

MООСs and Educational Challenges around Asia and Europe

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MOOCs and Educational Challenges around Asia and Europe

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Part I

Introduction

What do we know about MOOCs?

Bowon Kim

1.

In describing the so-called hype of MOOCs, Bonnie Stewart (2013) stated that “the topic of massive open online courses makes visible the fault lines emerging in the field of academia.” Indeed, the title of an article on the phenomenon of MOOCs in *The Economist* went so far as to read, “The attack of the MOOCs.” (2013) Many people in and outside higher education have discussed the visibility of these fault lines, indicating the potentially disruptive power of MOOCs.

For the past few years, the MOOCs movement has emerged as a burning question in the global field of higher education and lifelong learning. Nobody denies its innovative potential with regard to education in general and higher education specifically. However, as of December 2015, it is still too early to judge whether the fault lines are actually widening or whether they are just another intriguing headline in the newspaper. The MOOCs movement has not journeyed very far from its starting point and is still in the midst of an ongoing process. In general, any fair and balanced appraisal of MOOCs will require more time. Nevertheless, what is most visible and obvious is that the aforesaid fault lines are active and shifting with considerable power. This book attempts to present a picture of the emerging MOOCs movement from a global perspective, especially among the member countries of ASEM (Asia-Europe Meeting).

Before summarizing the contents of the book, I would like to give a brief introduction to the authors and their collaborative networking process.

All the authors of this book are members of a research network named e-ASEM — one of five research networks that are part of the ‘ASEM education and research hub for lifelong learning.’ As the name suggests, the main concern of the ASEM research hub is lifelong learning, and e-ASEM, as its primary network (network 1), deals with the development of ICT skills, e-learning and the culture of e-learning in lifelong learning. The hub and its networks launched their first steps in the spring of 2005, and since then, members of network 1 have discussed how to widen and enhance lifelong learning practices in ASEM countries by making use of ICT skills and gleaning from our e-learning experiences and achievements.

During their network meeting held in August 2014, members of network 1 agreed on selecting MOOCs as their research subject over the course of the next few years, and this book is the result of that first stage of collaborative research, conducted mostly in 2015. During the meeting, researchers then discussed possible directions and research topics, of which the following research areas were chosen: *MOOC-readiness, quality assurance, educational technology and engagement, learning cultures, instructional design, sustainability and implementation, and learning analytics*. The list is inclusive of almost all of the essential research fields we encountered in our discussions about the theory and practices of MOOCs. Network members also agreed to divide their collaborations into two stages: first, to acquire the general picture of MOOCs in each member country; and second, to then launch a full-scale study on the aforesaid research topics.

The first stage, a kind of preliminary research period, was necessary owing to some differences in understanding among member countries with regard to the practices of MOOCs. This stage originated from the question, “What do we know about MOOCs?” For example, member countries differed tremendously from each other in such aspects as IT infrastructure for delivery, governmental policies, languages spoken in MOOCS, different levels of higher education institutions, different tuition fees for higher education, etc. Thus, researchers concluded that basic knowledge of what was going on in each country regarding MOOCs was first needed. The result can be seen here as a collection of national reports or case studies in this book.

The authors were given guideline for their papers, requiring them to include firstly the context of each MOOC case, secondly, a description of MOOCs, and finally their initial experiences and validations. The description, the main part of each paper, here comprises all the key words on MOOCs: *culture, embedding, business model, amount of communication, technical aspects, accreditation, autonomy, adaptability*, etc.

2.

Roughly speaking, there is a distinct difference between Asian and European countries regarding MOOCs. Asian countries have much in common with each other in their governments' active initiatives for MOOCs, as we find in Malaysia, Thailand, the Philippines, China and South Korea. In those countries you see the national brands such as K-MOOCs (in Korea), Thai MOOCs or Malaysian MOOCs. Those Asian governments have recognized the potential of MOOCs in advance and geared up for new projects, either to expand people's accessibility to higher education in general (China), or to reform their existing systems of higher education and lifelong learning (Korea and Malaysia). Things are a little different in Japan where its JMOOCs project was initiated by a consortium composed of universities, corporates, governmental institutes and academic societies.

Governmental initiative is a strong motivator and plays a pivotal role when you start an innovative new project. However, it has its own merits and demerits, for it leaves a big question unsolved, that is, the sustainability. It is especially true of MOOCs, where one of the two O's signifies "open", that is, "tuition free of charge", so the financial stability is a core agenda for its sustainability in the future. The business model for MOOCs is not confirmed or established yet even in the USA, even though more than 25% of MOOCs learners are from the USA. Major providers of American MOOCs such as EdX or Khan Academy are still presumed to find their fund-raising mostly in their mother universities or other public charity foundations. MOOCs providers-for-profit like Coursera or Udacity are not clear yet on their monetization strategies. In short Asian MOOCs should seek to find a way to stand on their own in the long term without any governmental funding.

The same kind of governmental initiatives are found in some European countries such as Spain or Latvia. However, governments are not the only or major players in the European playground for MOOCs. European pioneers approach the implementation of MOOCs via existing frame of cooperation. The European Union provides them with a big umbrella for their challenge, so many of the research and cooperation projects for MOOCs are funded by the European Commission. Just to name a few, we find HOME project (*Higher Education Online: MOOCs in the European Way*), ECO project (*Elearning Communication and OpenData*), EMMA project (*European Multiple MOOC Agregator*) and OpenupEd platform representing the first MOOCs initiative across Europe. Each of the projects is now groping for a better solution to make use of the innovative potential of MOOCs. In contrast, Danish paper introduces a unique case, which exemplifies their approach to implement educational programmes for caregivers in Indonesia supported by MOOC.

In a foreword to a special section on MOOCs of an international journal on distance education, Sir John Daniel asks this question: MOOCs – Evolution or Revolution? His answer is no, for two reasons. The first one is, higher education does not do revolutions, and the second one is, MOOCs do not fulfill the core function of higher education. I do not want to spend time to discuss any difference between evolution and revolution. What matters is the wave of dramatic change sweeping over higher education of the present day began to be called ‘revolution’ by some people.

As mentioned above, this book is a preliminary study for acquiring a general picture of MOOCs, so I hope it could help provide researchers and educators with a basic knowledge of what is going on in ASEM countries regarding MOOCs, the burning question of the day.

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Part II

MOOCs in Asia

A Case Study : The development of MOOCs in China

Wang Ying

1. Introduction

The appearance of massive open online courses (MOOCs) has, in a manner of speaking, aroused the great attention of education, business, and academic circles in China, stirring up the higher education establishment like “a magic wand”. This case study sets out to observe the related focus groups of MOOCs and systematically analyze MOOCs' development in China based on current understanding. Meanwhile, overviews are made on the practical exploration, experience of The Open University of China (OUC)’s MOOCs.

2. Attention from Chinese Industries

The concept of MOOCs, raised in 2008 and developed since then, has spread throughout the world. Because of the impact of MOOCs and the challenges that still lie ahead, Chinese universities, non-governmental organizations, academic organizations, enterprises and various social circles are closely watching and promoting their development. They are trying to support the growth of MOOCs in the hope that they will be able to optimize their future competence and make good use of them to create new development space.

2.1. Positive Response from Universities

The year 2013 was known as “MOOCs Start-Up Year” for institutions of higher education in China, with traditional walled universities, in particular, gradually pushing more of their quality courses online. Tsinghua University and Peking University cooperated with edX; Fudan University and Shanghai Jiao Tong University cooperated with Coursera, of the United States. In addition, the Chinese University of Hong Kong, the Hong Kong University of Science and Technology, and Taiwan University also joined the overseas MOOC platform. Peking University joined hands with DeDao Group to develop MOOC courses with a view to creating a MOOC course system synchronized worldwide to provide all-round online and offline learner support. In October 2013, the OUC convened the “Think Tank and Seminar: Mind to MOOCs”, with executive members of the International Council for Open and Distance Education (ICDE), including international representatives from the United Nations Educational, Scientific and Cultural Organization (UNESCO), the European Federation for Quality in e-Learning (EFQUEL), Open University UK, National Technological University (UTN) of Argentina, Massachusetts Institute of Technology (MIT) of the United States, Athabasca University of Canada, African Virtual University (AVU), University of South Africa, University Terbuka of Indonesia, and so on, conducting special in-depth discussions on MOOCs, specifically, how to use MOOCs to deliver equal access to quality courses to people anywhere in the world who are interested in learning. Furthermore, practical exploration into MOOCs has also been carried out in China by way of the University Alliance Joint Platform: Southwest Jiao tong University works together with Chiao Tung University in Hsinchu, Taiwan, Shanghai Jiao Tong University, Xi'an Jiao tong University, and Northern Jiao tong University in the unified construction of open MOOC platform, utilizing the various advantages and characteristics of the five universities in developing quality course resources. This provides a method of combining capabilities and expanding the social influence of Jiao Tong (communication) universities. Shanghai Jiao tong University united 12 universities, including Peking University, Tsinghua University, and Fudan University, and others to form the Online Course Sharing Alliance to help facilitate the sharing of quality online courses and to carry out the education and teaching reforms needed for MOOCs.

2.2. Participation of Enterprises in the Building of MOOCs'Platforms

The MOOC platform is similar to a “new continent” of higher education. Several special MOOC platform suppliers have poured in initially and more were brought in later as course content suppliers. Different from the universities who wanted to set up their own websites for open education

resources in previous open education resource campaigns, the appearance of these special platform suppliers this time has lowered the initial investment threshold and reduced financial input. At present, “kaikeba” (an online professional ICT training website) has reached agreements on course accreditation and credit transfer with several universities, and will provide learner support by relying on an online learning and offline examination model. Their service is aimed mainly at university students. Some enterprises also make use of their own platforms and resources for open classes. Moreover, enterprise platforms like xue.taobao.com, jiaoyu.baidu.com, and duobei.com are marketed directly to individuals, encouraging them to attend classes and learn on their platforms. Although enterprises have joined in the MOOCs movement, they have different identifications and roles. There are platform suppliers, especially serving universities or individual client groups; there are also content suppliers, recommending their own resources and providing tailor-made services with the help of cloud-based platforms. With the development of U-learning, further observation needs to be made on the willingness, timing, and methods by which terminal suppliers may also enter the market.

2.3. Participation of Scholars in research of MOOCs

MOOCs has aroused positive attention from the majority of scholars and learners worldwide, leading many scholars to rationally analyze the role of MOOCs. Some scholars indicate that this new type of online education could become one of the core means for future education, and will greatly influence China’s future talent development prospects. “Just think of having thousands of young people who are able to receive systematic instruction from Harvard University, Massachusetts Institute of Technology, and Stanford University via high quality cheap online education in such countries as India. In contrast, most of the students in China are still learning in traditional second and third class universities. How can our next generation compete with elites in the world market?” Some scholars have noted another positive aspect to MOOCs. Not only can high quality courses inside the universities be shared with the world, seizing the opportunity to participate in MOOCs has also led to innovations in reforming China’s university teaching models. “MOOCs have removed university walls, and we have to think proactively about how to better fill the relationship between education and society and how to fill their needs”. Other scholars say that they feel threatened by MOOCs from abroad, and that Chinese universities must take relevant countermeasures as soon as possible. Some people hold that “the MOOCs launched in the United States have shaken the foundations of traditional education, and will reshuffle the university system resulting in a completely new structure”. Some scholars also believe that the impact of MOOCs on

universities is shown more in teaching strategies and teaching methods, since they are more closely related to interaction and problem solving. Currently, the three major MOOC websites mainly offer science and engineering courses as well as humanities courses, and the interaction between the teachers and students is not greatly emphasized. Therefore, there are many theoretical and practical problems worthy of in-depth discussion. Some scholars point out that the MOOC model will not have a great impact on China because many people pursue higher education mainly for the credentials, not just the knowledge alone. Until now, MOOCs are unable to provide a comprehensive range of degrees. It is thought that, for this reason, MOOCs won't have a great impact on traditional higher education in China^[2].

2.4. Participation of Individual Users in experience of MOOCs

MOOCs has also aroused positive attention from individual users (learners). Chinese users (learners) of MOOCs are distributed as shown in figure 1. MOOC learners are predominated by males aged 20-39 engaged mainly in education and ICT industries, and most learners study in undergraduate programmes and above.

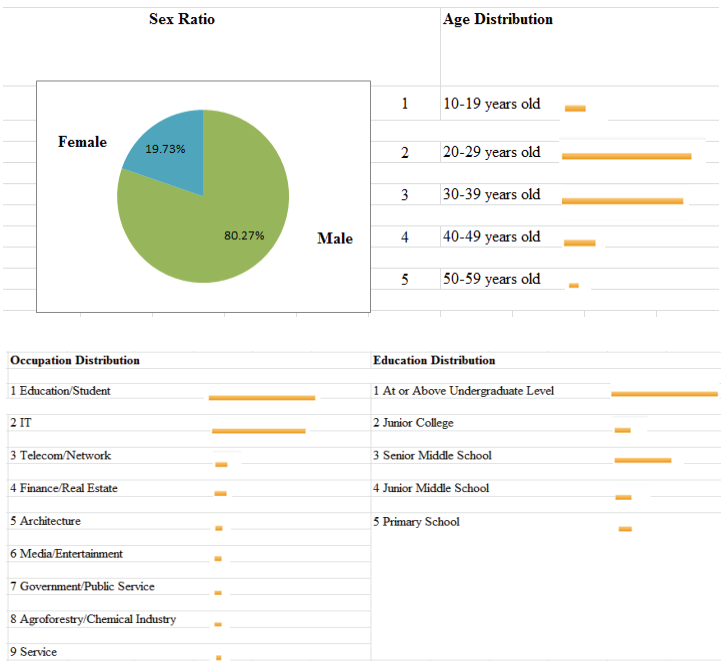


Figure 1: Distribution of age, occupation, and academic level

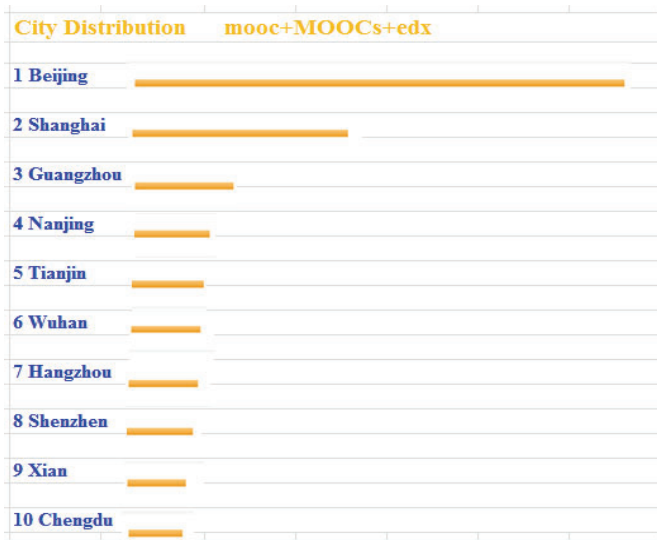


Figure 2: “MOOC” Search Index Ranking By City

Figure 2 shows the search index ranking of “MOOC” related key words (including “MOOCs”, “edx”, “coursera”, and “Udacity”) by city. By this means, one can deduce the distribution of Chinese MOOC users. The top 5, in terms of geographic area, are: Beijing Municipality, and then the province of Guangdong, Shanghai Municipality, the provinces of Zhejiang and Jiangsu; and the top 5, in terms of cities, are: Beijing, Shanghai, Guangzhou, Nanjing, and Tianjin.

China’s *mooc.guokr.com* is a gathering place for 40,000 learners who are using MOOCs. They often participate in exchanges and discussions on various courses. The learners have a high level of enthusiasm for learning and actively participate. In addition to the online exchanges and discussions of the learners, they also organize offline parties for schoolmates. The performance and views of these MOOC users are representative to some degree, and they hope to continue to absorb knowledge, mostly to satisfy their own quest for enrichment. However, some MOOC learners have found out that the quality of MOOC courses can be quite varied.

3. Relevant Policies and Projects of the Chinese Government or Institutions

In 2003, the Chinese Ministry of Education (MOE) launched the construction of high-quality courses, and over 1,000 national high-quality courses were developed in 2006. The construction of high-quality courses was defined in 2007, and the objective was to achieve the sharing of quality national university teaching resources. The relevant contents of the

high-quality courses are all made publicly available via websites. In 2009, C9, made up of nine Chinese universities, including Beijing University and Tsinghua University, conducted personnel exchange, credit transfer, and course sharing on a larger scale. In 2011, “20open video courses of Chinese universities” were produced by universities in China and open to the public free of charge. The first 120 resource sharing courses from Chinese universities were officially freely opened to the public via *icourses.edu.cn* on June 26, 2013.

Chinese government policies advocate education digitalization, which benefits online education development. Since July 2010 when the Central Party Committee and the State Council issued *the National Outline for Medium and Long-term Education Reform and Development (2010-2020)* and arranged for an “education information network”, the national senior management authorities have promulgated dozens of policies concerning education digitalization, all of which have promoted online education to some extent. Among them is the *10-Year Education Digitalization Development Plan (2011-2020)* issued by the MOE in March 2012. It is proposed in the plan that the key to the next 10 years of education development is digitalization, and that the three major tasks for the 10-year development cycle are comprised of: constructing an education cloud network, training information technology talents, and building information management systems. In July 2012, the MOE issued the *Twelfth Five-Year Plan of National Education Development* and proposed the realization of education modernization and the building of a learning society by the year 2020, entering the ranks of powerful countries rich in human resources. In June 2014, *the Decision of the State Council on Accelerating the Development of Modern Vocational Education* (hereinafter referred to as “Decision”) was issued, and a full deployment was made to accelerate the development of modern vocational education. As stated in the Decision, “A world class modern vocational education system with Chinese characteristics shall be developed for the adaptation of development needs, the deep integration of industry with teaching, the connection between secondary and tertiary vocational education, and the intercommunication of vocational and regular education, which embodies the lifelong education concept”. In 2013, the State Council issued *the “Broad-Band China” Strategy and Implementation Scheme* to strengthen strategic guidance, systematic deployment, and the fast and sound development of broadband infrastructure in China. This type of policy support is sure to leave a clear space in which online education can continue to flourish.

The decision-makers share the same understanding. At the 2014 National Education Work Conference, MOE explicitly indicated the major challenges faced by the future of Chinese education. They include: how to speed up hardware and software construction in order to drive education

modernization along with education digitalization; how to set up the lifelong learning “flyover” to improve the lifelong education system; and how to keep on improving the level of “teaching those who want to learn” so as to provide learners with several varied multi-level options to meet their diversified and individualized learning development needs. The annual work of the MOE also places its focus on “strengthening the construction of learning resources and platforms for continuing education, and strengthening system construction for learning outcomes accreditation, accumulation, and transfer”.

4. Situation Analysis

A calm analysis easily reveals a warm response from Chinese universities. This seems to come naturally as a result of the deep integration of information technology with education over the last 10 years. However, none of China's large scale educational achievement debuts has ever triggered such big waves as the arrival of MOOCs. This is closely linked with the problems and challenges faced by education and higher education development in China. The very purpose of this essay is this search for theoretical and practical exploration of MOOC's development in China.

4.1. Direct Motive

There are rigid demands and problems in the development of education and higher education in China, which lead directly to attention to and participation in MOOCs. There is huge rigid domestic demand for higher education in China, due mainly to China's large population and continuous growth. Universities with the mission to provide higher education must take their responsibility seriously. At the forum on massive online education held by Tsinghua University in June 2013, MOE proposed fully realizing and positively coping with the opportunities and challenges brought by massive online education, closely following with interest the new development trend of international higher education, actively participating in and implementing global cooperation in online education, and accelerating the building of an online education platform in China from a strategic development perspective. In a sense, the development of China's higher education may be said to be in a tight corner. Besides the lack of masters, as is often said, quality course resources are grossly inadequate. It should be noted that enormous and rich courses and even course systems have been established in relation to China's higher education development to this day. Admittedly, the shortage of quality course resources is mainly due to the following five reasons. First, the delay in course concept and operation mode is basically the result of

planned economic concept and mode. Second, the low starting point of course resource construction is historically unable to meet new expectations for higher education to develop at the necessary pace. Third, once course resources are established in China, they are used repeatedly for several years, with slow renewal cycles lagging behind fast social development and educational needs. Fourth, course resource construction is imperfect in China. Some course resources are actually left incomplete, with only lecture contents completed while lacking active links to relevant course resources. Fifth, quite a few course resources fall into the category “whatever is in the basket is a vegetable”, with lectures given by famous teachers and masters as well as quality course resources being quite scarce. Additionally, the closed nature of the system results in many courses that are lacking in vitality and relevant appeal, which causes many learners to lose interest. It’s been shown that the educator-led higher education model is gradually unable to keep pace with the learner-led education needs, with an ever widening divide between educational course design and learners’ needs.

4.2. External Motive

Vigorous development trends in international higher education poses challenges to the prescribed development pattern of higher education in China, which is the external motive for attention to and participation in MOOCs. The MOOC itself is no mystery, but the creative spirit and technological innovation in it are worthy of concern. Seen from the perspective of distance online teaching, MOOCs are open courses offered by way of online learning. The model is not only 100 percent online, but is also open for learning mostly free of charge to all kinds of students. However, the lecture mode and standard of the mainstream MOOCs are by no means “new things”. In the past, Open University UK, established in 1969, offered an off-campus degree programme as another channel for higher education via distance education courses and learner support. One fact, however, must be recognized, that is, the vigorous development trend in the reform and development of global higher education has objectively posed an unprecedented challenge to the prescribed higher educational pattern in China. To recover the vitality of higher education in China, MOOCs require more conscious concern, at least at ideological, strategic, and technological levels. This can be regarded as the external motive for our current attention to MOOCs. In a sense, Today’s MOOCs can be regarded as both strategic and technological challenges posed by the development of global higher education to the development concept and mode of China’s higher education.

4.3. Value of MOOCs in China

How do we see MOOCs? What is the value of MOOCs in China? We hold MOOCs can be looked upon as a technological innovation useful in solving problems related to education and higher education in China, and that the value of MOOCs to open universities comes mainly in the form of educational equality and resource sharing.

4.3.1. MOOCs Regarded as a Technological Innovation in Solving Problems of Education and Higher Education in China

MOOC's development is the result of the deep interaction and integration between technology and education. Thus, MOOCs here can be regarded as a technological innovation to solve an education problem. As the above analysis on the concern over MOOCs in China points out, China's higher education problems and needs converged to generate innovative motive, creating the pressure to bring about innovative action. On the other hand, MOOCs, with the remarkable feature of innovative technology and its intrinsic value, can become a useful guide and strategic partner to assist China at this crossroads, providing a technological transition towards the modern reform and development of higher education.

