may be met.

In its second year, UNX has gained more than 38,000 registered members: 73% of them are following courses while 27% just take part in community activities. Regarding the learner profiles the surveys and learning analytics of the platform suggest that:

- 63% of users are male and 37% female

- Most part of them are young people looking for job opportunities . 36% (15-30 years) and 46,3%(31-45 years)
- with the majority being, workers interested in improving their job (70,33%) unemployed (12,2%) and students (11%).
- Their level of education is high; (38% are graduates and 40,24% are postgraduates.
- They come mainly from Spain, then Brazil, México and Colombia. (Spanish and Portuguese Languages enable Latinamerican internationalization)

The level of satisfaction of participants expressed in the evaluation surveys in UNX is very high. The 85% of them declare that entrepreneurial training in UNX is very useful for their careers and probably this experience will facilitate new job opportunities in the future in the digital economy.

UNX NEXT STEPS; MOOCS ON THE GO

UNX Learning on the Go strategy aims at adapting the MOOC platform and educational content to mobile devices (currently iPhone and Android). The professors teaching the MOOCs will work with app developers to design new on-line and off-line educational apps to add value to MOOC platform. Apps will use new learning-focused technologies, like geo-positioning, augmented reality, etc. These apps will improve the connection of the Community with social networks and local opportunities, increase opportunities for collaboration and enhance the sustainability of the whole open learning experience. The main goal of this strategy will be provide ubicuous access to open resources, MOOCs and opportunities for more than 38.000 entrepreneurs learning on the go in an online community.

COLMENIA THE "UMBRELLA" PLATFORM: BUILDING A COMMUNITY OF COMMUNITIES

The transition from the traditional concept of MOOC to a wider vision of it, as a tool for open online participation, requires an appropriate architecture from a technological point of view. This is the rationale of Colmenia the "umbrella" platform that is being created that, not only is the ultimate "container" of the different content from UNX but aggregates other communities of knowledge (with MOOCs, communities of practice, open badges, etc.) allocated in the different platforms (Ex: WEPRENDO www.weprendo.org), but also and more importantly, provides a Personal Learning Environment (PLE) for fostering interactions and synergies amongst the different communities of knowledge.

Thus the Colmenia platform enables:

- The creation of a community of communities very much focused on user experience. In fact, current online training is rather fragmented and institution-centered, so that the user may experience difficulties resulting in poor educational results, or, what it is more severe, high dropout rates. Several measures have been included to overcome these bottlenecks. For example, a single registration will be needed to log into the community, irrespective of the platform (UnX, or other thematic knowledge community). Furthermore, the student will be able to fully control his/her personal learning environment (Access to a personal data scorecard, recommendations, badges and certification management; Single access to the educational area; Single Access to community resources (media library/news/blog/events attended using geolocation tools/mentoring/ participation in virtual workshops & conferences/projects portfolio/call for proposals)