4.3.2. The Value of MOOCs to Open Universities Focused on Education Equality and Resource Sharing

The development of distance education, especially its vigorous endeavors in the field of higher education, was witnessed in the 20 years after the establishment of China Central Radio and TV University (CCRTVU) in 1979. Namely, with the full implementation of the "modern distance education project" in 1999, e-learning has been successively introduced in 68 universities, upgrading degree education for a broad mass of distance learners with the willingness to learn. However, over the next 20 years, distance education in China will face a strategic transition period along with quite a few theoretical and practical problems. In July 2010, the National Outline for Medium and Long-term Education Reform and Development (2010-2020) was formally issued for implementation, making it the first educational plan released in China since entering the 21st century. It is a programmatic document to guide national education reform and development in the new era. "Distance education" is clearly mentioned three times in the outline, involving the development and application of quality education resources, system construction of online teaching resources, online learning courses, online teaching modes, and so on. Under this plan, a clear direction has been delineated for problem settlement and for the development of distance education in China, and higher requirements have been set for the reform and transition of open universities. The most powerful motivating force for change is capital

investment in online education, and in the second most powerful is technology, such as cloud-based storage technology and mobile Internet. Therefore, driven by these double engines, universities with years of experience in distance education feel a kind of “reverse” in the face of MOOCs to some degree. That is to say, capital and technology not only boost open universities but also put pressure on them, bringing new opportunities to both teachers and students. These teachers and students then become advocates of MOOCs, their opinions and experiences easily reaching those of similar socio-economic status and education, shaping their perceptions and adoption of MOOCs during its early stages of implementation.

Therefore, attention is given to MOOCs in the development of higher education in China, China's distance education establishment, and open universities in particular, must be concerned with MOOCs and work to better adapt to current trends. The goal is to consciously check, build, optimize, and upgrade the acquired course resources so as to fully utilize such resources. An endeavor will be made to better appreciate the learners' right for education and learning, of their own social communication skills and active learning, getting the overwhelming majority of learners (besides the active participants) to join in online learning in different areas (with rural and minority areas included); an endeavor will be made to better appreciate traditional education and teaching, as well as management, leading teachers to perceive and adopt MOOCs and assisting those who want to learn. Above lists may be where the true value of open universities' concern for MOOCs lies.

5. Practical Exploration and Experience of the OUC' MOOCs

The Open University of China (the OUC for short, aka China Central Radio and TV University, CCRTVU for short), as a new type of university, has the special mission of higher education, especially in promoting lifelong learning for all and building a learning society. The OUC is not only paying attention to MOOCs, but also taking an active part in making MOOCs more rational, scientific, and stable. The OUC has not only the willingness to take this on, but also the experience and resources. It can build platforms, gather and construct massive online courses, and ensure their quality. It can build credit banks for learning outcomes and credit transfer, and expand the channel by which learners can enjoy lifelong learning. In this way, the OUC brings into play its educational and social mission and functions as a new type of university, energetically giving impetus to the modernization, internationalization, and popularization of education and higher education in China to ensure its high quality.

A quick Internet check of the OUC's achievements in distance education will show that the OUC has been working unswervingly, from the launch of earliest E-Learning Hub to the establishment of Digital Learning Resources Centre, from the resource integration of the MOE Research and Development Centre for Digital Learning to the practical exploration, from the construction of online platform to the exploration of resource integration and sharing.

The OUC is making positive progress in its “mini-MOOC” (5 minutes) and making reforms in the teaching designs of the lectures. The lectures are divided into relatively independent but interrelated learning modules in order to shorten the relative learning cycle.

OUC is also strengthening learning support services. Seen from the learning platform perspective, Coursera's experience can be used to upgrade the data collection and analysis ability of learning platforms; the existing learner support system can be improved to change the “one teacher to many students” system to one better matching the many-to-many model where key questions are answered by the teacher, and general questions are answered by the online learning community; realizing diversified assessment models and putting into operation multiple assessment models of mutual-evaluation and self-evaluation; providing individualized learning instruction by the autonomous push of learning materials according to the students' preferences.

OUC is also enhancing online learning assessment and intensifying intelligent agent technology. The OUC shall intensify the effective application of such relevant ICT and enhance the analysis, comparison, and tracking of individual features of the online learner.

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Universalizing university education : MOOCs in the era of knowledge based society

Karanam Pushpanadham

1. Introduction

Education at all levels can shape the world of tomorrow, equipping individuals and societies with the skills, knowledge and values to live and work in a sustainable manner. Higher education is of paramount importance for economic and social development. Inculcating relevant knowledge and advanced skills, higher education provides the human resources necessary for sustainable development by generating, adaptation and disseminating knowledge. A university is a think tank that enables scholars to germinate new ideas, strike roots and grow tall and sturdy. By giving people access to knowledge and the tools for increasing and diversifying their knowledge, higher education expands people's productivity, as well as national capacity and competitiveness (Yashpal 2005). Today, as the world becomes increasingly interconnected, interdependent and globalized, higher education is critical for the achievement of economic progress, political stability and peace, as well as for building democratic culture in the society. The 21st century's scientific and technological achievements have provided a scope to view higher education as universal learning platform. Without adequate higher education and research institutions and a critical mass of skilled and educated people, no country can ensure genuine sustainable development (UNESCO, 1998). Today's most advanced economies are based on the greatest availability of knowledge. Comparative advantage is increasingly determined by the competitive use of knowledge and of technological innovations. This centrality makes of knowledge a pillar of the wealth and

power of nations.

Higher Education is recognized as a major drive for economic competitiveness in an increasingly knowledge driven global economy than ever before. The imperative for several countries is to raise higher-level employment skills, to sustain a globally competitive research base and to improve knowledge dissemination to the benefit of society. Higher education contributes to social and economic development through the formation of human capital (primarily through teaching); the building of knowledge bases (primarily through research and knowledge development); the dissemination and use of knowledge (primarily through interactions with knowledge users); and the maintenance of knowledge (intergenerational storage and transmission of knowledge).

The scope and nature of higher education have changed significantly in the knowledge-based society. Efforts have been made across the world to develop a closer link between higher education and external world, including labor market demands and occupational preparation in a more applied way by accommodating the growing diversity in disciplines and expectations. Substantial reforms are taking place in higher education systems in the world at large, mainly aimed at encouraging institutions to be more responsive to the needs of society and the economy. In this context, it is necessary to review the developments through reforms in the system of higher education and set targets for further improvement.

Evolution of MOOCs is a step forward for universalizing university education by expanding its access and quality learning. As the name suggests, these courses are conducted online for hundreds of thousands of students worldwide without restrictions. Top global universities have already joined MOOC platforms or started their own MOOC initiatives. MOOCs offer high quality education from these top universities, usually for free. The FICCI (2014) report highlights that over 10 million students globally have enrolled in thousands of such courses offered by just the top 3-4 providers of MOOCs. Coursera has over 8.5 mn students and offers 700 courses from 110 globally recognized partners. Udemy has over 3 million students and offers more than 16,000 courses. edX has over 1.3 mn students from 195 countries. Udacity has 1.6 mn students in 123 full courses and 26 free courseware. These numbers have been achieved just over the past 3 years (2011-14). The above massive trend of enrolment and the massive opportunities for learners to pursue the courses of their choice from the world reputed institutions by the renowned professors only shows the big stage for universalization of university education.

Over the past few years, higher education has been speculated about sea changes to occur to accommodate more learners at lower costs and to facilitate a shift away from the accumulation of knowledge to the acquisition of a variety of cognitive and non-cognitive skills with high quality. This change is forecasted because of the utilization of Information

and Communication Technology (ICT) in Education. Massive open online courses (MOOCs) are the most recent ICT initiations in the field of higher education on the lines of creating global education platform to make knowledge and educational resources accessible to all. MOOC initiatives basically provide global platform for:

- Extending the reach of the institution and making universal access to quality education
- Building and maintaining Institutional Image and reputation
- Improving economics by lowering costs and increasing revenues
- Improving educational outcomes for both MOOC participants and on-campus students
- Innovation in teaching, research and extension
- International Collaboration and Networking

2. Higher Education in India: Vision of the New World Realities in the context of Knowledge Based Society

The Indian higher education system has undergone massive expansion to become the largest in the world enrolling over 70 million students. Such expansion would have been unimaginable without the extensive use of ICT tools. To illustrate, if India were to create this additional capacity through increase in brick and mortar institutions alone, it would have had to build six universities and 270 colleges each and every month in the last 20 years – a feat that would have been impossible to achieve with India's limited resources. Instead, India chose to go the Massive Open Online Courses (MOOCs) way. (FICCI-2014).

The current higher education system in India is massive and one of the largest systems in the world with over 30.5 million students enrolled across more than 45,000 institutions with a Gross enrollment ratio (2013–14) 22.5% of which enrolment in regular brick and mortar institutions is 84% and Distance education is 16%. The institutional capacity for higher education includes Colleges (33,023), Diploma-granting institutions (12,748) and Universities (659). It is interesting to note that out 659 universities, 47% of them are state universities and 7% are Central Universities where as 16% are owned by private institutions. This number has been growing for the last half a decade as the government of India passed Private Universities Act (Establishment and Maintenance of a Private University Regulations-2010) of promoting public private partnership for development. It was projected that by 2030, India will have the largest population in the world and in the higher education as well. As of now, India has second largest population in the world and also second largest number of students in higher education. Increasing urbanization and income levels will also drive demand for higher education in India. The present

infrastructure will not be able to cater to such a large influx of learners. It is the need of the hour to support the present education model with a non-traditional model and MOOCs will ultimately affect the landscape of higher education enrolment. (Gurpreet Singh. 2014).

The emerging technologies and globalization have brought new dimensions for the pursuit of knowledge in higher education. In the new world order, cross national borders have gradually disappeared and global learning practices have emerged. Virtual Learning contexts, Transnational learning platforms, global citizenship and responsibility etc., are the priorities along with subject specific learning across the world. Higher Education is recognized as a potential agent to address the issues like health, education, peace, environment and economy, which are essential for sustainable development.

As the world moves inexorably towards adopting a knowledge currency, India has the opportunity to participate as one of the planet's forerunners in utilizing a demographic comparative advantage and translating that into immense economic success. The National Knowledge Commission (NKC) has recently made a few recommendations to tackle immediately the more pressing and important issues of higher education such as the paucity of high-quality teachers, inadequate infrastructure of the universities and more specifically their libraries, and the poor quality of Educational Resources utilized at the various universities and colleges. One of the many steps NKC recommends to address these pressing problems is to increase the amount of Open Educational Resources (OER) and Open Access (OA). If these goals can be accomplished, the easy and widespread availability of high quality educational resources will drastically change the paradigm of teaching for the better and improve the quality of education for all of our students. In addition, Indian students will have access to previously inaccessible information as well as the knowledge on how to access *global* educational resources.

The Education system has to come out of its age-old tradition of teaching and learning, if it has to progress and come to the state of active and joyful learning in multi-cultural context of Globalization. The technological innovations and interventions through satellite made the globe a village like and connected every part of the world through inter and intra networks. The present world can be best described as a Global knowledge society. To meet the increasing educational demands of growing population of the society, it is necessary to utilize the potential of Information and Communication Technology in pedagogy. The accumulation of knowledge in the cyber age is as significant as its dissemination. To keep with the growing pace of knowledge explosion, the facilities to get access, deliver, communicate and disseminate the knowledge are necessary to become lifelong learners. As the world moves inexorably towards adopting a knowledge currency, India has the

opportunity to participate in the ICT movement by introducing various reforms in all sectors and education is not an exception. The National Knowledge Commission in India (NKC) has recommended increasing the amount of Open Educational Resources (OER) and Open Access.

The vision behind creating OER is to lower the cost of educational materials, develop innovations and improve the quality of content. There are many web platforms which provide you with the best OER sources. In our previous articles we've covered information about best OER search engines as well as OER tools. In India, there are significant initiatives for creating open educational tools and resources. However, all of them are directed towards OER in the basic sciences and engineering sciences areas. Some of the OER tools which are developed in India are presented below.

3. NPTEL

One of the major programs in India is the National Program on Technology Enhanced Learning (NPTEL). The NPTEL project is being carried out by seven Indian Institutes of Technologies (IIT's), the Indian Institute of Science, and other premier institutions around the country and being funded by the Ministry of Human Resource Development. The NPTEL objective is to enhance the quality of engineering education by developing curriculum-based video and web courses for the students. Faculty from these various institutions are involved in developing their classroom course material in electronic form. Currently, the program has 120 web based courses and 115 video courses in the core sciences, computer science, civil engineering, electrical engineering, electronics and material engineering. The NPTEL also provides an opportunity for teachers and students from rural areas to learn from these high quality lectures and improve the quality of teaching in these rural colleges. NPTEL also provides you with printable materials on their website.

4. Ekalavya

Another significant development in open educational resource project is the Ekalavya project launched by IIT, Bombay. In this project, the content is developed in various Indian languages and is distributed through the internet. The Ekalavya project has also developed an Open Source Educational Resources Animation Repository (OSCAR) and provides web-based interactive animations for teaching various concepts and technologies. OSCAR provides a platform for mentors/professors to suggest ideas for animation and for developers/students to create content based on the suggested ideas and guidance. Funding for the Ekalavya and OSCAR project comes mainly from private industry.

5. A-VIEW:

A-VIEW (Amrita Virtual Interactive e-Learning World) is an award winning indigenously built multi-modal, multimedia e-learning platform that provides an impressive e-learning experience which is almost as good as a real classroom experience, developed by Amrita e-Learning Research Lab. It has developed a user-friendly video conference software that helps teachers deliver live interactive lessons online. This app includes many great features like multi-user interaction, PowerPoint animation, recording and playback, video sharing, polling, quizzes, etc.

6. E-Grid

E-Grid is one of the main Open Educational Resources initiatives of India that develops and maintains pedagogically sound and refereed Educational Resources in identified subjects. Subject specific portals are developed and these portals are governed by subject experts within the program. This project is supported by the Human Resource ministry at IIIT, Kerala. Currently, this program also offers open Educational Resources only in the sciences and engineering sciences. It also gives estimated costs of developing web based and video course material for various educational levels.

7. National Knowledge Commission:

The National Knowledge Commission is a high-level advisory body to the Prime Minister of India, with the objective of transforming India into a knowledgeable society. NKC's main focuses are access to knowledge, knowledge concepts, knowledge creation, knowledge application and development. A major new project was initiated and implemented in collaboration with Maharashtra Knowledge Corporation Limited (MKCL) and the Indian Consortium for Educational Transformation (I-CONSENT). It aims at developing and field testing electronic educational material useful for all stakeholders: parents, teachers and students within a fourfold framework: information, activity, creation and interaction. Firstly, web based materials have been identified, downloaded and edited to make it suitable for Indian school system. Secondly, part of the material developed at Homi Baba Centre for Science Education (HBCSE) over the last 30 years has been modified taking into account the changed curriculum and new pattern of school education. Thirdly, some useful material has been developed in joint workshops of practicing teachers, teacher educators and popular science writers. The material is in different formats like story, cartoon based presentation, question answer form, skit, etc. The material so developed will be made available to all the stakeholders through

MKCL in the distributed classrooms spread all over the state.

8. National Institute of Open Schooling

The National Institute of Open Schooling (NIOS) (also called the National Open School) is an autonomous organization dedicated to improving the educational system of India. It provides people with numerous Vocational, Life Enrichment and community oriented courses besides General and Academic Courses at Secondary and Senior Secondary level. In the library menu, it allows you to search for all the digital information about education and offers e-books, audio cassettes, compact disks, etc., relevant to the content.

9. National Repository for of Open Educational Resources (NROER)

The Ministry of Human Resource Development (MHRD), Government of India has launched a National Repository of Open Educational Resources (NROER). The development of it has been a combined effort of the Department of School Education and Literacy, Ministry of Human Resource Development, Government of India, the Central Institute of Educational Technology, National Council of Educational Research and Training and Metastudio, which is the platform that hosts the Repository.

The Vision for India Higher Education is to become the pioneer in 2030 that is not just the best in the world, but the best for the world for delivering social, economic and intellectual value par excellence. By 2030, India will be amongst the youngest nations in the world. With nearly 140 million people in the college-going age group, one in every four graduates in the world will be a product of the Indian higher education system. (FICCI, 2014)

MOOCs Initiatives in India: A Path towards Universalizing University Education MOOCs are going to be a revolution in the field of education, especially higher education in India as the existing political commitment and good governance support the realization of the vision in the coming years. As Indian scholars are known as best-in-class knowledge creators, problem solvers and process managers, who also display deep social, cultural and ecological sensitivity, are collaborative leaders and responsible citizens.

India is an acknowledged leader in providing large-scale affordable access to high-quality university education and has emerged as a role model for other developing economies. In order to realize the goals, a transformative and innovative approach is planned across all the levers of higher education: from curricula and pedagogy to the use of technology to partnerships, governance and funding. The HRD Ministry,

Government of India has recently announced a Campus Connect programme to make 21,000 colleges and 4.2 lakh classrooms Wi-Fi enabled giving access to academically relevant websites to around 1.5 crore students. As per this programme, all the buildings of universities that have 1 Gbps bandwidth will be made Wi-Fi enabled.

While India initially embraced the internet with a degree of ambivalence, there was tremendous enthusiasm among dial-up users and an estimated 60% of internet users were still regularly accessing the internet via the country's more than 10,000 cyber cafes. When it came to high-speed broadband access, however, there was a reluctance to adopt what was on offer, especially within the corporate sector, and the growth of broadband remained relatively slow for some time. By mid-2012 there were around 14 million fixed broadband subscribers – a lowly penetration (by population) of slightly more than 1%. In the meantime, mobile broadband technologies were starting to attract considerable interest in India. Having paid large licence fees on the back of the government's spectrum auction in 2010, the operators were keenly promoting their mobile data services. Significant network rollouts had been completed and there was no doubt that this was accelerating the adoption of broadband.

An India specific MOOCs (Massive Open Online Courses) platform 'Swayam' (Study Webs of Active-Learning for Young Aspiring Minds) indicating self learning, was launched in 2014 and is completely free of cost and also promises to offer top quality courses in a number of Indian languages. IITB has launched three MOOCs in May (2014), an Introduction to Computer Programming Part 1 and 2, the third one is on Thermodynamics. The platform of choice is, unsurprisingly, edX with IITB being a member of the xConsortium as announced by edX in 2013. The three MOOCs by IIT combined have attracted 35,000 enrolments which is decent though far from outstanding taken the demand for MOOCs in India alone (and of course worldwide) into account.

IIT, Kharagpur is preparing a blueprint for the National E-Library project that will collect, preserve and disseminate all the intellectual output of our country and cater to the needs of the students spanning from school level to PG level and provide free access to quality e-contents and education material to students at primary, secondary and higher education level.

10. MOOCs and Emerging Challenges in India

One of the main concerns regarding MOOCs initiative moving forward in India is the necessity to develop high quality technology, diversification and investment.

Technological infrastructure and readiness need to be developed to provide better Internet access for the country's population. This can happen through both efforts toward worldwide connectivity and increased support of mobile technologies.

MOOC providers need to consider the educational needs in various countries and provide diverse options to meet them. India being a widely diversified country having multicultural societies, MOOCs requires to address this issue in a more realistic way.

Investment, Finally, MOOC providers need to make an investment in India by partnering with local institutions to create courses that are relevant and accessible to the Indian population. Even Indian Government needs to liberalize conventional regulations and restrictions and encourage public private partnership for creating MOOCs in this country. In many ways, India is a perfect proving ground for MOOCs.

Additionally, ensuring a high level of quality is a challenge in itself. Emerging initiatives internationally and nationally are offering quality educational content as open resources. It is vital for India to leverage these initiatives as a readily available, economically viable source of quality content for adoption and adaptation, as well to serve as a model for indigenous content production.

■ **Institutionalizing the production of quality content.** A set of key institutions should be selected and experts representing diverse knowledge areas like agriculture, engineering, medicine, arts, humanities, science, etc. to develop standards-based, customizable, high quality content and make it available not only for Indian institutions but also for global consumption. There should be a high priority for developing webbased, multimedia, interactive open content repositories for various subjects and in different regional languages.

■ **Promotion of e-Curriculum development:** This effort should build adoption support for content delivery through training teachers at various universities around the country. Centers at specific institutions should be identified so that the faculty of those institutions will eventually own, modify, and expand these OER repositories.

The *e-content* and *curriculum* initiative need to be in the areas of **agriculture, teacher training, basic and applied sciences and engineering, technical education, liberal arts and social sciences, communication skills, ethics and values, public health, and high end skills including management.** In these areas, some of the course material needs to be developed in different regional languages. (Ref: Working Group on OER, Govt. of India)

Creation of network-enabled delivery infrastructure

Along with the national initiative for content, India must develop a network enabled delivery infrastructure with the focus on two primary

areas; access and delivery. For access to the network, high bandwidth connections across institutions and a national backbone that provides advanced networking capabilities are major requirements. Thus, there is an urgent need to establish an Indian Research and Education Network/ Knowledge Network where each educational and research institute is connected by at least 100 Mbps or 1Gbps. Additionally, connectivity to global networks is essential. The centers where the broad band connectivity is available should use Triple Play broad band services. Currently, the Maharashtra Knowledge Corporation (MKCL), Pune, has recently deployed this technology on experimental basis along with BSNL. Academic Autonomy and Political Authority in Governance of Higher Education.

Pedagogical considerations and teacher competencies:

Pedagogical considerations and teacher competencies are very vital in MOOCs platforms. To cope with the relatively novel MOOCs scenario of online learning, teachers need professional development to explore and define relevant teaching practices. Some attributes to be considered for professional development of online teaching include (Capper, 2002):

- access to teaching-learning resources (rural-urban, 24-7)
- uniform quality in content
- online teacher control & interactivity
- sustained, ongoing professional development
- visual images [recorded footage] of teaching.

Accreditation of online learning touches on different aspects, the course structure and design, course materials, faculty, to name a few. At present, most OCWs do not confer a degree. Academic performance in MOOCs should also include assessment before awarding a formal academic qualification. It is part of the responsibilities of teaching staff to help in assessing learner performance. (Liu et al., 2010).

In order to realize the goals of higher education, academic autonomy is very much essential. Political authority has to play positive role in ensuring academic autonomy in the universities. However, higher education under the umbrella of the government faces various challenges and thereby the autonomy is under risk. There is a need to protect the academic autonomy from political authority for the quality education.

10.1. Quality Assurance Practices in Higher Education

It is not the quantitative expansion of higher education institutions, but the quality inputs and standards of those institutions can only produce better human resources. Several systems for quality assurance in higher education have evolved over the years across the world. In India, the establishment

of NAAC and its process of accreditation is a step in this direction. It is necessary to review and appraise the present quality assurance practices and their credibility in creating world class institutions.

10.2. Trends and Reforms in Financial Sustainability in Higher Education

The grants provided by the government are realised as insufficient in several countries, especially developing countries for the management of higher education. Understanding the current economic realities, it is imperative that higher education institutions need to be self sustained by generating corpus through research and academic programs. Initiations are already made on the lines of privatization of higher education and there is need to review such steps in the context of equity and equality and quality of higher education.