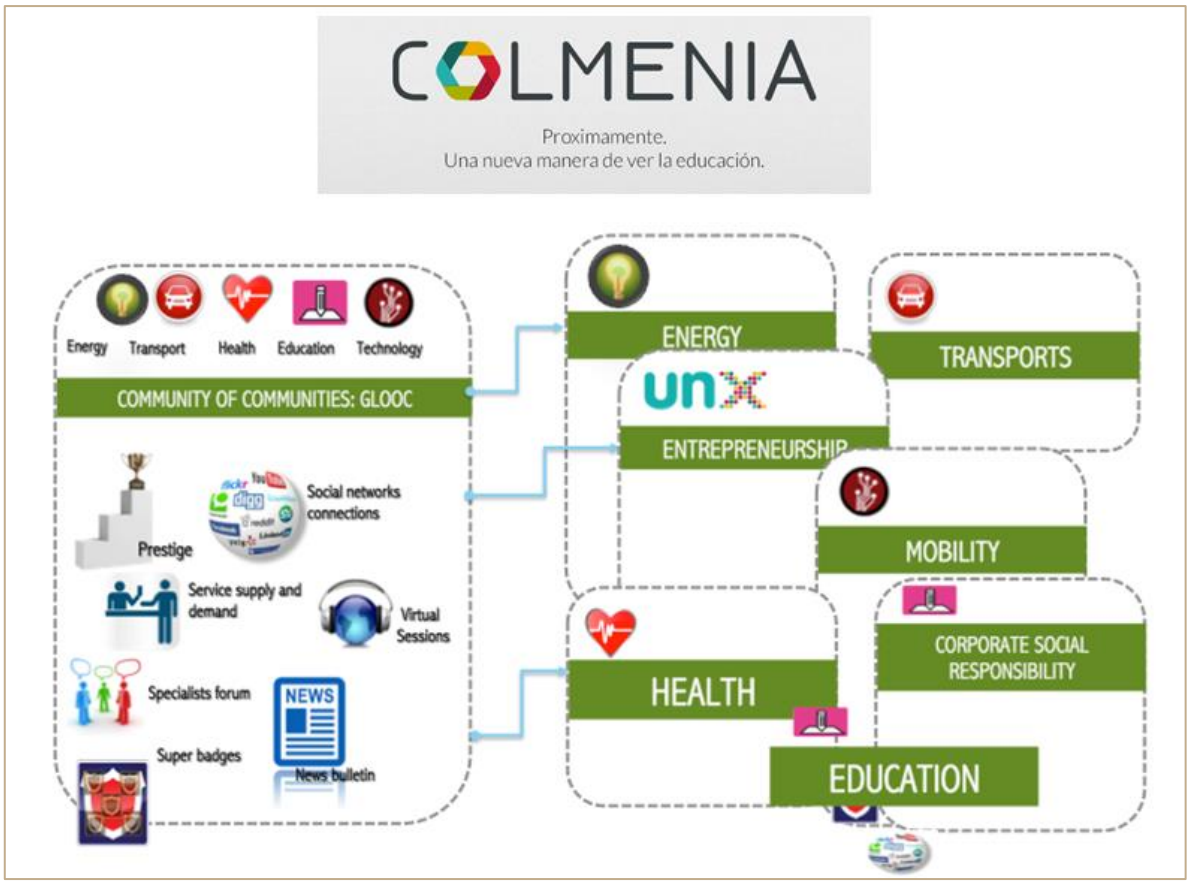

Figure 1 Colmenia A community of communities

- Provision of the necessary tools for students to "browse" in the educational online space, promote reflection upon their learning processes and about next steps to take.
- Delivery of "super badges". The concept of "super badge" is very much aligned with the implementation of PLEs in a MOOC framework. A "super badge" is the result of joining badges which may be gained either by completing a MOOC or another activities in the communities. This means that badges may be obtained from different platforms and combined freely, and a super badge is delivered when completing one of different learning pathways.

ACKNOWLEDGMENTS TO UNX PARTNERS

The UNX project has been the result of an initial joint effort by the Center for Virtual Education (CSEV), Telefónica Learning Services, Santander, UNED (National Distance Education University of Spain), and the Center for Mobile Learning, MIT (Massachusetts Institute of Technology). In any case, due to the open nature of the UNX Entrepreneurship Community, the door is open for any organization considering getting involved in the initiative. This is the case of RedEmprendia (a network of universities promoting responsible innovation and entrepreneurship in Ibero-America), which has recently joined the project as partner as well as CEDIERJ. Since CSEV Foundation was closed in April 2014, UNX is being coordinated by TLS and RedEmprendia.

CONCLUSION

Despite their short history (stemming from 2008), MOOCs are not a unidirectional concept. On the contrary, they are an evolving phenomenon bound to affect different pieces of the educational system, but also the way in which our society interacts. In fact, it may be an excellent vehicle for realizing concepts such as open participation or crowd citizenship, collaboration, sharing, communities, knowledge creation, etc.

These concepts are present in MOOCs, especially in those based on connectivism. UNX is an innovative cMOOC platform combined with a layar for social interaction. UNX wants users to develop a deeper participation in the community in order to facilitate interactions among them and promote exchange of knowledge and ideas and learning regarding entrepreneurship.