10.3. Global Higher Education

Several countries have reformed their higher education in align with the global changes. World class institutions are establishing their campuses across the world and offering educational programs. Collaborative international academic programs are increasing day by day in most of the universities and there is a demand for such programs as well. However, modalities', establishing international standards and acceptance and recognition of such programs still needs to be streamlined.

11. Conclusion

Knowledge economy is the sustainable mode of development in most of the countries in the world as knowledge is the currency of the modern world. Human resources are vital in making knowledge economy a reality as their innovations and knowledge creation enable the country to advance in all fields of economy. As knowledge doesn't have boundaries, human resources need to be global masters with knowledge, skills and multicultural competence. MOOCs is a powerful platform to disseminate the knowledge developed collaboratively across the globe and prepare human resources for Global requirements.

Online platforms and ICT tools have helped take higher education to millions of deserving students in far-flung areas who would otherwise have no access to university education. Online education has become the first port of call for many students who were earlier left out of the higher education system, or had to settle for lower quality alternatives. The MOOCs model made it possible for the country to provide a quality education to the masses despite poor faculty-student ratios. Students today

increasingly learn from leading faculty at elite institutions beyond the four walls of their classrooms as top-tier institutions have donned the mantle of being content generators. Professors collaborate across universities to collectively create and distribute for-credit curriculum for an online semester.

Technology has not only been instrumental in addressing the demand-supply gap for quality education, but has fundamentally changed the nature of several educational processes. Gone are the days when students had to gather in a large hall only to hear a lecture. Today, classroom lectures are pre-recorded and uploaded to be accessed by students at their comfort. Class time is instead used for creating more in-depth learning experiences through group activities, problem solving and interactive learning. Online analytics provide faculty with data on how and at what pace each student is learning, enabling them to provide personalized support to aid student learning outcomes. The model also acts as a great democratizer, allowing students to learn at their own pace – for instance, slow learners can go over certain content and exercises multiple times with special tools to aid their learning. Finally, the hybrid model (where part of the program is taught online and part in person) has become particularly popular among adult and working professionals looking to gain additional credentials. The model provides them with the flexibility to access course material as their schedule permits. In short, technology is a powerful tool to solve the three India's pressing problems – access, equity and quality.

In this modern era of access to vast quantities of information daily, a person should reasonably acquaint oneself with an opportunity to learn. In the Internet age, a person who is eager to learn should have the opportunity to learn, at least online.

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MOOC phenomena in Japan : JMOOC and OUJ-MOOC

Tsuneo Yamada

1. Introduction

It may be said that 2013 was the first year of MOOC in Japan. The two main trends in the MOOC movement emerged in the country. After the spring of 2013, Japanese top-class universities, such as University of Tokyo and Kyoto University, started MOOC projects by joining international consortia, such as Coursera and edX. Japanese universities and corporates launched Japan Massive Open Online Course (JMOOC, <http://www.jmooc.jp/en/>) Consortium in November 2013 as a regional MOOC consortium. Both challenges have evolved in each niche and increased the numbers of courses and learners. As the movement is still continuing and progressing and the final reports and evaluations have not been published yet, the author shows some snapshots using the publicly known data and facts, especially focusing on the domestic projects, JMOOC and OUJ-MOOC.

2. Backgrounds

2.1. Definition of MOOC and related phenomena

“MOOC” is an abbreviation for “Massive Open Online Course”. In the traditional definition, MOOC is an (1) open and free, (2) online course in the Internet, in which (3) the limited number of staffs manage several thousands and more of the learners by IT (machine) supports. A difference from OERs (Open Educational Resources) is that MOOC is a course, that

is, an education itself, and not a content sharing and delivery. MOOC should have functions for learner/community support, evaluation and certification. Operationally, the minimum requirement for “MOOC” is that the online course should be open and free for everyone who wants to learn. In order to sustain the services, MOOC providers examine various business models, in which contain some proprietary services. In the North America, some papers and reports discussed the hype for “MOOC” was over (for example, Metros, 2014); in other regions, regional MOOC consortia are launching and the expectation for MOOC is still high. In Japan, while some innovators regard MOOC as a new sustainable model of open education, the other expect it as a destructive creator on higher education and lifelong learning. On the other hand, the traditional HE/LLL institutions consider it as a new phase of educational reform and teaching improvement using ICTs.

2.2. OER movements as a background in Japan

Originally, open education in Japan has been promoted in the framework of lifelong learning. The Open University of Japan (OUJ), for example, is supported by the Bureau of Lifelong Learning Policies under the Ministry of Education, Science, Technology and Sports (MEXT). From the time of its establishment, OUJ has broadcasted course content for free from the terrestrial/satellite TV and radio stations while the printed materials and packaged materials were in a proprietary fashion.

Stimulated by the MIT OpenCourseWare Initiative of the early 2000's, Japanese traditional universities launched the Japan Open Courseware Consortium (JOCW) in 2005 and member organizations began preparing for open courseware (OCW) sites. A few years later, the National Institute of Multimedia Education (NIME, currently, the Center of ICT and Distance Education, OUJ) started a cross-institutional search service for accessing various OERs, including JOCW content. Japanese OER movements were led by three entities, namely, JOCW, OUJ and Cyber Campus Consortium TIES (NPO CCC-TIES). CCC-TIES is a consortium of Japanese private universities and has built up a number of collaborative frameworks from the mid-1990 although the sharing of digital educational resources had remained inside the consortium (cf., Yamada, 2013).

2.3. Publicity

At the establishment of JMOOC, publicity through Japanese newspaper and broadcasting media was quite successful. One of the major (nationwide) Japanese newspapers, ASAHI Shimbun joined JMOOC and pressed it as the top headline news. Most of the broadcasting stations also

reported at the evening news. Before the event, neither open education nor ICT-enhanced education was popular in Japanese society. The impacts of MOOC were surprising and took a role of the catalyst in these fields. The initial success of PR activities induced the first acquisition of the massive registrants and various positive feedback loops. The publicity for overseas has not been succeeded yet. In “NIHONGO (Japanese language) Starter A1”, which was a JMOOC course for native speakers of other than Japanese, social networking services (SNS), such as Facebook TM and Twitter TM were used for it in addition to the Web page.

3. Policies

3.1. Government policy on MOOCs

The Ministry of Education, Culture, Sports, Science, and Technology (MEXT) has no clear policies on MOOC as of February 2015 although MEXT has interests on MOOC as a potential catalyst for the educational reform and teaching improvements in higher education. In FY 2014, MEXT outsourced a domestic and overseas survey on MOOCs to an NPO, Academic eXchange for Information Environment and Strategy (AXIES). In the future, by utilizing the report, MEXT may evaluate the effectiveness and reflect the results to the policy-making process.

4. Practices

This section shows several practices in Japanese regional MOOC, that is, JMOOC Consortium. In this country, MOOCs is still at the launching stage and we have not got any inclusive evaluation study yet.

4.1. Japan Massive Open Online Course (JMOOC) Consortium

Japan Massive Open Online Course (JMOOC, <http://www.jmooc.jp/en/>) Consortium is a “General Incorporated Association” in Japan, that is, an NPO/NGO. In November 2013 (legally, the press release was held in October 2013), in order to catch up the MOOC trends overseas, Japanese universities and corporates launched JMOOC as a regional MOOC consortium. As of January 2015, 78 Full member (Academic 37: Public 3: Corporate 38), 8 Special Contributing members and 9 Associate members joined. JMOOC is mainly maintained by membership dues and have not supported by public funding yet (cf. Table 1).

Table 1: JMOOC Membership (as of 31st January 2015)

Category	Attributes	Membership fee (JPY)	Number of Members
Full	Have priority to distribute JMOOC official courses	500K+	78
Academic	Universities/Colleges		(37)
Public	Governmental Institutes		(3)
Corporate			(38)
Special Contributing	Include JMOOC official platform providers	5M+	8
Associate	Academic societies and non-profit organizations	100K+	9
Total			95

According to the mission statement, the basic concept of JMOOC is to realize the MOOC platform which expands the individual values to socially sharable values through learning, in strengthening the private-public partnership for Japan and Asia.

As of January 2015, JMOOC had three official platforms, “gacco”, “Open Learning Japan”, and “OUJ MOOC”. “gacco” (<http://gacco.org/>) is an open edX-based platform managed by NTT DoCoMo and NTT Knowledge Square. “OUJ MOOC” is a multimedia e-textbook taste platform developed by CCC-TIES Consortium and managed by OUJ. “Open Learning Japan” (<http://open.netlearning.co.jp/>) is a domestic integrated learning support platform managed by NetLearning, Inc. The member institution which plans to launch a MOOC from JMOOC can choose one of the official MOOC platforms in considering the compatibility between course content and course management platform. They consider multiple platform strategy induces diversified learning strategies and pedagogies to cope with a wider range of potential learners.

In order to facilitate the agreements and collaborations among the members, under the executive board and the secretariat, JMOOC organized ten working groups, that is, Delivery platform WG, Flipped learning WG, International collaboration WG, Accreditation WG, Learning log/portfolio WG, Learner community WG, K-12 education WG, Corporate education WG, Business model WG and Publicity WG.

As of January 2015, the total number of the courses that the three official platform provided was 47 (including both the past and the planned) and the total number of the unique registrants (contained the repeaters among courses) was over 100 thousands (Table 2).

Table 2: Numbers of courses and registrants in JMOOC official platforms
(as of January 2015)

	OUJ-TIES (multimedia e-book/LMS/SNS)	Gacco (Open-edX based)	OpeN Learning Japan (Japanese domestic)
Total courses	4	34	9
Course running	3	12	0
Registration Open	0	11	1
In preparation	1	2	6
Over	0	9	2

4.2. OUJ-MOOC

As a founding member of JMOOC, the Open University of Japan (OUJ) developed two MOOCs in order to release them as the initial courses in April 2014.

4.2.1. Backgrounds

OUJ is supported by the Bureau of Lifelong Learning Policies under the Ministry of Education, Culture, Sports, Science, and Technology (MEXT) as the national center for lifelong learning in Japan. As a unique open university in this country, OUJ has contributed to Japanese open education and Open Educational Resources (OER) movements such as JOCW (Japan Open CourseWare, cf. Yamada & Yoshida, 2010). The basic questions on MOOC, such as “can MOOC be a new sustainable model of open education?” and “will MOOC show a new delivery model of higher /tertiary education to reach potential lifelong learners?”, were also essential to OUJ. In order to examine the effects and influences, OUJ decided to launch the pilot MOOCs as a MOOC platform provider (cf. Yamada, Okabe, Hori & Ono, 2015).

4.2.2. Technology

The architecture of the OUJ MOOC platform is shown in Figure 1. Considering the diversity of users’ IT environments, we adopted a combinations of e-textbook (specifically, e-pub 3.0 and iBook), traditional LMS (Learning Management System, specifically, Moodle) and several social networking services (SNS). As some functions of e-textbooks can be used without connecting with the Internet, it was considered as a better solution especially in developing areas. We chose “CHiLO Book” system (Hori, Ono, Kobayashi & Yamaji, 2013), which was developed by CCC-TIES. Each learner visited the online store or our server to download a series of the e-textbooks and studied independently using an

epub viewer or a web browser. The results of various quizzes and self-checks were stored automatically in the database of LMS. In addition to Moodle, a couple of SNS such as Facebook™ and Google™ were used for user identification and learner community maintenance. Using “Group” function of Facebook™, while the provider can identify each user, the learners can ask questions, exchange ideas and share the knowledge among the community. We had two versions of e-textbooks, that is, video-embedded version and video-streaming version. In the former version, while the users watched videos without the Internet connections, it took more time to download. In the latter version, we used YouTube™ for video delivery. Using the “Mozilla” Open Badge system, we issued a “small” badge in each lesson and finally gave her/him a certificate when had collected 10 small badges (cf. Yamada, 2014a: Hori, Ono, Kobayashi, Yamaji, Kita & Yamada, 2014).

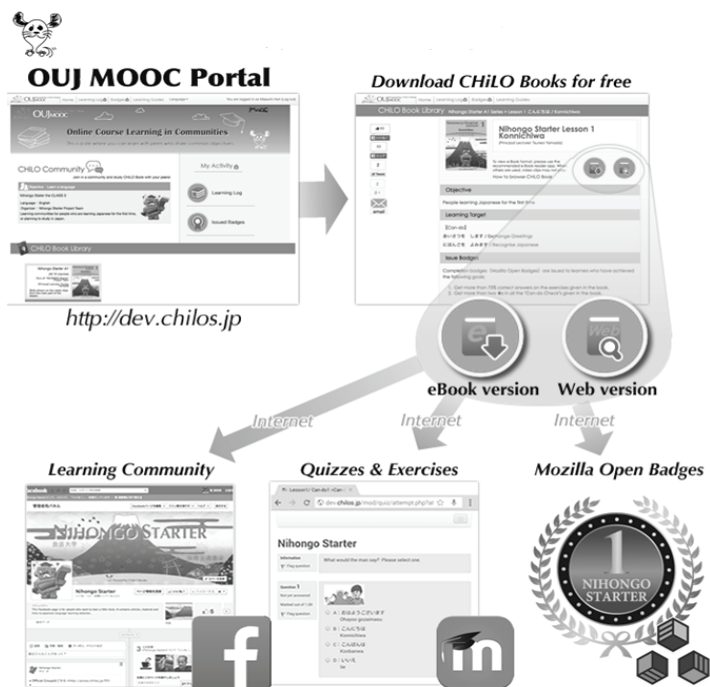


Figure 1: OUJ MOOC platform powered by CCC-TIES “CHiLO Book” System:
The concept (cf. Yamada, 2014a)

4.2.3. Courses and course materials

OUJ launched two pilot courses in April 2014 and added the third course in January 2015. “NIHONGO STARTER (A1)” (Principal Lecturer: Tsuneo Yamada, Professor, OUJ; Co-directed by OUJ and JF course team) was an English course for non-native speakers of Japanese who were preparing to

study in Japan. International students who had no experiences of Japanese language learning could learn basic Japanese in English, which took up various topics and scenes that students may encounter when they stay in Japan. “Computer System” (Principal lecturer: Yoichi Okabe, President, OUJ) was developed using the course materials of his TV broadcasting regular course of OUJ and only Japanese language version available. “Information Network for Beginners 1 (Principal lecturer: Shinji Hioki, Professor, Tezukayama University) was also a Japanese class and a flipped classroom was prepared on site. All courses were free of charge.

Table 3: Courses provided from the OUJ-MOOC platform in FY2014

Course	Lecturer	Features	Term
Computer System: (Japanese)	Yoichi Okabe (President, OUJ)	Regular Course (15 lessons) , Based on OUJ TV regular course	Term 1 (full asynchronous): 14th Apr – 30 th Sep Term 2 (semi asynchronous) Part 1 “Logic Circuit”: 1 st Oct – 4 th Nov Part 2 “Computer Design”: 5 th Nov – 16 th Dec
NIHONGO Starter A1 (English)	OUJ+JF Project Team (PI: Tsuneo Yamada, OUJ)	Short Course (10 lessons), CEFR-oriented, competency-based curriculum	Class 1: 14th Apr - 18th May Class 2: 2nd Jun - 7th Jul Class 3: 4th Aug - 13th Oct Class 4: 3rd Nov- 23rd Dec Class 5: 12th Jan - 23rd Mar 2015
Information Network for Beginners 1(Japanese)	Shinji Hioki (Tezukayama Univ)	Short Course (7 lessons), w/ flipped classroom on site (admission fee required)	(full asynchronous) 13 th Jan – 2 nd Mar 2015 (Flipped Classroom, 7 th Mar 2015)

4.2.4. Curricula and instructional design

Each curriculum was edited by the lecturer(s). In most cases in JMOOC, the lecturer(s) participated in as a content specialist and gave video lectures as a real speaker. In other cases, multiple content experts authored texts and scenarios and a narrator with an avatar explained the content. The course development (including instructional design) was often outsourced to the platform provider. Needless to say, in some cases, the lecturer(s) designed and developed the course materials by themselves.

As of February 2015, the pedagogical characteristics of the JMOOC courses, such as volume, curriculum standard, lecture style, content delivery package and learner support functions, were various and we have not completed a survey on those yet. In each MOOC, instructional designs and educational tools which were based on different learning theories were tested but most of them were still at the pilot stage. The basic design was often a traditional knowledge transmission with fixed sequential structures.

As an example, the author shows the case of OIJ-MOOC “NIHONGO Starter A1” (Yamada, Okabe, Hori & Ono, 2015). The Japanese language course was based on JF Standard for Japanese-Language Education (http://jfstandard.jp/pdf/jfs2010_all_en.pdf). The Standard was developed by the Japan Foundation (JF) and had common definitions for six levels of language proficiency with CEFR (Common European Framework of Reference for Languages). It was a short course of 10 lessons and corresponds to the first part of Level A1 of the JF Standard for Japanese Language Education. Each lesson had 2-4 “Can-do” (competences). The estimated learning time was 45 minutes per lesson. The course texts were authored by Ms. Aki Shinohara, Ms. Sachi Habuki and Ms. Fumie Yanashima, who are the lecturers and experts at the Japan Foundation.

In “NIHONGO Starter A1”, we had five classes in a year (April 2014 to March 2015) with the same curriculum and course materials. As of 1st February 2015, the total number of the registrants of Class 1 to 5 was 3642 (Table 4, include repeated registration among classes). In Class 1, 2 and 4, two lessons were delivered per week by regulating the access to course materials while one lesson per week in Class 5. In Class 3, all course materials were accessible from the beginning and the registrants could take them in her/his own pace (self-paced).

Table 4: Course schedule and the numbers of the registrants of “NIHONGO Starter A1” in FY2014 (April 2014 to March 2015, as of 1st February 2015, Yamada, Okabe, Hori & Ono, 2015).

CLS	Period	Pace-making	No. of Registrants [Moodle/Facebook]	No. of Certificate holders (“Big Badge holders”)
1	14 th Apr- 18 th May	2 lessons /week	-/467	140
2	2 nd Jun - 7 th Jul	2 lessons /week	-/882	
3	4 th Aug -15 th Oct	Self-paced	-/1475	
4	3 rd Nov-23 rd Dec	2 lessons /week	353/249	
5	12 Jan - 23 Mar 2015	1 lesson / week	120/96	
		Total	473/3169	

The registrants learned in her/his style. Some learned independently in their own paces; the others studied together in virtual group activities. In order to ask questions to the course team and to have discussions among the participants, they could utilize both the class page at the FacebookTM and the forums at Moodle. From Class 3, we prepared Spanish and Arabic language forums in addition to English language forum at Moodle.

Reflecting both the results of quizzes in each lesson and the performance at various social interactions online/offline, the learners were asked to evaluate her/his own achievement by marking the “Can-do” check at the end of each lesson. Using the “Mozilla” Open Badge (<http://www.>

openbadges.org/), we issued a “small” badge in each lesson and a “big” badge when he/she has collected 10 small badges. Furthermore, we issued an electronic certificate (Figure 2) to each “big” badge holder on her/his request in free of charge.



Figure 2: Example of the certificate

4.2.5. Learner characteristics and total achievement scores

Demography of the participants depended on the content and characteristics of each course. As the two courses on information sciences were in Japanese, most of the participants were from Japan and used Japanese language environments. Although “NIHONGO Starter A1” was in English and expected the registrants from English-speaking countries and environments, many learners joined from the countries in which Spanish and other languages than English are used as official languages (Table 5ab). The potential learners in these countries had been regarded as difficult to reach by the researchers and Japanese language education institutions (cf. the Japan Foundation, 2013), and the MOOC showed an effective way as a substitute of traditional methods.

Table 5a: The number of the “fans” of “NIHONGO Starter A1”
(As of 1st February 2015, Top 15, by country)

Country	Fans
Mexico	1,296
Japan	538
Colombia	450
Cambodia	449
Panama	401
Venezuela	237
Brazil	212
Philippines	185
Serbia	173
Indonesia	167

Egypt	165
Vietnam	164
Argentina	157
Spain	146
United States of America	132

Table 5b: The number of the “fans” of “NIHONGO Starter A1”
(As of 1st February 2015, Top 12, by language)

Language	Fans
English (US)	2,200
Spanish	2,015
English (UK)	600
Japanese	471
Spanish (Spain)	419
Portuguese (Brazil)	187
Vietnamese	104
Indonesian	99
French (France)	93
Arabic	79
Russian	61
Bulgarian	55

Comparing with other courses in JMOOC and with other OUI-MOOC Facebook TM pages, both the ratio of younger generation (18-24 and 25-34 years old) and that of “women” were higher (Figure 3, Yamada, Okabe, Hori & Ono, 2015). After storing the learning records and logs more massively, we will analyze the relationship between learner characteristics and course themes and materials more minutely.

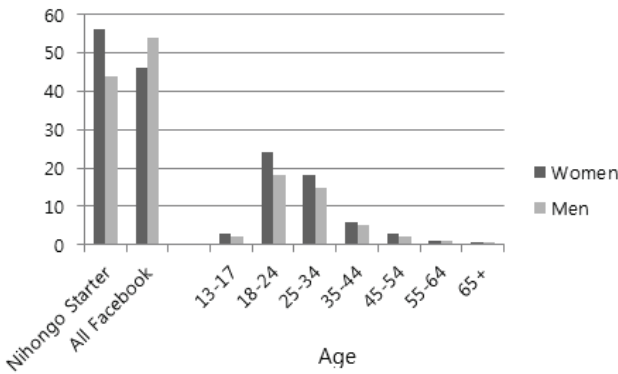


Figure 3: The demography of the “fans” of “NIHONGO Starter A1” in Facebook TM (n=6209, as of 7th October 2014). The vertical axis shows the percent to total unique persons (cf. Yamada, Okabe, Hori & Ono, 2015).

4.2.6. Accreditation

JMOOC Consortium authorizes their official courses. Only authorized courses can use JMOOC logo and the official JMOOC platforms, and are registered at JMOOC Portal. As of February 2015, the standards and criteria for the authorization were not open to the public.

In each course, the lecturer(s) have the authority to grant a certificate except the limited number of the exceptions. Most of the certificates were signed by the principal lecturers (cf. Figure 2); the certificate of “Information Network for Beginners 1” (Shinji Hioki, Tezukayama University) for the flipped classroom were signed by the chancellor. As of February 2015, most of MOOCs were independent from the accreditation and certification processes at the formal courses and the credits were not transferable each other, even if they were provided by the same institution.

5. Issues & Future Direction

As of February 2015, MOOC was still at the launching stage and any sustainable model for MOOC has not been established in Japan. The visions on MOOC that the stakeholders and the communities had were various. Some expected MOOC to take the role of a creative destroyer to open up the era of real open education in HE/LLL; the others considered MOOC is a kind of test-bed for the next-generation ICT-enhanced education. The reasons and ranges that they accepted the openness were various. In this section, several issues, which most of us shared but had not reached to any solutions and agreements among us, were discussed.

5.1. The status quo of MOOC phenomena: Is it over?

In the North America, some papers and reports discussed the hype for “MOOC” was over (for example, A Gartner Report, “Hype Cycle for Education, 2014”, cf. Metros, 2014). From a technical viewpoint, no clear differences between MOOC platforms and traditional LMSs are found except the scalability and learning metrics and analytics. In cloud computing environments, the technical differences will be less detectable. A MOOC platform and course should be designed to cope with massive registrants but it is another issue whether they can get actually the massive learners and “big data” as a result. With the increase of the MOOCs provided, the variance of the size and scale of MOOCs are also widening. The sizes of some “MOOCs” were smaller than those of regular (private) online courses in distance universities. While some MOOC providers accept some proprietary business models for the sustainability, the others are strict with “open philosophy” and more OER-oriented (that is, they try to open their content in sharable and reusable fashions).

MOOCs were often operated in the combinations with “flipped classroom” and considered as an important element in blended approach. In these cases, MOOC is a part of learning space and more comprehensive framework is needed to describe learning activities and to evaluate the outcomes.

As a whole, the distinction between MOOC and SPOC (Small Private Online Course, i.e., traditional online course) are more ambiguous both technically and operationally and it is more difficult for us to have a typical image on MOOC. However, we think the essences “MOOC” proposed, that is, “big data and learning analytics”, flipped classroom as a blended approach, electronic textbooks and digital badge (Eaton, 2012), have not lost but expanded to various contexts. Now, we need more comprehensive model to describe and understand the new phase of the trend (e.g. Abel, Brown & Seuss, 2013; cf. Yamada, 2014b, “Paradigm EX”).

5.2. Big data: How to realize the massiveness

One of the essential features of MOOCs is to collect and analyze big data and to utilize the results for the personalization of the courses and guidance. However, most of the issues still remain in education fields. They are how to describe and store various learning activities (metrics), how to extract the knowledge using learning analytics and how to reflect the findings to each personalized learning context. In Japan, data sharing and learning analytics are the most important areas which we should collaborate and concentrate our resources. In order to realize big data, both sharing of various resources in cloud environments and the federation of databases will be examined.

The legal solution on the use of personal data is another issue and new social agreements are indispensable.

5.3. International standards in e-Learning and digital publishing

While, as of February 2015, JMOOC had three official MOOC platforms, they had no clear interoperability each other. However, one of the purposes of JMOOC consortium was to provide high-quality MOOCs through the collaborations among member organizations. In addition, all of the platforms still had various functions to be developed hereafter, such as tools for learning metrics and analytics. In addition, the co-use of digital textbook and LMS and the federation of the databases and repositories were also such examples. We examined how to participate in new international standardization activities on e-Learning and digital publishing, such as EDUPUB (the International Digital Publishing Forum (IDPF), cf. <http://idpf.org/edupub-2013-report>), Experience API (Advanced Distributed

Learning (ADL), <https://github.com/adlnet/xAPI-Spec/blob/master/xAPI.md>) and Caliper Analytics (IMS Global Learning Consortium, <http://www.imsglobal.org/caliper/>), and how to utilize the international standards for our missions because our platform policy includes the concept of “joint”.

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A case study of MOOC at KNOU: KNOU MOOC for knowledge sharing

Taerim Lee

1. Current Status of MOOC at KNOU

Korea National Open University (from hereforth referred to as KNOU) is Korea's largest distance-learning institution with various OER contents, boasting a 40-year history of providing educational services that are tantamount to today's MOOC. However, these services have been provided within the conventional realm of distance education. Therefore with regard to introducing a MOOC platform, KNOU needs to make a new effort. In this context, KNOU has been paying close attention to the MOOC movement, which started to spread since 2012, and also trying to utilize it.

This paper will look into the preparation made by KNOU to implement the MOOC, and examine the MOOC programs at KNOU from a knowledge-sharing perspective in lifelong education. KNOU has duly noted the wide spread of OER both at home and abroad, which first began at MIT to share digital educational and lecture contents. Keeping abreast of such trend, KNOU that has at the forefront of providing life-long education to everyone, is working to formulate MOOCs tailored to the Korean context.

To improve the quality of higher and lifelong education at home and abroad, the role and responsibility MOOCs at KNOU should have as a hub for Korean MOOCs.

1. The KNOU vision and mission not only corresponds to the purpose of MOOCs, but also the way KNOU educational programs are

offered is almost identical to the way MOOC programs are offered. Since 1972 when KNOU was established as a national open university, it has successfully provided equal and open opportunities for higher education under the slogan of 'education for all, open to all'. According to the recent statistics, it has admitted 2.6 millions students and graduated 0.6 million in the period between 1972 and 2013. In a way, it has been offering OER through its own TV channel (OUN), open educational resources (OER) and e-Learning International Campus (eLIC) even before the notion of OER took hold in Korea.

2. As a hub for KMOOCs, KNOU has the best system and facilities to produce contents, and as a leading university in ubiquitous e-learning, it has As the leading ubiquitous university, KNOU is expanding its educational know-hows in online and mobile education through its outstanding educational infrastructure that extends to the far corners of the country. Particularly, KNOU is well positioned to ensure the highest quality of OER services and convert its educational contents since it boasts a vast array of online educational contents and an excellent learning management system (LMS) services.

The following are the purpose and goal behind introducing MOOCs at KNOU.

1. MOOC can help KNOU increase access to free higher education and lifelong education for all. In other words, it helps realize educational welfare by making higher and life-long educational contents, which are in high demand, more open to the public.
2. It expands opportunities in adult continuing education by making specialized OER contents. In short, it converts, make changes to and develop contents that will help improve the educational quality in liberal arts and humanities, and offers practical and tested educational contents that will empower capacity building.
3. By building a user-centered learning portal for smart learning, it explores strategies in light of smart learning, such as various distance and digital educational contents, a LMS infrastructure and a system that allows real-time interactions of users.

2. OER at KNOU (<http://oer.knou.ac.kr>)

OER is the acronym for Open Educational Resources, indicating free resources that can be used for the purpose of teaching and learning, evaluation without license restrictions. The OER movement seemed to have stemmed from the concepts of open knowledge, open source and

collaboration in the late 20th century. It is important to note that OER led to the emergence of OCW and MOOC. Moreover, as the concept of OER encompasses a wider scope of educational contents while OCW is about just making public educational courses, OER can have wider applications than OCW. KNOU is in the vanguard of the OER movement in Korea. It is partly because the mission of KNOU is different from those of other traditional universities, and what's more, the goals of KNOU OER program clearly state as follows.

- It is to offer middle aged people opportunities to empathize, feel moved and reach their potentials so that they can have a happier and more satisfied life.
- It helps middle aged learners to look back on their past and design their second phase of life.
- It offers a platform of sharing talents of those who are interested in social contribution.
- It provides a vast amount of practical contents developed by professionals in the field. Learners get hands-on knowledge accumulated by field experts.

A strength KNOU has over the OCW of other universities lies in the user-centeredness and openness of its OER programs. As have been pointed out in the first and second goals, the target users are middle-aged people in their forties and fifties. Their most needs are reflected on the entire contents to have them visit the site as often as they can. In addition with the open sharing of talents, outsiders can make and share their contents. This is one of the characteristics of the KNOU's OER website: learners can find educational contents made by KNOU as well as outsiders at the same website (e.g. [Figure 2.1]).



Figure 2.1: OER Website of KNOU (oer.knou.ac.kr)

There is a limit to which a university can produce many contents on its own and moreover, it is always possible for the university to secure every single content that meets the satisfaction of all. Therefore, such level of

openness should be factored in when preparing for a future MOOC service. At the moment, KNOU is offering its own contents as well as the contents developed by Mirae Asset retirement institute, KOCW, SNOW, YouTube, TED, KBS, the Korean Army headquarters, SBS and Korea Copyright Commission.

KNOU's OER website is structured as a content portal and categorized by topics, providers and areas. Topics include: 'starting lifelong learning', 'social participation', 'enjoying hobbies', 'business capacity-building', 'learning how to start a business', 'living a healthy life', 'outreach program participation'. Rather than approaching these topics from pedagogical perspectives, learners can navigate the contents to find down-to-earth information that meets their needs. This is one of the striking differences between KNOU's OER website and other OCW.

Among learning support components such as a webzine, CC guide and video mashup, one should pay close attention to the video mashup service. One of the problems with video services is copyright. KNOU seems to have found a solution in CC License. CC License or CCL is Creative Commons License, allowing the distribution of contents under certain conditions. It was made in December, 2012 and is being maintained by Creative Commons.

The OERs at KNOU (e.g. [Figure 2.2]) abide by the Creative Commons License and informs users loud and clear about the need they should adhere when using and sharing their contents. This is one of the ways to prevent the violation of copyrights in advance and should be taken into account when introducing a MOOC service.

Another service that is highly relevant to MOOC is the video mashup service. A lot of manpower and cost go into developing video contents, and it is hard to insert additional video contents into finished products. Therefore, it had been hard to use video contents, which were tailor-made, for other uses until the video mashup service. This service allows teachers or learners to edit and reinvent videos according to their needs. With this technology, one can edit a video OER and turn it into a whole new content without having to shoot a video.



Figure 2.2: OER CC Help Page

One way of doing this is to mash foreign videos on YouTube or Vimeo with Korean videos (e.g. [Figure2.3]).



Figure 2.3: Video Mashup Service of KNOU OER website

3. MOOC Contents at KNOU

KNOU offers OERs based on its rich lecture contents which were developed by Prime College. In 2012, 355 courses of Prime College were made public and in 2013, the number increased to 660 courses. On top of that, 125 KNOU courses are now being offered along with 564 courses of other educational institutions.

If the existing KNOU curriculum development environment and management system are applied here, they can be the solid foundation to run KMOOC which is built on the exiting KNOU learning management system.

Figure 3.1 is a comparison between OERs or MOOCs, which will be the underlying foundation of KMOOC, in terms of their goals, service providers and types. Figure 3.2 shows the organizational structure of Prime College through which KMOOC will be realized. There are three researchers working in the OER division at Prime College.

	OER (Open Educational Resources)	MOOCs (Massive Open Online Courses)
Goal	<ul style="list-style-type: none">• Opening of Educational Resources ※ Expanded concept of OCW(Open Courseware)	<ul style="list-style-type: none">• Generalization of alternative university education
Major Institutions	<ul style="list-style-type: none">• Domestic : KOCW of KERIS, KNOU, Hanyang Univ., Sookmyung Univ., etc• Public services(EBS, Seoul city etc) and Private services• International : MIT, Harvard, OU of the UK, etc	<ul style="list-style-type: none">• Consortium of several universities and institutions• International : Coursera(107 Universities, edX(29 Universities), etc.• Domestic : Asian 6 Universities including SNU participated in edX 2013
Service Type	<ul style="list-style-type: none">• Providing diverse content and individual learning through online	<ul style="list-style-type: none">• Practical student management and lecture related mutual-cooperation

Figure 3.1: Goal, Providers, and types of OER & MOOC

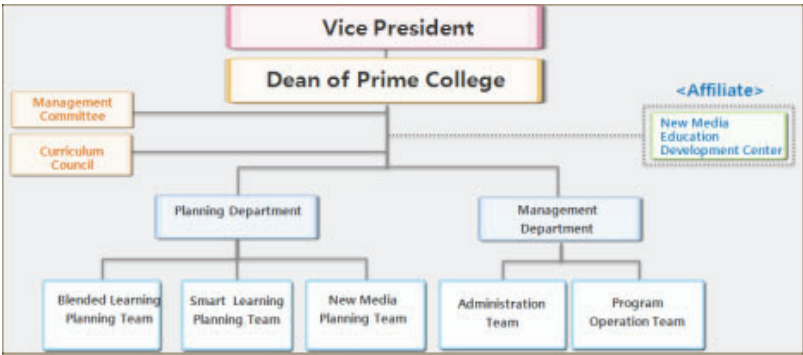


Figure 3.2: Organizational Structure of KNOU Prime College

Table 3.1 gives an overview of OERs that KNOU currently offers and Table 3.2 shows the status of publically available educational contents at KNOU.

Table 3.1: OER management at KNOU

Year	Semester	TV	Audio	Multimedia	Web	Prime College	Total
2008	1	277	173	465	165	238	2,850
	2	229	140	795	306	62	
	Sub-total	506	313	1,260	471	300	
2009	1	229	165	960	420	56	3,511
	2	319	209	840	245	68	
	Sub-total	548	374	1,800	665	124	
2010	1	384	120	906	201	22	3,306
	2	319	105	1,044	165	31	
	Sub-total	703	225	1,950	375	53	

Table 3.2: Status of publicly available educational contents at KNOU

Year	Semester	TV	Audio	Multimedia	Web	Prime College
		Available (Total)	Available (Total)	Available (Total)	Available (Total)	Newly available (Total)
2012	1	62 (930)	17 (255)	271 (4065)	7 (95)	7 (173)
	2	59 (885)	13 (195)	260 (3900)	6 (90)	
	Sub-total	121 (1,815)	30 (450)	531 (7965)	13 (185)	7 (173)
2013	1	61 (915)	10 (150)	282 (4204)	6 (90)	76 (1200)
	2	56 (840)	11 (165)	269 (3990)	5 (75)	
	Sub-total	117 (1755)	21 (315)	551 (8194)	11 (165)	76 (1200)
2014	1	57 (855)	9 (135)	293 (4395)	5 (75)	3 (405)
	2	47 (705)	7 (105)	290 (4350)	3 (45)	
	Sub-total	104 (1560)	16 (240)	583 (8745)	8 (120)	3 (405)

It can be said that KNOU is already providing MOOCs on its TV channel, OUN through which KNOU opens its contents to the public. In addition to its own broadcasting channel, it is also offering educational contents to the general public via Cable networks, digital satellite stations and IPTV.

There is another way through which KNOU shares its contents with the public. It is through its website. On average, KNOU develops and manages more than 3,000 educational contents in a year and they can be accessible on its web. Moreover, people who sign up on the website can have free access to one course.

KNOU as a pioneer in ubiquitous learning, is at the forefront of realizing the benefits of mobile learning by creating an environment for smart learning, which is the beauty of modern ICT. Building on its

success with the U-KNOU service, it has been offering 95% of its contents (more than 300 courses) via mobile since December 2008. With the U-KNOU, students can have access to their learning contents anywhere, anytime and while on the move. They pay a small monthly fee of 2,000 won to get unlimited access to the contents. This smart learning system was established in 2014 and is being monitored by KNOU digital media center and information computer center.

eLIC is an international educational exchange effort of KNOU, launched in 2007 to lead global educational content exchanges and collaboration. Figure 3.3 shows the eLIC (e-learning International Campus) site.



Figure 3-3: KNOU Global Campus Website

Almost all courses are delivered in English and the below shows the names of 15 courses under the eLIC program.

Table 3.3: KNOU Global Content

	Course Name	Language
1	Korean Culture & Art	English
2	Korean Culture & Art	Chinese
3	Korean Culture & Art	Japanese
4	Korean History	English
5	Korean History	Chinese
6	Economic Development and Economic Policy in Korea	English
7	Click Korean !	English
8	Understanding Korean cultural Values 1	English
9	Understanding Korean cultural Values 2	English
10	Korea modern history	English

11	Introduction to Computers	English
12	Statistics	English
13	Water Quality Test method	English
14	History of Economy	English
15	TV Koreanology	English
Total	15 courses	

4. Need for MOOC at KNOU

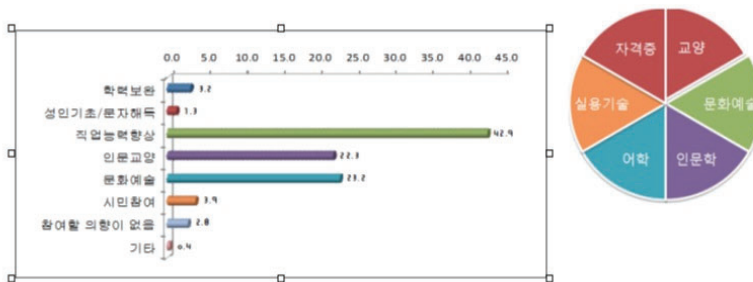
4.1. Personalization of OER

The OER services need to be offered while factoring in the following areas in order to maximize the benefits of open contents, based on the 2010 national survey result.

- Vocational training (job training, skills training, capacity building, etc.): 42.9%
- Culture and arts (cultural life, hobbies, health, leisure sports, etc.): 23.2%,
- Humanities (Conversational foreign language, fundamental laws, liberal arts, etc.): 22.3%

KNOU plans to personalize the development, delivery and management of KMOOC contents in accordance with the following survey result.

- Content perspective: focus on liberal arts, capacity building
- Management perspective: creating a mobile learning management system



• Source: 2010 KNOU policy research: Developing KNOU mid- and long-term development strategies

Figure 4-1: Result of Demand Analysis of KNOU distance education

4.2. Development Strategy for KMOOC content

KMOOC contents will be some of the existing KNOU educational contents and new contents created or offered to meet the high demand of learners.

➤ Liberal arts/humanities

KNOU's formal and informal contents will be covered and some of the KNOU regular programs will be gradually introduced to the KMOOC.

Table 4-1: Social Sciences and liberal arts programs

Stage	Area	Example
1	Liberal arts	World history, Basic computer, Life and environment, Human and society, Human and science, Leisure and life, human and education, life and health, Korean history, hobby and art
2	Beginner Social Sciences/ language learning	Introduction to business administration, Introduction to public administration, current affairs and essays, life and statistic, mental health, basic English, introduction to Chinese culture, use of the internet, fundamental laws, mass media and society, Film appreciation, modern nutrition and health, basic Chinese characters, basic French, basic Japanese

There are popular informal programs at Prime College such as citizens' law school, planning for old age, basic computer skills, communication and leadership and conversational English. Some advanced liberal arts programs from Prime College are American Culturism, theory and reality of negotiation, family science, lifelong education, bioinformation.

➤ Career building and applied academic discipline

Table 4-2: Undergraduate Applied Academic Disciplines (underscore for emphasis)

College	Department
Humanities	Korean language and literature, English language and literature, French language and literature, Chinese language and literature, Japanese language
Social Sciences	<u>Law, Public administration, Business administration, Economics, International trade, Media and film, tourism</u>
Life Sciences	<u>Agriculture, Home economics, Computer science, Information statistics, environmental health, nursing</u>
Education	<u>Education, Youth education, Early childhood education, cultural life</u>

- ❖ Prime College made some of the certificate courses open to public.
- ✓ Data processing engineer, word processor, office automation, reading guide, housing manager, babysitter, boutique manager,

realtor, Korean language teacher (immigrant education)

- ❖ Prime College's programs related to skills improvement and training are open to the public.
- ✓ Theories of marketing, Product and brand management, e-business, fashion marketing, database, ubiquitous computing

With the aforementioned educational programs, KMOOC will be able to meet the lifelong learning demand of people in Korea, help realize educational welfare and offer in-house training programs to workers who require to learn new skills. There is a need for further research in quality assurance of the KMOOC contents in order to maintain high quality and to build a foundation to grow into a global MOOC network.

4.3. Suggestions for MOOC at KNOU

There were following suggestions from a survey of the participants in KMOOC Workshop in September. First of all, they wanted to have tutors who are efficient with the use of social networking service, moderators for English lectures, course facilitators and constant feedbacks and more systematic curricula.

As for the delivery of courses, they would like to have clearer instructions, occasional encouragement to continue with their courses, subtitles to lectures in a different language and more structured curricula according to a learner's level. The respondents seemed to want an adequate number of lectures and homework assigned to each week.

As for the development of MOOCs, the respondents believed that there was a need to use tools to edit and combine videos, place subtitles, put a function to download a lecture script and put questions and answers real time and search Wikipedia and dictionaries. Lastly as for the funding of courses, they said the MOOCs should be able to secure the public funding, once its quality is guaranteed and controlled.

5. Korea MOOC

K-MOOC's launching was initiated by NILE(National Institute for Lifelong Education) with 10 Korean universities in October 2015. The list of contents and the names of participating universities are as follows;⁹⁾

5.1. Vision

Under the vision of 'University educational innovation through opening higher education system', Korean MOOC(KMOOC) could contribute to the equal opportunity and balance of potential among universities and to promote the human resources based on lifelong learning.

5.2. Progress

- Korean MOOC(K-MOOC) made debuted in 2015 establishes a basic business plan in February 2015, and is selected 10 universities with the total of 27 courses to participate in the trial operation at April. Participating universities should develop a best-in-class contents until September.
- The platform in which all the developing contents installed and learner connect and have a class, customizing 'Open edx platform' based on constitution of MOOC 'open and share'.
- After launching the K-MOOC 27 courses from 10 universities, visitor was about 472,237 and the number of applicants was about 56,281 per a month. The main participants were adult learners such as professionals in the field. The developing costs of an each content is an average 11,000 dollars and 10,000 dollars from government support with each university matching fund of 18,000 US dollars.
- The age distribution of K-MOOC Learners is that 33% of 20s, 21% of 30s, 22% of 40s, 12% of 50s, 4% of 60s, and 0.7% of 70s. And, in terms of level of education, group with below high school graduates was 21%, associate degree 5%, bachelor degree 47%, master degree 21%, and Ph. D was 6%.
- On behalf of using kit, among the 3026 learners 17% were using mobile phone, 69.45% were using personal computers, and 4.83% were using tablet PCs to take the course.
- Furthermore, the distribution of registered learners is like follows; 93.4% of the course learner got accessed into the course from South Korea, 2.89% from United States, 0.83% from Japan, 0.51% from Canada, and 0.4% from China.
- The top motivation of taking a course is intellectual curiosity and self-development capacity with 78 % of learners, 82% of them K MOOC courses are to be expected to be effective.
- When choosing a subject, following their interested fields(73%) was higher than considering reputation of the professor(4%) or a name of the university(3%).
- Also, 72% of the future demands for the K-MOOC lecture was variety of contents, and being able to exchange, communicate, and cooperate, between learners to create additional acknowledge through K-MOOC. According to this research, the fact that the demands of the learners are selected and taken based on very substantive motivation was found.
- After meeting with K-MOOC lecturers, great scholar was held in the offline campus at participated university and, and the certificate was issued under the name of the university with the name of the professor in certificate when the registered students has completed whole course,⁹.