The former is aligned with the implementation of Personal Learning Environments (PLE) in the context of MOOCs and it is aimed to improve the MOOC experience overstepping their boundaries, and allowing students to follow a personal learning path by using different platforms, modules and courses. In this sense, Colmenia is offering students the possibility of designing a curriculum based on skills recognized through badges and superbadges, which will probably result in higher engagement and employability levels. The "umbrella" Colmenia and mobile version of the UNX MOOC platform walks in that direction. Time and Learning and entrepreneurial analytics may prove necessary to elucidate whether some of the expected results become true and what is the potential of communities of knowledge.

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MORE INFORMATION ABOUT THE UNX PROJECT

UNX: http://www.redunx.org

COLMENIA: http://www.colmenia.org/web/guest/home

cMOOC App Inventor and Entrepreneurship: http://www.colmenia.org/web/app-inventor

WEPRENDO:http://weprendo.colmenia.org/

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Rhizo14 – The MOOC that community built

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KEY MESSAGE

By creating an event like a MOOC we are potentially radically redefining what it means to be an educator. We are very much at the beginning stages of our learning how to create the space required for community to develop and grow in an open course. These field notes speak to the my own journey in the design of 'Rhizomatic Learning – the community is the curriculum'. They are, in effect, a journey towards planned obsolescence.

KEYWORDS *rhizo14, rhizomatic learning, MOOC*

INNOQUAL Practice
The work below was submitted to the INNOQUAL call for practice-based papers, i.e. stories from the field and reflections on current practice.

Oscar is my almost-eight year old son. He's been blogging since he was four, has played around a little on twitter and has generally grown up in a house where his parents have made a fair chunk of their career out of blogging and working online. It is with this as a backdrop that he walks into the room yesterday and asks

> "Are you in charge of ALL of rhizo14, i mean, all around the world?"

You see I received a box in the mail yesterday that had a card, 4 t-shirts and a magnet that said #rhizo14 on it. The artwork, the hashtag and the tagline "A communal network of knowmads" come from a Open Course that I started in January of 2014 now called #rhizo14. The package Oscar was looking over had a stamp from Brazil on it which I explained came from Clarissa, an educator who participated in Rhizo14. She sent everyone in the family a t-shirt with the rhizo14 logo on it.

So… are you in charge of it? My son not being accustomed to me being lost for words, was confused by my lack of response. In that simple question lies much of what I have struggled to explain about the event that is/was #rhizo14. What does it mean to be 'in charge' of a MOOC? What was my role in something that was very much a participant driven process?

If I am 'in charge' what does that mean in terms of my responsibility towards the quality of the experience people have as part of rhizo14?

WHAT WAS THE COURSE NOW CALLED RHIZO14

I say "now called" because the original title of the course was "Rhizomatic Learning – The community is the curriculum" but the people who are still participating refer to it by the hashtag. It was a six week open course hosted on the P2PU platform from January 14 to February 25th. The topic of the course was to be about my years long blabbing about rhizomatic learning. I wanted to invite a bunch of people to a conversation about my work to see if they could help me make it better. Somewhere in the vicinity of 500 people either signed up or joined one of the community groups.

WHAT I WAS HOPING FOR

Fundamentally i was hoping that 40 or 50 people would show up to the course and that by the end there would still be a handful of people interested in the discussion. I thought it would be a good opportunity for me to gather the work that I had done and make it better than it was before. I find the pressure of having an audience is very helpful in convincing me to get things together. I was not precisely hoping that we would get enough people for the course to have MOOC like characteristics, and I certainly didn't put the time into advertising it in a way that was likely to lead to that. I was hoping that after 6 weeks I would have a better grasp on my own work, and that a few participants would have had a good quality experience.

In the more macro sense, I'm always hoping that a course that I'm working on leads to some sort of community. My work since 2005 has focused on ways to encourage people to see 'the community as the curriculum'. I'm always hoping to organize an ecosystem where people form affinity connections in such a way that when the course ends, and I

walk away, the conversations and the learning continues. I think of this as one of the true measurements of quality in any learning experience - does it continue.

HOW THE COURSE WAS DESIGNED

I made three different attempts at designing rhizo14.