5.3. Expected Effect

- The expected effects of the K-MOOC is to extend an equal educational opportunities for learner, and to have a chance to improve quality of higher education for a providers of professor and university headquarters. It could be used to expect for educational environment and the ecosystem, the effectiveness of creating an ecosystem for Korean MOOC.
- The K-MOOC Platform is largely composed of two parts, the LMS and the CMS. The LMS is a learning management system which is responsible for learners' registration, lifelong learning accounts, system taking and issuance of certificates. The CMS is a contents management service which is responsible for course offering, question setting, mutual interaction and learner management. It is conducting both new and correcting development of 450 files and revealing the source.
- The extended function of K-MOOC platform will be full translation of Open edX in Korean, establishing the Korean version of CDN to replace Youtube, developing extended video player (Xblock), simplified embellishing editor of WYSIWYG, introducing the plagiarism inspection system to prevent copying, developing Open API for mobile application, interlinking the lifelong learning compatible system, and managing the integrated learners' learning history data. Interlinking the domestic and international portal sites, social media accounts, and "lifelong education" OAuth; improvement on user interface, such as the design of the website and certificate, and user convenience; planning and promoting the system to extended the security for web access and fortifying the private data protection.

5.4. Application

- K-MOOC will push ahead through closer cooperation with ministry of education, national institute for lifelong education, which is the lead institute, and also with Korea education & Research information service, Korea council for university education, Educational Broadcasting System(EBS)
- The participating universities at 2015 that provide and operate lectures on the platform are total 10 including Seoul national university, Kaist, and etc., and plan to expand lectures and participating institutes every year.

Planning to encourage participating universities' autonomy and diversity to be fully respected and manifested in whole process.

The following diagram is the K-MOOC Governance organization where

the network between MOE of government and KERIS, EBS and NILE.

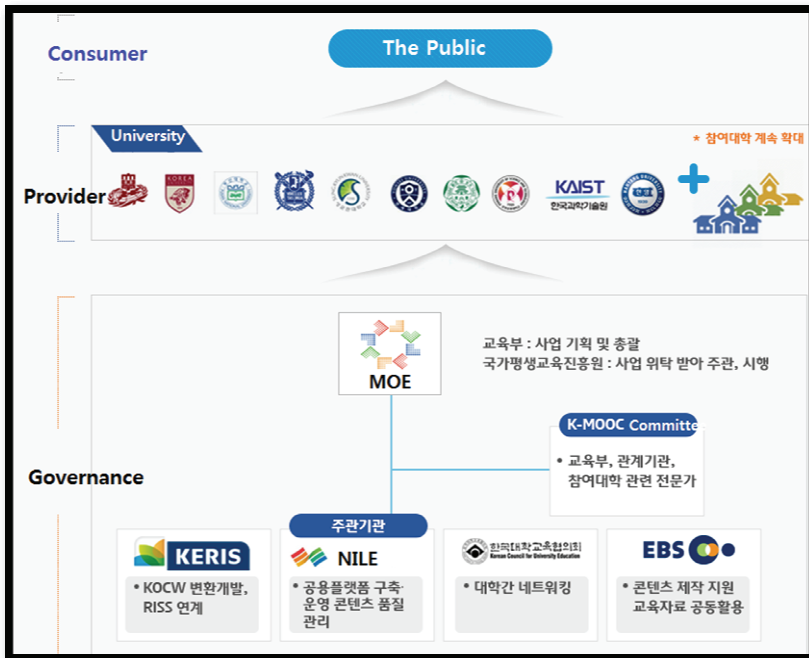


Figure 5.1: Configuration of K-MOOC

6. Future direction of KMOOC development

What will happen to our higher and lifelong education system when MOOCs become the norm? In a global paradigm shift characterized cooperation and competition, there should be national policy plans as well as action plan for policy implementation. Let's look at Korea's cases, first. In Korea, Seoul National University joined edX and Korea Advanced Institute of Science and technology became a member of Coursera and other MOOC platforms in 2013. Since then, they are making some of their courses open to the public, however, it is far from enough. On the contrary, other Asian countries are stepping up their efforts to embrace MOOCs. In November, 2011, EduKart was launched in India and in August, 2013, UCEO was created in Indonesia. Moreover, in the case of Japan, JMOOC was officially launched and is in full swing. Therefore, there is a general consensus that competition around the MOOC in Asia will be more fierce.¹³⁾

As the Korean government is increasingly aware of such trend, the ministry of education announced the basic plan for MOOC in 2014. It has scheduled to establish a MOOC platform in 2015, start offering MOOCs in 2016 and make partnership with overseas MOOC platforms in 2017.

National Institute for Lifelong Education is tasked with implementing the basic plan. In this paper, a few suggestions and words of cautions are made to the aforementioned basic plan for better implementation. First, for the better development of KMOOC, a network should be built, as shown in Figure 5.1, with Asian and global MOOC providers.

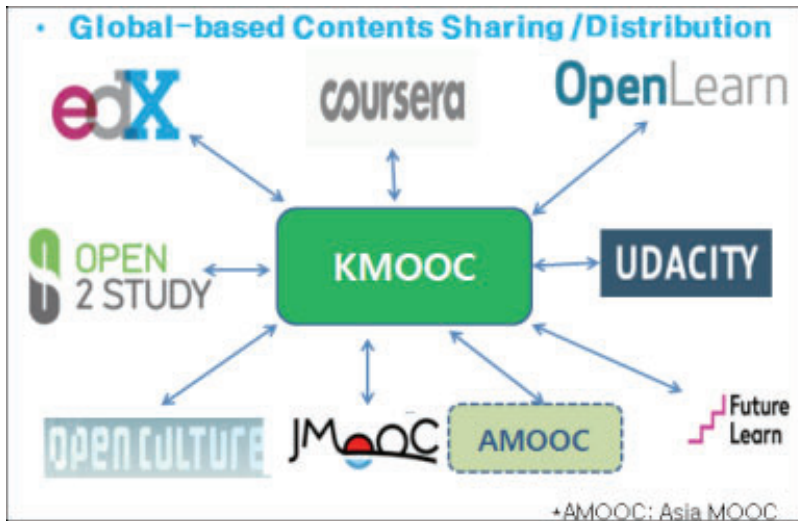


Figure 6.1: Global vision of KMOOC

Second, in order to make an efficient educational service, there needs to be a thorough review of KMOOC contents in areas such as the scope and the target of service, operators, funding, accreditation or certification, faculty support, content development, learning platforms and student fees.

Third, in order to make KMOOC an active MOOC platform, regulations on online credit courses offered by traditional universities should be lifted while the understanding of open online courses should be improved. At the same time, there is a need for an in-depth discussion on the financial restriction of universities in Korea with regard to the pressure to lower tuitions and additional costs incurred by the establishment of physical and human infrastructure to buttress the MOOC platform.

Lastly but not the least, KNOU should go beyond providing its existing quality OERs one-sidedly but expand it to include KMOOC so it can be more interactive and mutually reinforcing. Ultimately, it should play an important role in creating AMOOC (Asia MOOC) and then connecting it with other global MOOC providers.

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MOOCs in Malaysia : A preliminary case study

Mansor Fadzil, Latifah Abdol Latif, and Tengku Amina Munira

1. Introduction

Massive open online courses (MOOCs) in Malaysia are a very recent development. At the time of writing of this case study, there are only six higher education institutions that have embarked on a MOOCs initiative. The first Malaysian higher education institution announced its pilot MOOC offering in March 2013. In 2014, five more higher education institutions – four of them public universities and one, i.e. Open University Malaysia (OUM), a private open and distance learning (ODL) institution – began offering MOOCs on two different platforms. At the moment, these initiatives represent a preliminary phase in MOOCs, where Malaysia's approach can be described as exploratory. Malaysia is less concerned with reaching the widest possible audience, making a significant mark globally or competing with established providers like Coursera, edX and Udacity. Instead it views MOOCs in the context of complementing current educational delivery systems at the higher education level by leveraging on the use of web-based technology and also as a lifelong learning resource for the general Malaysian audience.

Besides using MOOCs to reach the widest possible audience, the following are common reasons for their adoption in higher education institutions:

- Democratising education, i.e. MOOCs as a means to provide quality education for anyone who seeks it;
- Promoting an institution's brand;

- Attracting new learners to enrol at an institution;
- Potential for collaborating with other institutions;
- Potential for research and development in online education; and
- Transforming traditional teaching and learning approaches.

These reasons can be interpreted as potential benefits and they have compelled Malaysia's own initial exploration of MOOCs in this country. However, this case study will show that Malaysian MOOCs are not necessarily the same as the more established global examples.

Currently, MOOCs adoption in Malaysia is developing in tandem with several important national plans, e.g. the upcoming 11th Malaysia Plan (2016-2020), the National Economic Model, Economic Transformation Programme and the anticipated Malaysian Education Blueprint for Higher Education; the last of which has specifically addressed MOOCs in its preliminary discussion document. Online learning, as an essential component of the delivery mechanism in MOOCs, is also addressed in the soon-to-be-released Blueprint.

The adoption of MOOCs by the Malaysian government and local higher education institutions has significant repercussions on the entire national higher education landscape. This is especially so if MOOCs are seen as part of the delivery approach in higher education institutions (as currently explored by public universities). The recent interest in MOOCs shown by the MOHE has generated or at least prompted the conventional universities to re-think of today's learning needs to suit the rapid technology-based environment of the 21st century.

That being said, any novel, national-scale initiative in education calls for a mindful and pragmatic approach. It will be wise to consider global trends in MOOCs in any discussion regarding the future direction of MOOCs in Malaysia as they will inevitably affect the actions of the local government and relevant institutions.

The subsequent sections of this case study will describe the following key areas in MOOCs development in Malaysia:

- Background of MOOCs in Malaysia, with relevant information pertaining:
 - Adoption of information and communication technology (ICT) in Malaysian education; and
 - Awareness of and readiness for MOOCs amongst Malaysian people and institutions;
- Policies on MOOCs adoption in Malaysia, with relevant information pertaining to:
 - The Malaysian government's objectives and goals in relation to MOOCs; and
 - National plans and strategies that have addressed MOOCs;

- Current practices of MOOCs in Malaysia, which will describe:
 - The six current MOOCs initiatives in the country; and
 - Approaches, strategies and technological systems; and
- Issues and future direction of MOOCs in Malaysia, which will provide a critical review of the current initiatives and comments on the potential prospects for further MOOCs development in Malaysia.

2. Background

The use of ICT in the Malaysian education system is relatively modest. Many plans to introduce ICT at the school level were announced at the onset of the establishment of Multimedia Super Corridor¹ (MSC) in 1996, such as the “Smart School” project – an effort to encourage ICT integration in school-based learning; the “SchoolNet” initiative – a project to provide broadband Internet to Malaysian schools; and “EduWebTV” – a YouTube-based portal for educational videos for consumption by school teachers and students (see MSC, 2011). Since the late 1990s, other private or non-governmental initiatives were also introduced, e.g. establishment of private and Chinese smart schools nationwide (see Chan, 2003). Currently, *ICT Literacy* is a compulsory subject taught at all national schools in Malaysia.

At the higher education level, Siti Rafidah *et al.* (2009) found that ICT resources were modest in both public and private higher education institutions, although usage of ICT, either for communication or information retrieval, was common amongst faculty members and students. The level of ICT proficiency amongst faculty members was good, although those in public universities tended to be more cautious and resistant to use ICT in their teaching activities. These observations demonstrate that technology has played a relatively limited role in teaching and learning, both at the school and higher education levels.

Nevertheless, it is useful to note at this point that there are several open universities and ODL institutions in Malaysia that fully leverage on ICT as part of their delivery system as well as for administrative and operational activities. These institutions are OUM, Wawasan Open University (WOU), Asia e-University (AeU), International Centre for Education in Islamic Finance (INCEIF) and Al-Madinah International University. All five institutions have developed e-learning platforms and systems that are used in a blended learning pedagogy, which combines online learning with face-to-face sessions and self-managed/independent learning. Additionally, several public universities, such as Universiti Sains

¹ MSC is a special economic zone in Malaysia that was introduced to leverage on technology and a knowledge-based society framework to accelerate national development and transform Malaysia into a modern and fully developed nation by 2020.

Malaysia (USM) and Universiti Putra Malaysia (UPM), also offer programmes via distance education, using delivery methods similar to those of the full-fledged ODL institutions.

In order to understand the cultural influence and acceptance of technology in education and MOOCs, it is useful to examine the general ICT adoption amongst the public. In 2014, the Malaysian Communications and Multimedia Commission (MCMC, 2014) reported a broadband penetration rate of 24.9 per 100 inhabitants; and a cellular telephone penetration rate of 145 per 100 inhabitants. Compared to other ASEAN countries, Malaysia falls only behind Singapore in terms of fixed broadband penetration per 100 inhabitants, although we have some ways to go if we are to match the much higher penetration rates in advanced countries like Japan and South Korea.

However, Internet usage is widespread across Malaysia. In its 2012 report, MCMC revealed that almost 19 million Malaysians (or close to two-thirds of the population) consider themselves as Internet users. More than 72% of them are under 35 years of age, with a significant majority (more than 80%) who are still studying or are educated (40.7% have tertiary education qualifications). These findings indicate that many Malaysians are equipped, aware and relatively updated in terms of using the Internet. However, urban Internet users outnumber rural users by about three to one, which indicates that infra- and info structures, as well as access and individual capacity are more limited in many rural locations in Malaysia (all figures from MCMC, 2013).

This is not a revelatory finding for Malaysia. The urban-rural divide is a common problem in many developing countries and this has been acknowledged by the local government, which has launched efforts to bridge this digital divide and improve Malaysia's technological readiness in various aspects of life. One example that shows Malaysia's efforts to improving growth in the digital landscape is the "Communications Content and Infrastructure" sector under the Economic Transformation Programme (ETP)², which spans content, network applications, services and devices to provide easier access to the Internet and allow all Malaysians to experience the benefits of an interconnected life (Performance Management Delivery Unit (PEMANDU), 2013). Some of the initiatives under this sector that are currently in progress are:

- Ensuring broadband for all;
- Establishing e-learning for students and workers; and
- Extending reach (in rural areas).

² ETP is a national plan formulated as part of Malaysia's National Transformation Programme. Its goal is to elevate the country to developed-nation status by 2020 through 13 key economic sectors.

However, these developments do not unequivocally indicate that Malaysia is socially, culturally or technologically ready to fully adopt MOOCs as an important approach to education. While in many ways, the country and its people are generally receptive to ICT, its use in an educational setting is quite limited as Malaysia is currently focusing on improving infrastructure and access to bridge the urban-rural digital divide.

Recent findings by the Association of Chartered Certified Accountants (ACCA) reveal some interesting observations. Among 120 surveyed members of Malaysian academia, an overwhelming 92% believed learning models must change to suit technology and student needs. 97% strongly agreed that technology is a compulsory tool for 21st century learning, although views were split about whether online learning will replace traditional forms of learning (42%); or it will instead co-exist with traditional methods (53%) (see ACCA, 2014). In general, these findings point to some very positive impressions regarding the role of ICT in education.

The initial interest in MOOCs within the last two years suggests that we are open to exploring the use of MOOCs in higher education, although currently there is no indication if Malaysian MOOCs will take the form of the currently prominent platforms such as Coursera, edX and Udacity. The adoption of MOOCs in Malaysia, from the limited examples, so far seems to indicate that MOOCs are offered to youngsters to entice them to some of the basic and compulsory courses before taking those courses upon entry into the university

As mentioned in the introductory section, the conventional higher education model is ripe for disruption. This is something that has been widely discussed, considering the rapid growth in ICT, which has revolutionised the way we live, from the retail industry (e.g. online shopping) to communication (e.g. social networking), disaster management (e.g. satellite- or broadband-based emergency networks) and various mundane tasks like navigating traffic. The pervasiveness of ICT, which has had its own tremendous impact in higher education, is a disruptive force that cannot be ignored. Higher education institutions must learn to adapt and innovate to ICT, or risk being rendered obsolete or irrelevant.

We view MOOCs as one such positive disruption that can hopefully lead to a modernised, effective and compatible higher education model in Malaysia, although it must be acknowledged that the greatest contention at this point is whether or not the Malaysian academia can properly manage the threat of an innovation like MOOCs.

3. Policies

There are currently few official policies that specifically address MOOCs in Malaysia. The only clear exception at this time is the anticipated

Malaysian Education Blueprint for Higher Education, which was released by the Ministry of Education (MOE) as a preliminary discussion document at the end of 2014 and is expected to be officially launched this year. The Blueprint has preliminarily addressed MOOCs under the 10th chapter (or Shift) called “Globalised Online Learning”. In this Shift, MOE declares Malaysia’s intention to leverage on MOOCs as a way to take advantage of technology to improve quality and widen access to education (see MOE, 2014) and also states that MOOCs as an online learning approach can offer the following benefits for Malaysia:

- An interactive and engaging delivery that encourages high-degree collaboration and international interactions;
- Global visibility of and access to Malaysian expertise in niche areas (e.g. *Islamic Finance* and *Tropical Diseases*); and
- An opportunity for Malaysian higher education institutions to showcase their best programmes and research areas.

The Shift lists seven key initiatives related to MOOCs development in Malaysia, i.e.:

3.1. Infrastructure:

Establish dedicated independent infrastructure network for Malaysian higher education and any technology necessary for delivering globalised online learning;

3.2. Awareness:

Launch MOOCs in subjects of distinctiveness for Malaysia, targeting 50% international enrolment, and promote MOOCs initiatives to the Malaysian public;

3.3. Capacity building:

Improve training programmes for academic and support staff to enable effective utilisation of the best pedagogical models;

3.4. Governance:

Promote online programme development by establishing a national platform, shared services and coordination of MOOCs development and building partnerships;

3.5. Policy:

Provide implementation framework for successful deployment of globalised

online learning based on international best practices; establish online learning as an integral component of higher education, with 70% of courses using blended learning by 2025;

3.6. Credit transfer:

Establish mechanism to allow credit transfer of courses completed by students via MOOCs and other online learning platforms; and

3.7. Lifelong learning:

Develop a common platform to enhance the utilisation of MOOCs for lifelong learning.

In October 2014, Second Education Minister Datuk Seri Idris Jusoh declared Malaysia as the first country in the world to implement MOOCs for all public universities and we are also currently the only country where MOOCs are implemented at a national scale through the local government (Rajendram, 2014). This announcement was made in relation to the September 2014 launch of four pilot MOOCs by four public universities (in respective parentheses), i.e.:

- *Islamic and Asian Civilisations* (UPM);
- *Ethnic Relations* (Universiti Kebangsaan Malaysia (UKM));
- *Entrepreneurship* (Universiti Teknologi Mara (UiTM)); and
- *ICT Competence* (Universiti Malaysia Sarawak (UNIMAS)).

MOE has targeted 15% of all courses offered by public universities in Malaysia to be delivered via an online platform by the end of 2015; and increasing to 30% by 2020. The four institutions listed above have been tasked by MOE to coordinate and develop the official portal for MOOCs by public universities (known collectively as Malaysia MOOCs). Later last year, Datuk Seri Idris Jusoh also announced that MOE is proposing a budget of MYR500 million (USD138.6 million) to encourage this initiative under the upcoming 11th Malaysia Plan (2016-2020) (The Star, 2014).

Taylor's University, Malaysia's first institution to launch MOOCs in 2013, adopts an approach where MOOCs are offered as mini courses that serve as a sampler for full university programmes. Additionally, Taylor's University also aims to give its faculty members the opportunity to explore new delivery methods through the use of technology (Digital News Asia, 2014), and creating an opportunity for the institution to enhance and improve its programmes. All MOOCs by Taylor's University, UPM, UKM, UiTM and UNIMAS are offered via Open- Learn, a MOOC platform based in Sydney, Australia.

OUM is currently the sixth Malaysian higher education institution that

has embarked on a MOOCs initiative, which was launched in November 2014. Unlike the five other institutions offering MOOCs, OUM has collaborated with Apple to offer MOOCs via iTunes U, available for iPad and iPhone users. OUM considers MOOCs as a platform for promotion and branding as well as part of the university's continuing efforts towards widening access through ODL. The MOOCs initiatives by Taylor's University and OUM are focused not only on academic courses, but also on non-formal and informal interests, such as visual and culinary arts.

4. Current Practices

As stated in earlier sections of this case study, six higher education institutions are currently involved in MOOCs development in Malaysia. They are:

- 4.1. Taylor's University;
- 4.2. The four public universities under Malaysia MOOCs (i.e. UPM, UKM, UiTM and UNIMAS); and
- 4.3. OUM.

The current development of MOOCs in Malaysia is exploratory, both by public and private higher education institutions. The broad short-term objectives are to:

- Promote MOOCs and increase public awareness;
- Provide the general public with an opportunity to explore and try out courses;
- Promote non-formal and informal courses as part of the lifelong learning initiative; and
- Leverage on ICT to complement traditional higher education courses.

As iterated in the previous section, MOOCs as a very recent development have yet to be given much highlight in Malaysia. There are no explicit long-term goals related to MOOCs in Malaysia except for the official target that 15% of all courses offered by public universities in Malaysia to be delivered via an online platform by 2015; and increased to 30% by 2020.

The brief timeline of MOOCs development in Malaysia is as follows:

- March 2013: Taylor's University announces the launch of two pilot MOOCs. By the end of 2014, Taylor's University was hosting 15 MOOCs via the OpenLearn platform.
- September 2014: The four public universities under Malaysia MOOCs also begin offering four MOOCs via OpenLearn.
- October 2014: Pre-launch of Malaysia MOOCs by MOE and OpenLearn; with the announcement that Malaysia targets to make

online learning an important component in courses at public higher education institutions.

- November 2014: OUM launches its own MOOCs initiative under iTunes U.
- December 2014: MOE releases a preliminary discussion document for the Malaysian Education Blueprint for Higher Education, which includes MOOCs as a key initiative in Malaysian education from 2015 to 2025.

At the moment, there are a total of 36³ MOOCs currently offered by the six higher education institutions in Malaysia, i.e.:

- 15 by Taylor's University;
- Four by Malaysia MOOCs; and
- 17 by OUM.

For public universities, plans for furthering MOOCs development have been outlined in the preliminary Malaysian Education Blueprint for Higher Education and MOE's announcement that online learning initiatives will receive budget allocations under the 11th Malaysia Plan (2016-2020). For private higher education institutions like Taylor's University and OUM, embarking on MOOCs projects are an institutional commitment that requires investments in funding, manpower, infrastructure, content development, and other relevant areas. For example, Taylor's University allocated MYR100 million (USD27.7 million) in a five-year e-learning strategic plan between 2012 and 2016 (Singh, 2013), through which its MOOCs initiative was developed.

A majority of the target audience is students in public and private higher education institutions, although both Taylor's University and OUM have reported that their MOOCs have attracted the attention of an international audience (Digital News Asia (2014); Mansor, Woo, Mazlan, Fathinirna & Nurhisyam (2014)). Content and learning materials have been developed in-house. The four courses under Malaysia MOOCs are based on compulsory core courses that are commonly offered by all public universities in Malaysia. Taylor's University and OUM both deliver MOOCs based on their current course offerings.