The first was around my own collection of blog posts about rhizomatic learning. This was, essentially, the content of 7 years of thinking about the rhizome in education, broken into six week. In retrospect, it seems difficult to believe that I was considering so instructivist an approach, but it is very much following previous models of open courses I have been involved with. I think that this course design was prompted by my concern that people would be unfamiliar with the use of the rhizome in education and would need structure to support their journey with the idea. If you have content to present, you can ensure a certain minimum quality experience. It was also easy to just use the stuff I already had :).

Two days later, I had almost completely discarded this model for a new one that was more focused on the process of learning and connecting in an open course. The idea in model two was to 'unravel' the course from a fairly structured beginning to a more open and project based conclusion. This design was meant address my concerns about new participants to open/online courses. Over the years we've seen many complaints about the shock of a distributed course and, I've always thought, we didn't see the vast majority of the complaints of participants who just couldn't get their feet under them and didn't complain publicly. Here I was trying to ensure quality from a process perspective.

Two days before the course started, I threw that out the window as well. In discussions with the excellent Vanessa Gennarelli from P2PU she suggested that I focus the course around challenging questions. It occurred to me that if i took my content and my finely crafted 'unravelling' out of the way I might just get the kind of engagement that could encourage the formation of community. The topic I chose for week 1 mirrored the opening content i was going to suggest but with no readings offered. I gave the participants "Cheating as Learning" as a topic, a challenge to see the concept of cheating as a way of deconstructing learning, and a five minute introductory video. This is the format that I kept for the rest of the course, choosing the weekly topics based on what I thought would forward the conversation. Here the quality of the experience is left up to the participant to control.

Week 1	Cheating as Learning (Jan 14-21)
Week 2	Enforcing Independence (Jan 21-28)
Week 3	Embracing Uncertainty (Jan 28-Feb 4)
Week 4	Is Books Making Us Stupid? (Feb 4-Feb 11)
Week 5	Community As Curriculum (Feb 11-Feb 18)
Week 6	Planned Obsolescence (Feb 18-?)

WHAT HAPPENED DURING THE COURSE

Saying that I lost control of the discussion creates the false premise that I ever had control of it. From the get go, participants took my vague 'cheating' prompt and interpreted it in a dozen different ways. There were several strands of ethical debates regarding cheating. There were folks who decided to discuss testing. Others focused on how learning could be defined in a world of abundance. Still more took issue with the design of the question and focused on this. There was a varying degree of depth in these discussions, and, frankly, a certain amount of debate on what qualified as valid discussion.

My response was to (as i had promised) write a blog post explaining my intention with the question and surveying what people had written. This was the only week that I did this. As the course developed, and new challenges emerged, it became clear that these review posts were being created without my help. They were, in essence, me trying to hold on to my position as the instructor of the course. A position I had not really had from day 1. By the end, I only formally participated as instructor in posting the weekly challenges

with a short video and by hosting a weekly live discussion on unhangout. The community has become its own rhizome, in the sense that it had created space for multiple viewpoints to coexist at varying levels of discussion.

WHAT HAPPENED AFTER THE COURSE

My 'planned' course finished on the 25th of February. On the 26th of February, week 7 of the course showed up on the Facebook group and the P2PU course page. This week entitled "The lunatics are taking over the asylum" was the first of many weeks created by the former 'participants' in the course. This new thing, which it is now safe to call #rhizo14, is currently in week 11 of its existence. In week eight, the community chose a blog post that I wrote several years ago as a topic of discussion. Week 11 is addressing the concern of allowing all voices to be acknowledge (a discussion that was very much present during the first six weeks) in an open environment.

As they began so they continued. The vast majority of the people who participated are now only distantly connected to the course if at all. A core of 50 or so people remain in the discussions, however, and are now identify themselves as 'part of rhizo14'. For now, at least, there is a community of people who I am happy to number myself a member of. When I consider my responsibility as a 'leader' in this sort of community, it makes me wonder whether 'educator' is even the right word for it.

SO OSCAR… AM I IN CHARGE OF RHIZO14

Uh… no. I don't think I ever was. An amazing group of people from around the world decided to spend some of their time learning with me for six weeks. A fair number of those seem to be forming into a community of learners that are planning new work and sharing important parts of their lives with each other. We are creating together. And it can't be up to me to decide what good means for any of them.