As the 36 courses currently on offer are Malaysia's first MOOCs, it is unsurprising that the approach to instructional formats and pedagogies is relatively conventional. Lessons are delivered via video lectures, PDF or PowerPoint slides. Learners are assessed through various course activities

³ For a full list of the courses, see:

- <https://www.openlearning.com/taylorsuniversity>;
- <https://www.openlearning.com/malaysiamoocs>; and
- <https://itunes.apple.com.my/institution/open-university-malaysia/id871805186>

such as forums, discussions, quizzes and practices. In the case of OUM, the lessons are structured around repurposed learning materials that have already been developed for full-fledged courses at OUM. The learning materials, e.g. open educational resources (OER), YouTube videos, podcasts, learning segments from the OUM's internet radio (called iRadio) and audio books for the visually impaired, are included in each course.

Institutions involved in developing MOOCs commonly require the expertise of instructional designers, graphic designers, video lecture developers, editors, and multimedia programmers to work alongside faculty members to produce the learning materials. For OUM's MOOCs, these materials must be produced in formats that are compatible with Apple devices. Apple also plays the role of 'gatekeeper' to ensure quality and copyright compliance. Taylor's University opts for instructor-guided courses with concise, short videos, automated assessment and peer-reviewed assignments and activities.

Taylor's University's MOOCs, as well as those under Malaysia MOOCs are hosted by OpenLearning, which offers a learning management system package that helps institutions to create customised online courses. OUM chose iTunes U as its MOOCs platform, which offers a similar package although currently limited to iPhone and iPad users. In most cases, facilitators are appointed to manage the courses and examinations are often machine-graded.

At this point, it is too early to summarise any quality assurance, assessment and accreditation for MOOCs offered by the abovementioned six institutions. In the case of Malaysia MOOCs, all four courses currently on offer are compulsory core courses for students in public universities, which indicates that assessment and grading is a necessary component. Students who complete a full MOOC from Taylor's University are given certificates of completion. On the other hand, OUM is still looking into developing the assessment and recognition component of the 17 MOOCs it currently offers.

5. ISSUES AND FUTURE DIRECTION

Due to the recent introduction and exploratory nature of the MOOCs initiative in Malaysia, it is clear that there are many issues to identify and gaps to close if Malaysia is to seriously consider online learning as a viable, large-scale approach to higher education. The three defining characteristics of MOOCs, i.e. 'massive', 'open' and 'online', represent three key factors to determine whether or not MOOCs have or can achieve considerable impact in Malaysia. The recent interest in MOOCs has at least created greater awareness, particularly among the higher education institutions on the advantages of online learning and how they can best leverage on this innovation to bring a fresh perspective to

teaching and learning.

At this juncture, three questions can lead to a broad overview of MOOCs in Malaysia and its accompanying issues and challenges. Subsequently, these questions can point to the potential future direction and prospects for further MOOCs development in this country. These questions are:

- How ‘massive’ are MOOCs in Malaysia?
- How and to what extent can MOOCs in Malaysia be considered ‘open’?
- What is the extent and effectiveness of ‘online’ technology in MOOCs offered by Malaysian higher education institutions?

It is evident at this point that the six higher education institutions cannot yet lay claim to the ‘massive’ potential of MOOCs. Courses from OUM (see figure 1 below) have attracted several hundred views on iTunes U (Mansor *et al.*, 2014), while the 19 courses offered via the OpenLearn platform indicates current enrolments between 20 and more than 22,000 (see figures 2 and 3 below).

In comparison, numbers recorded by prominent North American platforms demonstrate how truly massive MOOCs can become – *Introduction to Artificial Intelligence*, the first MOOC offered by Udacity in 2011 successfully registered more than 160,000 people from 190 countries (Udacity, n.d.). Additionally, Jordan’s (2014) analysis of the initial trends in MOOCs’ enrolment and completion shows that many MOOCs offered by Ivy League institutions demonstrated similarly high enrolment numbers, e.g. *Introduction to Machine Learning* (offered by Stanford University) had 102,000 registrants; *Circuits and Electronics* (offered by Massachusetts Institute of Technology (MIT)) had almost 155,000 registrants; and *Introduction to Computer Science I* (offered by Harvard University) had 150,000 registrants. Many courses reached an average of 43,000 students (Jordan, *ibid.*).



Figure 1: A screenshot of OUM MOOCs on iTunes U.



Figure 2: A screenshot from 4 February 2015 showing the number of registrants in four MOOCs by UPM (22,244), UKM (17,104), UiTM (10,292) and UNIMAS (5,652), respectively.

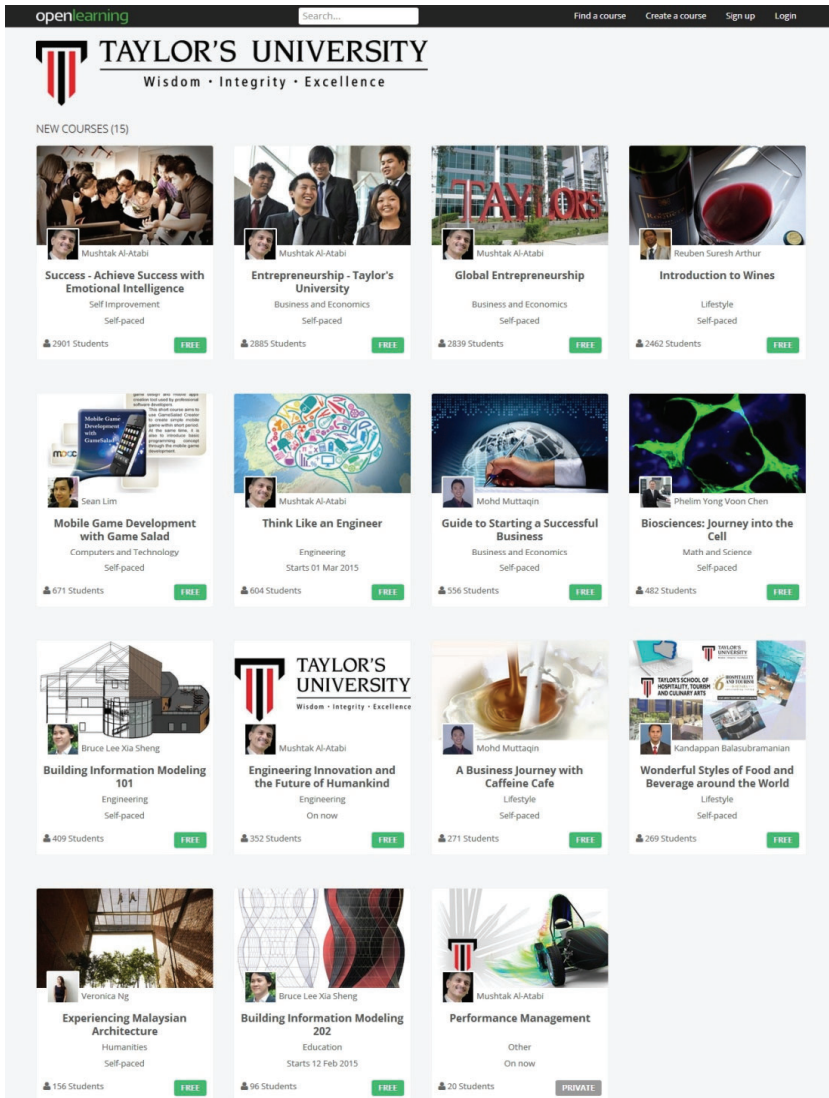


Figure 3: A screenshot from 4 February 2015 showing the number of registrants in 15 MOOCs by Taylor's University (ranging from 20 to 2,901).

Whether or not Malaysian MOOCs can attest to 'openness' must take into consideration who actually enrolls for these online courses. Kolowich (2012) made the early observation that 41% of more than 14,000 registrants surveyed from Coursera's inaugural course, *Introduction to Machine Learning*, identified themselves as professionals who held current jobs in the technology industry. This suggests that MOOCs attract working adults and those outside the sphere of formal undergraduate studies; which implies that MOOCs have immense potential in contributing to

professional development and work-based learning. This echoes the thoughts of Daphne Koller, co-founder of Coursera, who was quoted as saying *“our target audience is people who are primarily working adults and are not currently candidates for traditional forms of education. That’s the vast majority of our audience and they keep coming to us.”* (Knowledge@Wharton, 2015).

However, the situation in Malaysia is different. Although some respectable enrolment numbers have been recorded, caveat must be applied at this point. For example, while a majority of Taylor’s University’s MOOCs have registered about 2,000 participants in each course, many of them are full-time students currently enrolled at the physical campus of this private institution. Similarly, the higher numbers of registrants recorded for the four courses under Malaysia MOOCs (ranging between 5,600 and 22,000 students) cannot attest to a wide reach to all Malaysians as they are compulsory core courses that must be taken by students at public universities in Malaysia. This involves two key observations, i.e.:

- Malaysia’s initial approach to MOOCs does not entail similar goals as the aforementioned global examples. This has been emphasised in the proposed Malaysian Education Blueprint on Higher Education, which declares Malaysia’s intent to leverage on MOOCs to highlight local expertise in niche areas and to use online learning to create a blended pedagogy at higher education institutions, rather than focusing on widespread global reach; and
- While all four Malaysia MOOCs courses are currently open to anyone who wishes to enrol, they are only categorically relevant to students at public universities, thus indicating that they are targeted at a narrow group of potential learners and not the general public. This clearly shows the local government’s focus that the main objective of putting up MOOCs is to complement the delivery methods at public universities.

MOOCs are essentially ‘online’ courses’ and this is a common feature of any ODL institutions. Having developed online learning systems that involve learning materials, learning management system, online support and infrastructure, assessment system and other relevant criteria, ODL institutions are likely to have considerable advantages when it comes to developing MOOCs. Currently both OUM and WOU are actively offering MOOCs. Wawasan Open University (WOU) offers a three-months online MOOC courses: Action Research and Open Educational Resources in e-learning (funded by the Commonwealth Educational Media Center for Asia). There are obvious differences between the two ODL institutions and also between the ODL and the conventional universities in its MOOCs offerings. OUM’s MOOCs are unlike those by Taylor’s University and the four public universities as OUM is currently using MOOCs as a platform

to showcase the institution's multimedia learning materials without any assessment structure; an approach closer to the concept of OER. At the time of writing, OUM is looking into training faculty members to manage courses on iTunes U and revisiting the model to determine how to leverage on MOOCs to contribute to ODL development in this country.

At the moment, gaps in the current MOOCs initiatives show that there is plenty of room for improvement. In his commentary on Malaysia MOOCs, Tan (2014) identified several evident issues, including the inconsistent layouts, quality and structures of courses offered by the public universities. Basically, the issues include: a need for standardisation; the narrowed audience of public university students; and the digital divide which prevails in many parts of rural Malaysia, which influences access to learning materials, especially those requiring high bandwidths.

Additionally, the current MOOCs offering need to be objectively reviewed to ensure that they are relevant not only to Malaysian higher education, but to other aspects of learning, including lifelong learning and professional training and development in order to maximise the gains of this innovation. The limited contribution of ODL institutions that are already universally associated with online learning and blended pedagogies also hints at untapped resources that can further the MOOCs cause in the country.

One imperative in determining issues and possible solutions is to undertake research in MOOCs in this country. Malaysia needs to identify several key trends, e.g. who are enrolling for MOOCs; what are their motivations; and how do they fare in terms of completing and getting the necessary certification. This is necessary to provide a clear and realistic account of MOOCs and ICT adoption in education, which in turn, should be addressed in all relevant national educational policies and plans in the future.

One such trend that warrants analysis is completion rates. For instance, Taylor's University has reported a high initial completion rate of its inaugural course on Entrepreneurship (600 of 2,337 sign-ups from global participants) (Digital News Asia, 2014), although at this rather early point, only time will tell if this success can be replicated in other courses, by other institutions, or in elective/non-credit bearing MOOCs at public universities.

In discussing the future direction and prospects of MOOCs in Malaysia, Bhandari's (2014) five questions are an excellent starting point as they relate to MOOCs specifically in the context of developing countries like Malaysia. While the pilot initiatives by Taylor's University, UPM, UKM, UiTM, UNIMAS and OUM certainly represent a positive beginning to the MOOCs development in Malaysia, the local government, ministries and other relevant agencies and institutions would be wise to consider how we may answer the questions she has posed, i.e.:

- 5.1. Does the infrastructure exist for MOOCs to succeed in Malaysia?
- 5.2. Can MOOCs play a role in providing non-formal education in Malaysia?
- 5.3. Can MOOCs help close the gender gap in education?
- 5.4. Will MOOCs transform the role of the teacher?
- 5.5. Can MOOCs be globally accessible yet locally relevant?

In contemplating the potential answers, Malaysia needs to acknowledge the following:

- Access to the Internet in rural and remote areas is still inadequate and will likely be a significant stumbling block for potential MOOCs students;
- The relevant authorities should consider developing an approach to MOOCs that can incorporate not only higher education courses but non-formal and informal courses as well, in response to the lifelong learning initiative which was unveiled as a national Blueprint in November 2011, and to the educational needs of working adults; and
- By focusing on locally-relevant subject matters, these initial MOOCs indicate that a global phenomenon can be adapted to suit local needs. However, there is no reason why learning opportunities cannot be expanded for mass consumption, in areas and subject matters that go beyond higher educational curricula.

While focusing on national priorities, it is crucial for Malaysia not to overlook global trends in MOOCs. Many of the prominent providers have openly acknowledged that despite the early hype, MOOCs have had significant issues, especially in terms of completion (Jordan's (2014) study reported an average completion rate of only 6.5%), as well as feelings of isolation and an impersonal learning process. Critics have also noted that despite the noble aim of using MOOCs to democratise learning opportunities, the poor or underprivileged, as well as those in rural areas and/or without the necessary infrastructures, devices and access are often left out of the MOOCs landscape. One such observation was made by Alcorn, Christensen and Emanuel (2014), who noted that *"a disproportionate number of MOOC students are already well-educated. Globally, they're predominately male and currently employed. ... Far more enrollees view them as a diversion than they do as a means to a college degree or a new job."*

The absence of proper accreditation and certification as well as the issue of how MOOCs should translate into actual qualifications are two issues that have also been widely discussed. Additionally, facilitating MOOCs require ICT-savvy faculty members and adequate infrastructures. From Malaysia's perspective, these will be the major challenges that need to be emphasised in future development of MOOCs, as they relate to the

broader issues of the digital divide as well as existing technophobia and resistance amongst traditional faculty members.

There are several aspects to MOOCs development in Malaysia that deserve praise. The introduction of MOOCs is a positive disruption that we welcome as a first step towards modernising higher education. MOOCs is also seen as a way to empower self-directed and deep-seated learning as well as encouraging Malaysians how to learn with various ICT tools. The recent introduction of non-formal/informal subject matters (e.g. *Introduction to Wines* by Taylor's University; and *Green Tourism* by OUM) is a positive development towards increasing professional development and training, at the same time, encouraging non-formal and informal learning. Focusing on local expertise and niche areas is an excellent idea that may contribute to global branding of Malaysian higher education. Finally, the incorporation of MOOCs in the upcoming Malaysian Education Blueprint on Higher Education demonstrates the country's determination to seriously explore the role of technology in education.

To varying degrees, all these developments have repercussions on larger educational goals, where several strategies can be employed not only to further the cause of MOOCs in Malaysia, but also to benefit other relevant educational initiatives. These strategies may include the following:

- Tapping into all potential local resources to further develop MOOCs to suit the needs of the Malaysian audience, which should include sharing of curricula between faculties and institutions, and strategic academia-industry partnerships;
- Leveraging on the concepts of open entry (OE), recognition of prior learning (RPL) and accreditation of prior experiential learning (APEL)⁴ in establishing a national assessment and accreditation structure that can recognise MOOCs qualifications;
- Engaging the relevant ministries and agencies to develop and adopt MOOCs for professional development purposes and other nonformal or informal subject matters to draw a wider learning audience; and
- Exploring means to close the digital divide between urban and rural areas to ensure all Malaysians have the opportunity to participate in MOOCs.

MOOCs have a potentially significant role to play in the larger context of

⁴ OE, RPL and APEL are processes that involve the identification, documentation and assessment of past learning and work experiences to determine the extent to which an individual has achieved the desired learning outcomes, for enrolment to a particular programme of study and/or for award of credits. These processes allow individuals who lack formal academic qualifications to pursue studies at higher education institutions through a less stringent enrolment process. For further information, see <http://www.mqa.gov.my/apel/en/index.html> and <http://www.oum.edu.my/oum/capl/>

lifelong learning. It is crucial to acknowledge this not only to determine the best move forward where MOOCs are concerned, but also to leverage on MOOCs as an innovation that can boost the lifelong learning cause in this country.

Malaysia has declared lifelong learning as the third pillar in human capital development: an educational agenda equally important to the school and higher education systems and one that emphasises the creation of learning opportunities for the entire population, whether for formal, non-formal, or informal learning interests. We believe that MOOCs may hold the key to intensifying lifelong learning efforts; going beyond the needs of higher education and university students.

The potential benefits of MOOCs have only begun to come to light in recent months. Coursera (2015) revealed in their first longitudinal study that out of almost 52,000 respondents, 72% reported career benefits resulting from their participation in MOOCs, and 61% reported educational benefits. Those identified as “career builders” reported benefits such as new jobs, promotions, pay raise and even the courage to start businesses. The “education seekers” acknowledge to using MOOCs as a stepping stone in traditional education and benefited from broadening of knowledge, refreshing of concepts and credit/prerequisite waive on academic programmes.

A study by the University of Southampton, commissioned by the United Kingdom Higher Education Academy, focused on a different aspect of benefits derived from MOOCs. Wintrup, Wakefield and Davis (2015) reported considerable levels of engagement in terms of higher order learning; reflective and integrative learning; and current research and research methods. Importantly, MOOCs appear to have enabled many participants to feel engaged by *“forming new understandings; making connections with previous knowledge and experience; and exploring knowledge actively, creatively and critically”*.

These benefits can prove valuable across all forms and levels of learning. They also agree with Coursera’s findings with regards to “education seekers”, which indicates MOOCs’ potential benefits in encouraging lifelong learning. Such findings are useful to guide future development of MOOCs in Malaysia, especially in the endeavour to ensure that MOOCs can provide the most relevant and greatest range of benefits to all learners in this country, whether those pursuing formal education or other non-formal and informal means of learning.

In light of these recent research findings and the developments that have taken place within Malaysia, we can conclude that while MOOCs are a valuable tool for introducing novel educational approaches, Malaysia needs to identify a sustainable approach that can ensure long-term success in terms of quality of courses, engagement with all relevant stakeholders, teaching and learning practices and scalability. At this early stage, we

acknowledge the introduction of MOOCs as a positive disruption that can hopefully augur the transformation and modernisation of higher education. It remains to be seen what their impact will be, and to what extent, although at its most basal level, we believe MOOCs can have social advantages in that they can attract and bring together like-minded Malaysians who have a vested interest in education and learning.

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Malaysia MOOCs : The way forward

Norazah Nordin, Mohamed Amin Embi, and Helmi Norman

1. Introduction

The emergence of Massive Open Online Courses (MOOCs) has affected the field of open learning in higher education (Gore, 2014). MOOCs allow a massive amount of learners to learn on an open and online learning environment (Kop et al., 2011a; Daniel, 2012; Gover et al., 2013). Due to massiveness of students in MOOCs, learners in MOOC can be quite diverse – as learners come from different backgrounds that can range from people who in academia (e.g. undergraduates), industries (e.g. engineers) to people who work at home (e.g. housewives). They can also vary in terms of age and experience ranging from learners who are older with vast experiences to learners who are younger and have lesser experience (Grover et al., 2013). Among the reasons behind the popularity of the MOOC phenomena is the ability to access learning content, materials, and tasks with minimal or no fees as well as the ability to gain credits upon successful completion of a MOOC (Ministry of Education Malaysia, 2015). MOOCs have revolutionized the idea of open and distance learning – as learners can access knowledge outside the “boundaries of learning institutions” (Kop et al., 2011a).

In line with the advancement, Ministry of Education Malaysia has recently initiated Malaysia MOOCs in collaboration with four public universities as MOOC content developers, which are: (i) National University of Malaysia (UKM); (ii) University Putra Malaysia (UPM); (iii) MARA University of Technology (UiTM); and (iv) University of Malaysia

Sarawak (UNIMAS). The MOOCs were developed. This chapter discusses the issues, challenges, and experiences in the development of the four MOOCs. The chapter is outlined as follows. First, in the backgrounds section, an overall picture of Malaysia MOOCs initiative is presented where the learning content and tasks developed in the MOOCs are discussed. Second, the policies that impact the development of Malaysia MOOCs are then explained. After that, in the practices section, the Ministry of Education Malaysia's plans for near and long-terms plans for Malaysia MOOCs are explained. Our findings on learners' perceptions across the four developed MOOCs are also elaborated in the section. Finally, some issues are raised and future directions are presented.

2. Backgrounds

2.1. Malaysia MOOCs initiative

The Ministry of Education Malaysia (MOE) recently produced the Malaysia Education Blueprint 2015-2025 (Higher Education) and the Ministry aspires to increase the number of student enrolment, enhance the quality of teaching and learning, as well as globalize Malaysian higher education institutions. In order to achieve these aspirations, MOE has introduced MOOCs to be integrated in the higher educational system. The drive for using MOOCs is threefold. First, MOOCs are capable of reaching a much more diverse and wider audience – with the capability of attracting students from all ages as well as students who are not currently enrolled in any higher educational institution. This facilitates equality in terms of access to local and international learning content and knowledge. Second, as MOOCs are open and can be globally accessed, this allows Malaysian universities to enhance their global brand and visibility that in turn could encourage universities to further increase their quality standards to an international level. Lastly, implementation of MOOCs is projected to reduce costs of delivering teaching and learning while maintaining its quality (Ministry of Education Malaysia, 2015).

With the support of MOE, Malaysian higher educational institutions have started developing the Malaysia MOOCs. In September 2014, MOE launched four MOOCs with four universities as content developers. The courses are compulsory courses for undergraduates. The courses are: (i) Ethnic Relations course developed by National University of Malaysia (UKM); (ii) Asia and Islamic Civilization course developed by University Putra Malaysia (UPM); (iii) Introduction to Entrepreneurship course by MARA University of Technology (UiTM); and (iv) ICT Competency by University of Malaysia Sarawak (UNIMAS). The courses are foundation courses that should be undergone by undergraduates in Malaysian universities. All course instructors teaching the four courses were

recommended to utilize the MOOCs as learning content in a blended learning mode, according to course instructors in their respective universities (Ministry of Education Malaysia, 2015). OpenLearning was the learning platform chosen for the implementation of the Malaysia MOOCs and the courses can be found at <https://www.openlearning.com/malaysiamoocs>.