My son, by this point of the conversation, would doubtlessly already be asleep

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Pedagogy of MOOCs

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KEY MESSAGE

MOOC's have attracted huge attention, and hype, for supporting massive enrollments and for being free. What has received less attention is the pedagogical aspects of MOOCs. How can MOOCs effectively teach thousands of students simultaneously?

KEYWORDS *pedagogy, cMOOCs, xMOOCs, online learning, Open Educational Resources*

INNOQUAL Practice
The work below was submitted to the INNOQUAL call for practice-based papers, i.e. stories from the field and reflections on current practice.

INTRODUCTION

There is a great deal of energy, enthusiasm, and change happening in today's education sector. Existing and new education providers are leveraging the Internet, ICT infrastructure, digital content, open licensing, social networking, and interaction to create new forms of education. Open Educational Resources (OER) (including open textbooks), Open Access, and Massive Open Online Courses (MOOCs) have all gained traction as significant drivers of education innovation.

MOOCs in particular are stimulating widespread discussion around the potential to reach and serve hundreds of thousands of learners who would otherwise not have access to education.

While MOOC's have attracted huge attention, and hype, for supporting massive enrollments and for being free its the pedagogical aspects of MOOC's that interest me the most.

The challenge is this – How can you effectively teach thousands of students simultaneously? I'm fascinated by the contrast between post-secondary faculty and K-12 teacher contract agreements that limit class size and the current emergent MOOC aim of having as many enrollments as possible. What a dichotomy.

MOOC's have done a great job at creating courses open to massive enrollments from anywhere around the world. But how well are MOOC's doing at actually successfully teaching those students? Based on MOOCs equally massive dropout rates having teaching and learning success on a massive scale will require pedagogical innovation. It's this innovation, more than massive enrolments or free that I think make MOOC's important.

THE EVOLUTION OF MOOCS

The Early Days - cMOOCs

MOOC's originated in Canada and I've been fortunate to have followed and experienced the early pioneering work of people like Stephen Downes, Alec Couros, Dave Cormier, and George Siemens. In 2007 there was Social Media & Open Education, in 2008 & 2009 Connectivism, in 2010 Personal Learning Environments Networks and Knowledge, in 2011 Learning and Knowledge Analytics which we hosted in the BCcampus SCoPE online community. For a more complete listing see Stephen Downes Partial History of MOOC's.

All of these early MOOC's were open to anyone to participate. Some of these early MOOC's, taught by university faculty, had tuition paying students taking the course for university credit who were joined in the same class with non-tuition paying, non-credit students who got to fully participate in a variety of non-formal ways. Alec Couros pedagogically designed his graduate course in a way that relies on the participation of non-credit students. Other early MOOC's were solely offered as a form of informal learning open to anyone for free without a for-credit component.

Alec Couros produced a YouTube trailer for his Social Media & Open Education course that conveys a bit of the creative fun associated with these early MOOC's.

The most fascinating aspect of these early MOOC's was the pedagogical approach. Dave Cormier in this YouTube video maps out the five steps to success in a MOOC – 1. Orient, 2. Declare, 3. Network, 4. Cluster, 5. Focus.

The "How this course works section" of the Personal Learning Environments Networks and Knowledge MOOC provided participants with the following:

PLENK2010 is an unusual course. It does not consist of a body of content you are supposed to remember. Rather, the learning in the course results from the activities you undertake, and will be different for each person.

In addition, this course is not conducted in a single place or environment. It is distributed across the web. We will provide some

facilities. But we expect your activities to take place all over the internet. We will ask you to visit other people's web pages, and even to create some of your own.

This type of course is called a 'connectivist' course and is based on four major types of activity.

The four types of activity are described as; 1. Aggregate, 2. Remix, 3. Repurpose, 4. Feed Forward.

I encourage you to read the full description here.

In those early pioneering days MOOC's were exciting for their pedagogy! Even the courses were about innovative pedagogy – Social Media & Open Education, Connectivism, Personal Learning Environments, Learning Analytics.