As of January 2015, Malaysia MOOCs have an enrollment of about 55,000 learners where approximately 54,000 are university students while the remaining are unassociated with any higher educational institution. In terms of the four MOOC courses, around 22,000 learners are enrolled in the Asia and Islamic Civilization MOOC, around 17,000. Malaysia MOOCs using the xMOOC format are in the Ethnic Relations course, 10,131 are in Intro in Entrepreneurship and the remaining 5,602 are in ICT Competency.

2.2. Malaysia MOOCs using the xMOOC format

To date, MOOCs are categorized into two types, which are the xMOOC and cMOOCs. The latter is founded on the theory of “connectivism”, where learning is viewed as a process of generating and linking networks that link knowledge to each other (Siemens, 2013). cMOOCs are beneficial in terms of their “open” nature – as learners are involved with less-structured learning activities, which allow a higher level of autonomy for learners (Kop et al., 2011a; Siemens, 2013). Nevertheless, due to the high autonomy level provided to learners in cMOOCs, Kop et al. (2011b) have reported that some of the students felt a sense of “disorientation,” “lost,” and overwhelmed during learning. Meanwhile, xMOOCs are founded on the behaviorist theory (Daniel, 2012). In contrast to cMOOCs, xMOOCs provide a more enclosed learning environment in which learning resources are available in a central hub. Adams et al. (2014) have reported that xMOOCs create a “tutor-like” experience for its learners, where an unexpected intimate learning space was created between instructors and learners. This was due to video lectures – as students watched more video lectures, students perceived as if the instructors were addressing them personally thus facilitating the learning process. However, Siemens (2013) argues that since xMOOCs are based on the behaviorism, the learning is more “teacher-centered.” Siemens (2013) adds that xMOOC learners have a tendency to duplicate the knowledge structure that is pre-defined by MOOC instructors and content developers. Taking into consideration of the advantages and limitations of cMOOCs and xMOOCs, xMOOCs were selected as the format of MOOCs for development of Malaysia MOOCs.

2.3. Learning content and tasks of Malaysia MOOCs

Ethnic Relations MOOC by National University of Malaysia

The Ethnic Relation MOOC (UKM MOOC) was focused on exposure of the ethnic relationships in Malaysia and facilitation of social cohesion among different ethnicity. The course is delivered in *Bahasa Malaysia* (Malay language). The course consisted of four topics, which were: (i) The current scenario of ethnic diversity in Malaysia; (ii) The lens of social cohesion in Malaysia; (iii) The basic understanding of the construction of the discourse of ethnic relations; and (iv) The daily experiences in building social cohesion. The MOOC was developed by the Center for Teaching and Learning Technologies, UKM, in collaboration with the Citra Center as subject matter experts, the Information Technology Center as content developers, the UKM Cultural Centre and the UKM Corporate Communication Centre as content providers. The design and development of the MOOC was based on sound instructional design and focused on student engagement element. The learning content was delivered using two types of video lectures, 2D animated video and “live action” videos. 2D animations were created using software such as Powtoon while “live action” videos were produced using software such as Adobe Premiere. An example of a 2D animated video was the usage of animation to illustrate historical events that were related to ethnic relation during the “Malacca Era” (Figure 1). For “live action” videos, an example is a real-life scene in their daily classes related to social cohesion.



Figure 1: An example of a 2D animated video in UKM MOOC



Figure 2: An example of a live action video in UKM MOOC

With regards to learning tasks, most of the learning tasks in the MOOC were structured loosely (Moore, 1972) and (Park, 2011). Loosely structured learning tasks refers to level of structure of tasks/assignments, where a loosely structured task would allow learners more control over producing a learning solution and instructors less control to moderate the solution. In other words, loosely structured tasks adopt a more student-centered learning approach. Meanwhile, for a mainly structured or full structured learning task, the instructors assume more control over the learning problem/task – providing a higher level moderation and guidance towards the development of the learning solution. Referring back to the UKM MOOC, most of the tasks were loosely structured. Examples of the tasks were self-reflections and open-ended discussions. These types of tasks are beneficial in terms of openness and diversity gained from the learners as well as allow students to reflect on their learning (Yang, 2010). The tasks also promote student engagement aspect. Although most of the tasks are loosely structured, some structured questions were also included (i.e. online quizzes).

Asia and Islamic Civilization MOOC by University Putra Malaysia (UPM)

The Asia and Islamic Civilization MOOC (UPM MOOC) focuses on the role of civilization in development of Malaysian community that is based on the principles of civilization to practice the spirit of mutual respect and interact in various religious communities. Similar to UKM MOOC, this course is also delivered in *Bahasa Malaysia* (Malay Language). The

MOOC is divided into five main themes, which are: (i) introduction to civilization; (ii) Islamic civilization; (iii) Malay civilization; (iv) Chinese civilization; and (v) Indian civilization. UPM MOOC was developed by the Center of Academic Development UPM in collaboration with Faculty of Human Ecology as subject matter experts and INFOCOMM Development Center (iDEC) as content developers. The type of learning content developed was: (i) interactive lecture notes with video (Figure 3); (ii) video lectures (i.e. talking-heads) as in Figure 4; and (iii) Powerpoint slides in pdf format.



Figure 3: An example of interactive lecture notes in UPM MOOC



Figure 4: An example of a video lecture in UPM MOOC

For the learning tasks of UPM MOOC, all of the learning tasks were loosely structured. The tasks given to the students were focused on facilitation of discussion and reflection among students. An example of a question is a group discussion about the achievements of the Indus Valley civilization.

Introduction to Entrepreneurship MOOC by MARA University of Technology

The Introduction to Entrepreneurship MOOC (UiTM MOOC) focuses on issues related to starting entrepreneurial carriers and ventures, and expose students to entrepreneurship and business planning skills. The MOOC is delivered in English. The course consists of topics such as: (i) Concepts of entrepreneurship; (ii) Entrepreneurial opportunities; (iii) Creativity and innovation; and (iv) Business legal forms and support system. The UiTM MOOC is developed by a joint collaboration between Malaysia Academy of SMEs and Entrepreneurship Development (MASMED), Faculty of Business Management as subject matter experts and the i-Learn Centre UiTM as content developers. The MOOC contains three types of learning content, which are: (i) video lectures (i.e. talking heads) as in Figure 5; (ii) audio lectures; and (iii) Powerpoint slides.

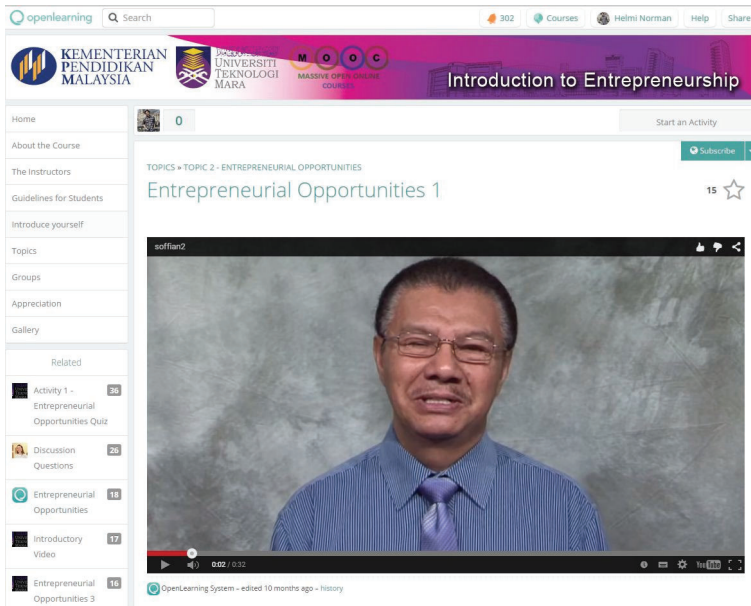


Figure 5: An example of a video lecture in UiTM MOOC

With regards to the learning tasks, there was a mixture of loosely structured learning tasks as well as tightly structured ones. Examples of loosely structured tasks were open-ended discussions and case studies while tightly structured ones included quizzes and true and false questions.

ICT Competency MOOC by University of Malaysia Sarawak (UNIMAS MOOC)

The ICT Competency MOOC focuses on exposing students to digital competencies and skills needed for the 21st Century. In the course, students use and apply relevant ICT tools for learning purposes to acquire ICT skills and further enhance their ICT competency. In addition, students are also exposed to security and ethical issues during daily computing tasks. The course is delivered in English. The learning content was developed by various faculties and centers from UNIMAS. The MOOC consisted of video lectures (i.e. talking heads), video links, and reading materials. An example of a video lecture is shown in Figure 6.

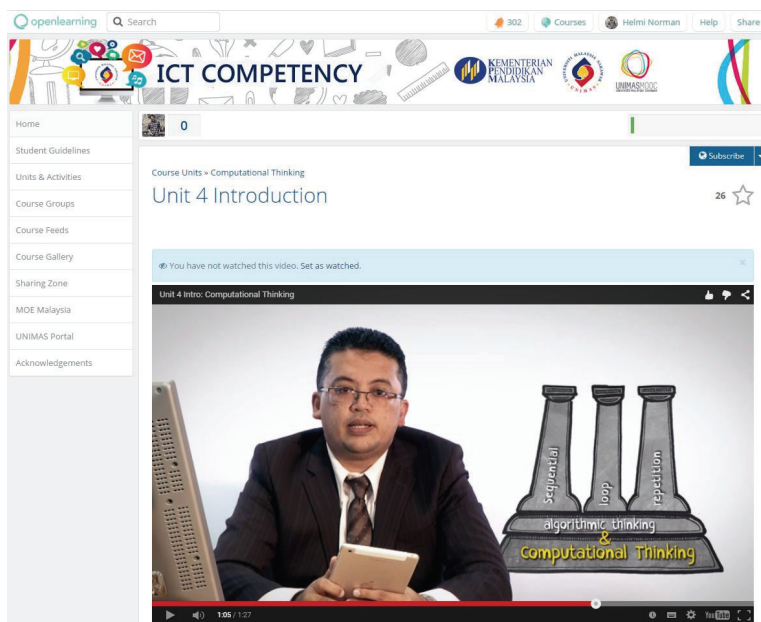


Figure 6: An example of a video lecture in UNIMAS MOOC

The learning tasks developed in the UNIMAS MOOC consist of loosely structured learning tasks as well as tightly structured tasks. Examples of loosely structured are self-reflections, open discussions, debates, self-developed video uploads while tightly structured ones include quizzes, and crossword puzzles (Figure 7).

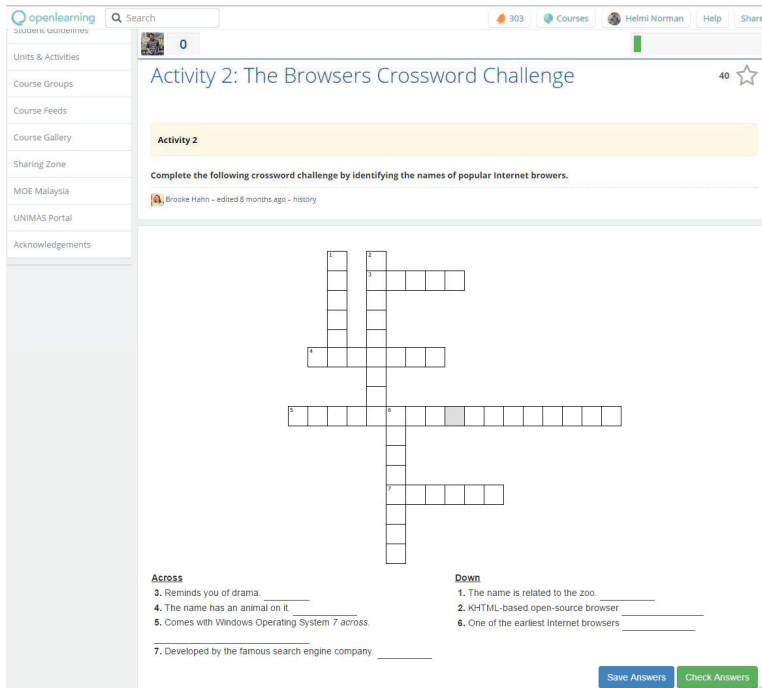


Figure 7: An example of a learning task in UNIMAS MOOC

The previous sub-sections have discussed Malaysia MOOCs in terms of language used in the videos, type of learning content, and type of learning tasks. These aspects are summarized in Table 1.

Table 1: Comparison of Malaysia MOOCs in terms of language used, type of learning content, and type of learning tasks

MOOC	Language used in learning content	Type of Learning Content	Type of Learning Task
Ethnic Relations MOOC (UKM MOOC)	<i>Bahasa Malaysia</i> (Malay Language)	Video lectures (live-action, 2D animations)	Self-reflections, quizzes, open-ended discussions,
Asia and Islamic Civilization (UPM MOOC)	Bahasa Malaysia (Malay Language)	Video lectures (talking-heads), interactive notes with video, Powerpoint slides in pdf format	Self-reflections, group discussions
Introduction to Entrepreneurship (UiTM MOOC)	English	Video lectures (talking-heads), audio lectures, Powerpoint slides	Open-ended discussions, case studies, true-false questions, quizzes
ICT Competency	English	Video lectures	Self-reflections,

(UNIMAS MOOC)	(talking heads), video links, reading materials	open-ended discussions, debates, self-developed video uploads, quizzes, crossword puzzles.
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3. Policies

The Ministry of Education Malaysia (MOE) determines to fulfill the potential of students in the Malaysian education system. Thus, the emphasis on providing better access and quality education to every student, and eventually contribute towards bringing meaningful differences in the lives of Malaysians is an extremely important agenda. To achieve this aspiration, The Malaysia Education Blueprint (Higher Education) (2013-2025) outlines 10 Shifts that will spur continued excellence in the higher education system. All 10 Shifts address key performance issues in the system, particularly with regard to quality and efficiency, as well as global trends that are disrupting the higher education landscape. They are: (i) holistic, entrepreneurial and balance graduates; (ii) talent excellence; (iii) nation of lifelong learning; (iv) quality TVET graduates; (v) financial sustainability; (vi) empowered governance; (vii) innovation ecosystem; (viii) global prominence; (ix) globalized online learning; and (x) transformed higher education delivery, as depicted in Figure 8.

Shift 9 describes the Global Online Learning (GOL) (Ministry of Education, 2015). In realizing GOL initiative and as part of the longterm plan for Malaysia online learning, the Ministry of Education Malaysia has developed a National e-Learning Policy, which is revised every three to five years. It involves three cohorts of implementation: (i) year 2015 to 2016; (ii) year 2017 to 2019; and (iii) year 2020 to 2025. The plan involves six domains, which are the Infrastructure and Infostructure, Governance, Pedagogy Online, e-content, Professional Development, and Enculturation.

Internet penetration in Malaysia currently stands at 67% — the seventh highest penetration rate across Asia. This puts Malaysia in a good position to harness the power of online learning to widen access to good quality content, enhance the quality of teaching and learning, lower the cost of delivery, and bring Malaysian expertise to the global community. There are significant opportunities to achieve the desired outcomes first set forth in the National e-learning Policy (Dasar e-Pembelajaran Negara or DePAN). Malaysia needs to move from a mass production delivery model to one where technology-enabled innovations are harnessed to democratise access to education and offer more personalised learning experiences to all students. One of the indicators to determine the achievement of GOL is Massive Online Open Courses (MOOCs). Malaysian Higher Learning

Institutions develop MOOCs in their niche areas of expertise, while participating in international MOOC consortiums and building the Malaysia education brand globally. with three focus areas, which are Blended Learning, Open Courses and e-Evaluation. The key initiatives of GOL include: Launching MOOCs in subjects of distinctiveness for Malaysia such as Islamic banking and finance, in partnership with high profile international MOOC consortiums like EdX and Coursera, so as to build Malaysia's global brand. It also aimed to making online learning an integral component of higher education and lifelong learning, starting with the conversion of common undergraduate courses into MOOCs, and requiring up to 70% of programmes to use blended learning models.



Figure 8: The 10 shifts in Malaysia Education Blueprint (Higher Education) 2015-2025
Source: Ministry of Education Malaysia (2015)

The Malaysia MOOCs initiative is an effort to realize the 9th shift, which is “globalized online learning.” The plan involves aspects such as infrastructure, infostructure, governance, quality assurance, e-content development, professional development, as well as enculturation and recognition. First, in terms of infrastructure, MOE plans to develop an established network infrastructure for education and increase the Internet bandwidth by upgrading wired and wireless connection in local higher educational institutions. Second, for infostructure, MOE plans to provide

adequate software in promoting MOOC development among all Malaysian universities. Third, in terms of governance, MOE plans to initiate the National e-Learning Centre under the MOE umbrella to serve as hub in fostering collaborations between government agencies, academia and industrial partners as well as development of e-Learning policies. Fourth, in terms of pedagogy, MOE plans to develop 600 MOOCs by the end of year 2025. Fifth, for quality assurance, MOE plans to develop a mechanism for credit transfer of MOOC courses. The effort would be a joint collaboration with the Malaysia Qualifications Agency. Sixth, for MOOC learning content development, MOE plans to establish a dedicated workforce for each university in developing MOOC content for their respective universities. In addition, MOE also plans to devise a set of guidelines for development of Malaysia MOOCs. Seventh, for professional development, MOE in collaboration with governmental and non-governmental agencies plans to design dedicated strategic programs for promoting the development of Malaysia MOOC courses. An example of a strategic program would be training dedicated master trainers who could become instructional designers for MOOCs. Finally, for enculturation and recognition, MOE plans to grant recognitions in terms of national and international level. Furthermore, they plan to attract more international students to participate in Malaysia MOOC initiatives (Ministry of Education Malaysia, 2015).

4. Practices

In assessing Malaysia's higher education institutions readiness in using MOOCs for learning, a survey was distributed to 4,449 Malaysia MOOC learners across the four MOOCs. The learners were assessed according to aspects such as social readiness, educational readiness, and technological readiness. For social readiness of Malaysia MOOCs, the readiness was assessed in learners' perception of the following aspects. First, the learners' were assessed on their experience in using MOOCs. Results indicated that most of MOOC learners (93% out of 4,449 learners) were learning via MOOCs for the first time. In terms of frequency of accessing MOOCs, 50% of the MOOC learners accessed the MOOCs for at least once a week. 25.6% of learners accessed MOOCs on a weekly basis, 24.3% of them accessed MOOCs monthly, 18.5% accessed MOOCs several times per week, while the remaining accessed daily, only once, or never (after enrolment). For the preferred time of accessing MOOCs, almost half of the learners preferred to access the MOOCs at night (6:00 pm to 12:00am) while the rest accessed them during afternoons (25.4%), morning (17.4%), and early morning (8.9%).

For educational readiness of Malaysia MOOCs, the readiness was assessed via investigation of learners' perception on the following aspects.

First, learners were assessed on their perception on whether the learning content in MOOCs met the syllabus requirement. Most of the learners agreed (77%) that the learning content developed met the syllabus, while the remaining was neutral (20.9%) or disagreed (1.8%) and strongly disagreed (0.3%). Second, in terms of the balance between learning activity and content, most of the learners (74.8%) perceived that the balance of learning content and activities in the MOOCs was sufficient in promoting their learning. Third, most of the learners (75%) across the four MOOCs agreed that the learning schedule (i.e. lesson plan) implemented in the MOOCs is easy to follow. Finally, most of the learners (79%) also perceived that the learning activities assisted them in better understanding of the learning content.

For technological readiness of Malaysia MOOCs, the readiness was accessed from learners' perception on the following aspects. First, more than half of the learners (54.5%) could access MOOCs during lecture time while most of the learners (83.1%) could access the MOOCs during times outside of lectures. Second, in terms of video streaming within campus, 35.9% of the learners agreed that video lectures could be accessed in class while the remaining were either neutral (35.3%), disagree (27.2%), or strongly disagree (7.8%) on the access of video lectures. Third for Internet access, 78% used Wi-Fi connection on campus to access MOOCs, 18% used personal broadband connections, and 4% used wired connections on campus. Finally, location-wise, most of the learners accessed MOOCs from their hostels (76.5%), while the remaining accessed MOOCs from their homes (9.0%), computer labs (6.9%), lecture halls (4.2%), and other locations (3.4%).

5. Issues & Future Directions

In our initial experiences of Malaysia MOOC, several issues were raised which is described as follows. First, the impact of the types of MOOCs is an important consideration when developing MOOCs. As we selected xMOOCs as the type to be developed, there were several benefits and drawbacks when choosing between xMOOCs and cMOOCs. Although the current trend of MOOC development involves xMOOCs, cMOOCs could be worth looking at as to select the most appropriate type of MOOC that is most appropriate for a particular learning domain. For example, more technical courses such as engineering and physics could be suitable for xMOOCs while cMOOCs could be more useful for social sciences. Another consideration to be made is the type of MOOC should cater for the diversity of learners that would impact the approaches the learners would prefer for learning.

Second, for the integration of local culture, it could be interesting to find out whether this is important for learning or not and to what extent

its integration could affect learning. As Malaysia MOOCs would be targeting a larger audience in the future, this would be a critical issue as some cultural values that are integrated in video lectures could be important to certain countries and regions but not to others. Moreover, in terms of the structure of learning activities, it would also be interesting to investigate whether structured or unstructured learning activities are more appropriate for MOOCs.

Finally, the integration of MOOCs involves the aspects of social, educational, and technological readiness. Although positive results were obtained in our surveys on Malaysia MOOCs, this could be a result of the “novelty effect” where the MOOC was implemented over a semester (i.e. four months) (Sim & Hew, 2010). Novelty effects is a state where students are affected by new technology and student might show a higher attention towards technology that is new to them – in this case, MOOCs (Sim & Hew, 2010). As such, future research could investigate the effect of MOOCs for longer periods in order to determine whether perception of MOOCs changes over time and confirm MOOCs have significant on learning and instruction (Nordin et al. 2010; Embi & Nordin, 2013).

Future directions for Malaysia MOOC development are as follows. First, implementing an adaptive MOOCs based on learning styles would be interesting. In increasing the attention of the learners, an adaptive MOOC that offers learning content according to learning styles could be useful for learning. For example, if a learner were to prefer auditory learning content compared to visuals, the adaptive MOOC could offer content that contains content for auditory learners. Second, it would be interesting to develop MOOCs that can adapt not only to the learning styles of students, but teaching styles of instructors. If the instructor were to prefer a teaching style that is more teacher-centered rather than student-centered approach, the adaptive MOOC could offer teaching content that is personalized according to xMOOCs rather than cMOOCs. Third, analysis such as using social network analysis diagrams could be used to assess the level of participation of learners of a particular task. By utilizing such analysis, educators could identify the tasks that attract the highest/ lowest level of participation as well as learners who contribute the most/ least – thus, develop measures to improve participation levels based on tasks or learners’ level of participation and contribution (Norman et al., 2015). Finally, future studies could apply different technologies in MOOCs such as virtual reality or location-based technology. In sum, we hope that the experiences, issues, and findings discussed in this paper could assist future researchers and educators who are interesting in the development of MOOCs.