In 2011 MOOC's migrated to the US with Jim Groom's DS106 Digital Storytelling at the University of Mary Washington in Virginia. DS106 is a credit course at UMW, but you can also be an "open participant". As described in About ds106 you can "join in whenever you like and leave whenever you need. This course is free to anyone who wants to take it, and the only requirements are a real computer, a hardy internet connection, preferably a domain of your own and some commodity web hosting, and all the creativity you can muster."

DS106 took MOOC's in new pedagogical directions. DS106 has a highly innovative pedagogical approach to assignments. Rather than confidential, secret assignments created by faculty, ds106 course assignments are collectively created by course participants over all offerings of the course and are posted online in an Assignment Bank anyone can access. This model of having course participants collectively build the course assignments which are then used by students in future classes is a hugely significant pedagogical innovation.

I'll always remember ds106 as the first ever online course with its own radio station ds106 radio. The pedagogical potential of a course radio station is an exciting but relatively unexplored opportunity.

MOOCs Go Mainstream - xMOOCs

The next big step for MOOC's came in the fall of 2011 when Stanford Engineering professors offered three of the school's most popular computer science courses for free online as MOOC's – Machine Learning, Introduction to Artificial Intelligence, and Introduction to Databases. The Introduction to Artificial Intelligence course offered free and online to students worldwide from October 10th to December 18th 2011 was the biggest surprise. Taught by Sebastian Thrun and Peter Norvig this course really was massive attracting 160,000 students from over 190 countries.

Pedagogically though these MOOC's from Stanford were a step backward. The teaching and learning experience was comprised of watching video lecture recordings, reading course materials, completing assignments and taking quizzes and an exam. Gone were the rich pedagogical innovations from the earlier MOOC's. Instead these MOOC's simply migrated campus-based didatic methods of teaching to the online environment. Most disappointing of all was the absence of any effort to utilize the rich body of research that had already been done on how to teach online effectively.

While didactic, lecture-based methods of teaching have long been the mainstay of bricks and mortar schools we know that this method of teaching does not transfer well to online. For this reason alone I'm not surprised MOOC's have high drop out rates.

Sebastian Thrun's experience teaching the Stanford Artificial Intelligence MOOC was so compelling that he left Stanford and raised venture capital to launch Udacity with a mission to change the future of education by making high-quality classes affordable and accessible for students across the globe.

The Udacity FAQ provides some explanation of the pedagogy. Udacity courses include lecture videos, quizzes and homework

assignments. Multiple short video sections make up each course unit. Each video is roughly five minutes or less, giving you the chance to learn piece by piece and re-watch short lesson portions. All Udacity courses are made up of distinct units. Each unit is designed to provide a week's worth of instruction and homework. However, since Udacity enrollment is open, you can take as long as you want to complete Udacity courses. Udacity courses include discussion forums and a wiki for course notes, additional explanations, examples and extra materials. Each course has an area where instructors can make comments but the pedagogical emphasis is on self-study.

In late December 2011 MIT announced edX with the aim of letting thousands of online learners take laboratory-intensive courses, while assessing their ability to work through complex problems, complete projects, and write assignments. As with other MOOC style offerings students won't have interaction with faculty or earn credit toward an MIT degree. However, for a small fee students can take an assessment which, if successfully completed, will provide them with a certificate from edX.

Pedagogically I find edX odd. First their primary goal as stated in their FAQ is to improve teaching and learning on campus. Say what? You want to do a MOOC that teaches tens of thousands of students online in order to improve teaching on campus?

Second edX describes one of its distinguishing features as supporting faculty in conducting significant research on how students learn. There is no mention of applying research coming out of online learning to edX. Its almost as if online learning has yet to be invented. This makes it seem that the edX MOOC students are merely guinea pigs whose learning data will be collected by faculty as research data and used to benefit and improve the learning experience of tuition paying on-campus students.

A third edX oddity is that it isn't trying to leverage MIT's own OpenCourseWare materials by combining them with innovative online learning pedagogies for use as MOOC's. Its almost like MIT edX and MIT OCW are from completely different institutions that have nothing to do with each other.

The focus of edX so far seems primarily to be not on pedagogy but on engineering an open source MOOC platform.

Coursera founded by computer science professors Andrew Ng and Daphne Koller from Stanford University launched in April 2012 as an educational technology company offering massive open online courses (MOOCs). Shortly after launch Coursera was working with Stanford University, the University of Michigan, Princeton, and the University of Pennsylvania. By February 2013 Coursera had over 69 university partners and was offering courses in Chinese, Italian, and Spanish.

Coursera is one of the few MOOC's that actually describes its pedagogical foundations.

Coursera pedagogy involves video lectures, mastery learning, and peer assessment. Coursera is providing its university partners with a flipped classroom opportunity whereby the lecture, course reading, and to some extent assessment and peer-to-peer interaction for campus-based tuition paying students are handled in the MOOC with on-campus activities focused more on active learning. However, for Coursera MOOC participants who are not tuition paying campus-based students there is no active learning component. Although once again students are tossed a tidbit of social learning in the form of discussion forums. Lo and behold this actually improves learning as Clint Lalonde points out in "Online interaction improves student performance. Gee, imagine that."

All of these new MOOC's are focused on objectivist and behaviourist methods of teaching and learning. Their pedagogy is based on an assumption that when there are tens of thousands of learners social learning isn't feasible. So instead of interaction with a person these MOOC's focus on replacing the human social component of learning with a kind of artificial intelligence interaction with the platform. Coursera holds this up as good

practice by noting, "Even within our videos, there are multiple opportunities for interactions: the video frequently stops, and students are asked to answer a simple question to test whether they are tracking the material." Designing MOOC pedagogies based on what some are calling robot marking jeopardizes quality, learning outcomes, and ignores best practices in online learning.

Students tend to find online behaviourist and objectivist learning pedagogies boring, impersonal, and not interactive or engaging. But those of us who have been working in the field and taken exemplary online learning courses know that in fact online learning pedagogies can be incredibly social even more so than campus-based courses. It is relatively easy to instructionally design online learning so that every student engages in deep discourse.

Early MOOC's and exemplary online learning pedagogies recognize and utilize the breadth of knowledge and experience students participating in the course have. The magic of online learning happens when extensive effort is made to tap into student expertise through blogs, chat, discussion forums, wikis, and group assignments. Socio-constructivist and connectivist learning theories acknowledge and embrace the social nature of learning. Learning is not just acquiring a body of knowledge and skills. Learning happens through relationships. The best online pedagogies are those that use the open web and relationship to mine veins of knowledge, expertise, and connections between students, between students and the instructor, and between students and others on the open web.

The big new MOOC's also seem to be ignoring Open Educational Resources (OER) and the incredible pedagogical affordances openly licensing course content brings. Many of the early MOOC's were not just open in terms of enrollment they were open in terms of utilizing the open web, utilizing open content, and making continuous improvement of courses an integral part of the teaching and learning experience. The new MOOC's seem intent on enclosing students in a closed environment that is locked down and DRM'ed in a proprietary way. See Coursera, Chegg, and the Education Enclosure Movement for a good description of this direction.

Like many of my Canadian brethren I mourn the loss of early MOOC pedagogical innovations and find diagrams like this that purport to show Major Players in the MOOC Universe a form of colonialism that attempts to rewrite MOOC history.

However, I do see MOOC's as a major innovation and hold out hope that other MOOC providers will differentiate themselves by being open and by fully utilizing social learning.

Pedagogical Recommendations for MOOCs

Let me end with my own pedagogical recommendations for MOOC's:

- Be as open as possible. Go beyond open enrollments and use open pedagogies that leverage the entire web not just the specific content in the MOOC platform. As part of your open pedagogy strategy use OER and openly license your resources using Creative Commons licenses in a way that allows reuse, revision, remix, and redistribution. Make your MOOC platform open source software. Publish the learning analytics data you collect as open data using a CC0 license.
- Use tried and proven modern online learning pedagogies not campus classroom-based didactic learning pedagogies which we know are ill-suited to online learning.
- Use peer-to-peer pedagogies over self study. We know this improves learning outcomes. The cost of enabling a network of peers is the same as that of networking content – essentially zero.
- Use social learning including blogs, chat, discussion forums, wikis, and group assignments.
- Leverage massive participation – have all students contribute something that adds to or improves the course overall.