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MOOCs in the Philippines

Juvy Lizette M. Gervacio

Abstract

This article aims to present the MOOCs experiences in the Philippines. Specifically, it aims to identify the institutions that offer MOOCs in the country and the nature of the courses that are being offered. It also discusses the initial feedback from the participants and the prospects of developing and implementing other MOOCs in the future.

MOOCs are being offered by two institutions, namely: the University of the Philippines Open University (UPOU) and the Technical Education and Skills Development Authority (TESDA). The UPOU MOOCs cater to a certain profession (e.g. BPO industry and local government units) while the TESDA MOOCs offer courses in the technical/vocational fields.

Initial feedback on UPOU's MOOC on Inter-local Cooperation reveals that majority of the participants agree that the course met their expectations and have a positive view about the design and delivery of the MOOCs.

Keywords: MOOCs in the Philippines

1. Introduction

One of the recent trends in the Information and Communication Technology (ICT) is the increasing use of Massive Online Open Courses (MOOCs). In the definition proposed by OpenupEd, MOOCs "are courses designed for large number of participants that can be accessed by anyone

anywhere as long as they have an internet connection, are open to anyone without entry qualifications, and offer a full/complete course experience online for free.”

According to Digital Strategy Consulting, the Philippines leads the Asia Pacific in internet usage. Filipinos spend an average of 6.2 hours per day on their laptops and 2.8 hours in their mobile devices.

The Philippines also registered 531% growth for internet usage for the last five years as stated in the recent statistics by The Global Web Index. Out of the 100 million people in the Philippines, 38 million are internet users.

Hence, the education sector already starts to use ICT by offering different online courses. Some academic institutions and government agencies are now offering distance learning courses that students can avail.

2. Objectives

This paper discusses the various institutions and types of MOOCS that are offered in the Philippines. Specifically, the paper aims to:

- 1) Identify the institutions that offer MOOCs;
- 2) Identify the MOOCs being offered including the target participants; nature of content; portal, among others; and
- 3) Discuss the initial assessment and prospects for MOOCs in the Philippines.

3. MOOCs in the Philippines

There are two major institutions that offer MOOCs in the Philippines; namely: the University of the Philippines Open University (UPOU) and the Technical Education and Skills Development Authority (TESDA).

3.1. The University of the Philippines Open University (UPOU)

The UPOU was established last February 23, 1995 and had been declared by the Commission of Higher Education (CHED) as the National Center of Excellence in Open Learning and Distance Education for being in the forefront of providing learning for the Filipino people. (UPOU About Us, n.d.)

Its mission is to provide wider access to quality higher education and to adhere to the highest standards of academic excellence, guarantee academic freedom, and encourage social responsibility and nationalistic commitment among its faculty, staff and students. (UPOU Vision and Mission, n.d.)

UPOU offers various higher education courses that students can choose

which include formal and non formal courses. In its commitment to provide more open and accessible education, it has developed and offered MOOCs in order to reach out to more Filipinos not just in the Philippines but all over the world.

The MOOCS of UPOU(As of October 2015)

a) Courses

On February 20, 2013, UPOU and Smart Communications Inc. signed a Memorandum of Agreement for the development of the first MOOC. The MOOC *“Introduction to Mobile Application Development Using Android Platform”* aimed to equip students with necessary skills and know-how to deploy android phone and tablets. (Manalo, 2013) It even gained recognition during the 49th ANVIL Awards last February 26, 2014. It was given the Merit Awards in the PR Programs Merit on a Sustained Basis which was part of the Education/Literacy Category. (Canas-Llamas, 2014).

The subsequent courses offered by UPOU include the following:

e-Service Management Program. The UPOU Faculty of Information and Communication Studies (FICS) offered an additional MOOC on e-Service Management Program which was launched July of 2014. It was developed in partnership with the IT and Business Process Association of the Philippines (IBPAP) and the Asian Institute of Management (AIM). e-SMP is an industry designed program that aims to address the skills shortage in high growth service industries primarily in the IT-BPM sector.

The e-SMP is funded through a grant from the Asian Development Bank (ADB) and is one of the key outputs of the Strengthening Knowledge -Based Economic and Social Development Project. (UPOU offers e-Service, 2014)

e-SMP is composed of six online courses namely Business Process Management 1 and 2, Service Culture, Business Communication, Systems Thinking and the Internship. Two (Business Communications and BPM 101) of the six courses are currently offered by UPOU.

Business Process Management 101. BPM 101 is composed of three modules and runs for six weeks. Module one gives the participants an introduction on business management while Module Two discusses the fundamentals of Business Process Outsourcing. Module Three discusses BPO Engagements.

At the end of the course, the participants are expected to: (a) explain the role and contributions of the IT-BPM sector in the national and global economies; (b) discuss the nature, functions, and applications of business process outsourcing, and (c) analyze how business processing engagements,

operations, and continuity are managed. (Garcia, 2015)

On its first run, BPM 101 had 411 participants. BPM101 is now being offered on its second year.

Business Communication. Business Communication is an introductory course that aims to develop knowledge and skills in effective business communication, discuss the nature and key features of business communication, describe the different modes of business communication and discuss and apply the principles of effective oral and written business communications specifically in the IT and business process management industry. (Business Communication Course Guide, 2015)

Business Communication Course (Part 1) is composed of six modules. The six modules are divided into two units namely: (1) The Communication in the Global Workplace and (2) Oral Business Communication. Under the first unit are the sub-topics on Communication and Competence, Culture and Communication and Communication Model and Channels of Communication. Face to Face Communication, Telephone Communication and Customer Service Calls and Sales Calls are discussed under Unit Two. (Business Communication Course Guide, UPOU MODEL, 2015)

Just like BPM101, Business Communication is already on its second run and the running time of part 1 is six weeks. The Business Communications Course had 429 participants during its first run. (Business Communication Course Site, UPOU MODEL, 2014)

Distance Education Readiness Module. The Distance Education Readiness Module is a short module that will give the participants an overview on what online distance education is and how it feels like to be a distance learner. Since many are more familiar with traditional education, this module will give learners the idea about the e-Learning environment and clarify its differences between online learning and traditional learning. (Distance Education Readiness Module Course Site, UPOU Cube, 2015)

The participant must take this module first before he/she can get the enrolment keys needed in BPM 101 and Business Communication.

MOOCs on Inter-local Cooperation. The Massive Open Online Course on Inter-local Cooperation was the first MOOC of the Faculty of Management and Development Studies (FMDS). It was launched on March 19, 2015. A month after the launching, the Department of Interior and Local Government issued an advisory informing its constituents about the free massive open online course. This aided in the extent of reach of the MOOC's target audience. (DILG Advisory, 16 April, 2015)

Gervacio (2013) indicated in the Technical Proposal submitted to the Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ) that the

target participants of the MOOC were Local Government Units, Government Units involved in Inter-local Cooperation, Non-Government Organizations collaborating with LGUs and groups and individuals involved in government service.

The MOOC on ILC is composed of four modules and each module runs for four weeks. The first module gives the participants an overview on Inter-local Cooperation while Module 2 discusses the Legal Ingredients needed in order to sustain the ILC. Module 3 talks about the critical institutional ingredients while Module 4 discusses the different financial ingredients. (UPOU Cube, 2015)

The first module had more than 300 participants. (Module 1: Introduction to Inter-Local Cooperation Course Site, 2015)

b) Course Contents and Interactivity

The UPOU MOOCs were created using several multimedia learning resources and interactivity tools. This is to enable the participants to learn depending on their respective learning style. The following components provide a brief description of the contents of the UPOU MOOCs.

Learning Resources:

Announcements – The MOOC Team gives announcements and important reminders to the participants through the Announcements

Course Guides – The Course Guide serves as a briefer of the course. It contains the course objectives, outline, materials, study schedule, course requirements and some important reminders.

Video Lectures– Videos are always present in each module. It can be in a form of lecture, visual presentation or screencast.

Lecture Notes – This is where the participants can read the main content of the module.

Study Guides – A study guide is an overview or summary of the module. There is a study guide for each module.

Learning Modules – The Learning Modules contain the main contents of the course.

Podcast – The script of the dialogue is based on the module discussed.

Glossary – It serves as a collection of words commonly used in Interlocal Cooperation.

Reading Materials (Cookbook) – The Cookbook is the holistic collection of the different learning modules.

Specialized Materials – Each module has a specialized material that will guide the participants in their expected outputs.

Interactivity:

Quizzes – At the end of some modules, participants are asked to answer a quiz.

ePortfolio Guide – Participants can opt to create their ePortfolio. This

is a collection of digital artifacts that they want to share (i.e. papers, slideshows, blogs, produced videos, reports/write ups and etc). With the permission of the participant, the ePortfolio can be made available to HR units of BPO companies.

English Proficiency Assessment – Participants must answer the Self Assessment Tool provided in the course site. They can check their English Proficiency Level through the checklist that can be accessed through the link provided.

Discussion Forum – This is where participants can share their ideas and interact with their co-learners.

Online FGD – Participants must attend an online FGD. They can choose from the different FGD schedules provided.

Submission Bin – This is where the participants will submit the required assignment.

Games (e.g. Hangman and Sudoku) – Games are also made available in the course site. This allows participants to have fun while learning at the same time.

c) Certification Schemes

Each course has its own requirements before a Certificate of Completion is issued.

As stated in the course guide of BPM 101, the participants need to:

- 1) Participate in all online discussions (required but not graded)
- 2) Take all the online quizzes (required but not assessed)
- 3) Take and pass online examination.

The online examination have written and oral components. For the oral examination, the participants must videotape themselves and submit the video to the designated site. (Business Process Management 101 Course Guide, 2015)

As for Business Communication, participants must participate in all online discussions, complete one (1) exercise and submit two (2) assignments before he/she will receive a Certificate of Completion. (Business Communication Course Guide, UPOU MODEl, 2015)

For the Inter-local Cooperation, a participant must pass the final assessment before getting the certificate. The final assessment will only be given to participants who express interest in certification. There will be separate certificates for each module. (Certification Process Guidelines, UPOU Cube, 2015)

d) Course Fees

All courses are free of charge. However, if a participant enrolled in Interlocal Cooperation wishes to have a certificate, he/she must pay Php 800 or USD 20 per module.

e) The UPOU's MOOC Portal

The University of the Philippines uses the MOOCs for Open and Distance Education (MODeL) as MOOCs portal. It can be accessed by visiting the UPOU website (<http://www2.upou.edu.ph/>) and clicking on the MODeL icon located at the upper right portion of the screen. After registration, a confirmation email is sent to the learner.



Figure 1: MOOCs Portal of UPOU (Screenshot from <http://www.upoumodel.com>)

3.2. The Technical Education and Skills Development Authority (TESDA)

In a brief history indicated in the TESDA website, the government agency was created by virtue of Republic Act 7796, otherwise known as the “Technical Education and Skills Development Act of 1994”. It aims to maximize the participation of the Filipino workforce so as to improve their technical-vocational skills and equip them with world class competence and positive work values.

In light of the increasing rate of global unemployment, TESDA made use of ICT as an alternative tool thus e-TESDA was launched. e-TESDA is a Massive Open Online Course (MOOC) which aims to improve the technical skills of the working force with less cost.

The e-Tesda FAQs state that the TESDA Online Program (TOP) aims to make technical education more accessible to Filipino Citizens thru the use of internet technology. It provides a more effective and efficient way to deliver technical education and skills development services to the majority with less cost and more reach.

The program's target audience include students, out-of-school youths, unemployed adults, workers, professionals, overseas Filipino workers who are interested in taking TESDA courses at their own pace and own time at the comfort of their desktops or laptop computers.

In order to access the TOP website, one must go to the TESDA website (www.tesda.gov.ph) and click the TOP icon at the right side of the Home page.

a) Courses

The TESDA MOOCs are grouped into nine main categories namely (1) Information Technology, (2) Tourism, (3) Electronics, (4) Agriculture, (5) Automotive, Heating, Ventilation and Air Condition, (6) Trainers Methodology 1, (7) Trainers Methodology 2 and (9) Health Social and Other Community Development Services. (e-TESDA Website, 2012).

The table below shows the number of participants enrolled in each course. Based on Table 1, TESDA has the most number of enrollees in Information Technology.

Table 1: e-Tesda Participants as checked in the e-Tesda Website (<http://www.e-tesda.gov.ph/>) as of June 11, 2015

Categories	Participants
1. Information Technology	
a) Basic Computer Operation	22,913
b) Computer Systems Servicing	
Module 1: Installing Computer Systems and Networks	15,900
Module 2: Configuring Computer Systems and Networks	14,813
Module 3: Diagnosing and Troubleshooting Computer Systems	13,467
Module 4: Maintaining Computer Systems and Networks	8,963
c) Web Development Using HTML5 and CSS3	31,555
d) CAD/CAM Operation	
Creating an Drawing Using CAD Program	13,356
Applying CAD/Cam Program	5,235
e) Animation (3D Digital)	
Use an Authoring Tool to Create an Interactive Sequence	5,762
Produce Key Drawings for Animation	2,047
Create 3D Digital Animation	4,303
f) Microsoft Online Courses	
i. Game Development	
Game Production Basics	3,273
Developing 2D games with HTML 5	1,062

Developing 2D and 3D Games with Unity	1,654
ii. Software Development Fundamentals	4,719
iii. C# Fundamental for Beginners	4,775
2. Tourism	
a) Waiter Servicing	
Module 1: Introduction to Food and Beverage Servicing	3,431
Module 2: Types of Food Service	2,049
Module 3: Preparing Dining Room for Service	961
Module 4: Welcoming Guest	767
Module 5: Presenting Menu and Taking Orders	569
Module 6: Serving and Cleaning Food and Beverage Orders	564
Module 7: Presenting Bills and Bidding Goodbyes	476
b) Room Attendant Servicing	
Module 1: Introduction to Room Service	2,065
Module 2: Taking Guest Orders through telephone	1,086
Module 3: Assessing Guest Orders	410
Module 4: Delivering Guest Orders	401
Module 5: Clean Up Room Orders	636
c) Bus Boy Servicing	
Module 1: Food and Beverage Service	181
Module 2: Identification of Dining Tools and Equipments	225
Module 3: Proper Way Clearing/Bussing Out Soiled Dishes	152
Module 4: 5S of Good Housekeeping	234
d) Housekeeping	
i. Guest Room Attendant Servicing	
Module 1: Getting Ready for Work	3,293
Module 2: Preparing the Housekeeping cart	1,733
Module 3: Entering the Room	735
Module 4: Stripping Beddings	720
Module 5: Making the Bed	979
Module 6: Cleaning the Floor and Furniture	481
Module 7: Replenishing Room Amenities	349
Module 8: Cleaning the Bathroom	467

Module 9: Housekeeping Quality Checks	694
ii. Valet Servicing	
Module 1: Valet Servicing	1,584
iii. Public Area Attendant Servicing	
Module 1: Basic Cleaning Procedures	423
Module 2: Front of the House	343
Module 3: Back of the House	126
Module 4: Handling Chemicals	190
iv. Laundry Servicing	
Perform Laundry Service	2,476
e) Cookery	
i. Preparing Sandwiches	
Module 1: Getting Ready for Work	5,978
Module 2: Setting up the Work Station	377
Module 3: Preparing the Sandwiches	1,339
Module 4: Storing the Sandwiches	308
3. Electronics	
a) Cellphone Servicing	
Module 1: The Cellular Phone Technician	2,563
Module 2: How the Cellular Phone Works	2,085
Module 3: Basic Electronics	2,849
Module 4: Performing Diagnostic and Repair	2,899
b) Solar Night Light Assembly	
Module 1: Solar Power Generation Technology	1,091
Module 2: Basic Electronics	1,160
Module 3: Assembly of Solar Lamp	1,105
Module 4: Testing and Trouble Shooting	357
4. Agriculture	
a) Fruit Grower	
Module 1: Preparing the site for planting fruit tree	1,265
Module 2: Growing Fruit Seedling	1,049
5. Automotive	
a) Diesel Engine Tune Up	

The Diesel Engine	1,441
Set and Install Injection Pump to Engine	2,471
Inspect Injection Timing	486
Bleeding Injection System Components	392
b) Automotive Battery Servicing	
Module 1: The Automotive Battery	1,412
Module 2: Test an Automotive Battery	155
Module 3: Remove and Replace Battery	83
Module 4: Service and Change Battery	131
6. Heating Ventilation and Air Condition	
Packaged Air Conditioner Unit Servicing	7,848
7. Trainers Methodology I	
a) Facilitate Learning Session	6,507
b) Conduct Competency Assessment Tool (needs enrollment key)	
Module 1: Introduction to Trainer's Methodology	
Module 2: Competency Assessment Tool	
Module 3: Conduct Competency Assessment	
Module 4: Perform Post Assessment Activities	
8. Trainers Methodology II	
Curriculum Development	
Curriculum Developer	6,893
9. Health, Social and other Community Development Services	
a) Massage Therapy	
i. Swedish Massage	
Module 1: Introduction to Massage Therapy	7,053
Module 2: Basic Anatomy and Physiology	633
Module 3: Basic Pathology and Microbiology	311
Module 4: Plan and Implement Massage Session	416
Module 5: Perform Swedish Massage	996
ii. Thai Massage	
Module 1: Introduction to Thai Massage	2,413
Module 2: Perform Thai Massage	697

iii. Shiatsu Massage	
Module 1: Introduction to Shiatsu	1,074
Module 2: Perform Shiatsu Massage	395

b) Course Contents and Interactivity

TESDA provides learning modules as well as self-check assessment. All modules except IT Courses are created by TESDA. Once you click the course, it will automatically direct you to the learning modules. Videos are also provided, especially for courses that need demonstrations. The videos serve as supplement to the learning modules. (e-TESDA Website, 2012)

Only the Computer System Servicing Course under Information Technology has a Self-Check Assessment. (e-TESDA Website, 2012)

c) Certification Scheme

TESDA does not give any training certificate. However once the learner thinks that he/she is ready, then he/she may take the face-to-face assessment for National Certification at any TESDA accredited assessment center or venue. (e-TESDA FAQs, 2014)

d) Course Fees

The TESDA Online Program is available for free.

e) The TESDA MOOCs Portal

In order to access the available courses in the TESDA Online Program website, the learner should go to e-Tesda (<http://www.e-tesda.gov.ph/>). After registering, a confirmation mail is sent to the participant.

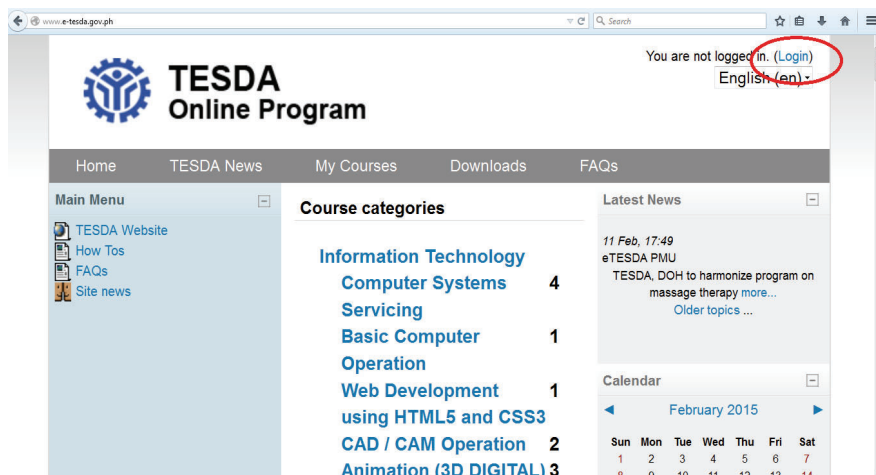


Figure 2: TESDA's MOOC Portal (Screenshot from <http://www.e-tesda.gov.ph/>)

Table 2 shows a comparison between UPOU and TESDA's MOOCs based on its nature, courses offered, target audience, LMS provider, nature of content, schedule, certification, assessment scheme, certification fees and its website.

Table 2: Comparison between UPOU and TESDA's MOOCS

Features	UPOU	TESDA
Description of the Institution	The University of the Philippines Open University (UPOU) was established on February 23, 1995. Its mandate is to provide education opportunities to individuals aspiring for higher education and improved qualifications but was unable to take advantage of traditional modes of education because of personal and professional obligations.	The Technical Education and Skills Development Authority (TESDA) is the government agency tasked to manage and supervise technical education and skills development (TESD) in the Philippines.
Nature of Institution	Government	Government
Courses	Business Process Management 101 Business Communication DE Readiness Test Inter-local Cooperation	Information Technology <ul style="list-style-type: none"> ❖ Basic Computer Technology ❖ Computer Systems Servicing ❖ Web Development using HTML5 and CSS3 ❖ CAD / CAM Operation ❖ Animation (3D Digital) ❖ Microsoft Online Courses Game Development Tourism <ul style="list-style-type: none"> ❖ Food and Beverage Servicing ❖ Housekeeping ❖ Cookery Electronics <ul style="list-style-type: none"> ❖ Cellphone Servicing ❖ Solar Night Light Assembly Agriculture <ul style="list-style-type: none"> ❖ Fruit Grower Automotive <ul style="list-style-type: none"> ❖ Diesel Engine Tune Up ❖ Automotive Batter Servicing Heating, Ventilation and Air Condition <ul style="list-style-type: none"> ❖ Packaged Air Conditioner Unit Servicing Trainers Methodology I <ul style="list-style-type: none"> ❖ Facilitate Learning Session Trainer Methodology II <ul style="list-style-type: none"> ❖ Curriculum Development Health Social and Other Community Development Services <ul style="list-style-type: none"> ❖ Massage Therapy

Target Audience	BPM 101 and Business Communication are made especially for those in the Business Process Management (formerly BPO) industry. ILC's target audience are the Local Government Units (LGUs), Government Units involved in Inter-local Cooperation, Non-government Organizations collaborating with LGUs and groups and individuals involved in government service.	The program is created for students, out-of-school youths, unemployed adults, workers, professionals, overseas Filipino workers who would like to take TESDA courses at their own pace and at their own time at the comfort of their desktops or laptop computers. (What is TESDA Online Program, 2014)
Learning Resources and Interactivity	Course Guides Learning Modules Videos Podcast Learning Guides Glossary Forum Games Diagnostic Tests	Learning Modules Videos Self-Check Assessment
Learning Management System	Massive Open Distance e-Learning (MODeL) Powered by: MOODLE	E-Tesda Powered by: MOODLE Theme by: Newschool Afterburner design by Rocket Theme
Nature of Content	Business Process Management 101 Business Communication Inter-local Cooperation	<ul style="list-style-type: none"> • Information Technology <p>Most of the courses are just linked to a website that further provides instructions/information about the course.</p> <p>Other courses are already developed by TESDA:</p> <ul style="list-style-type: none"> • Tourism • Electronics • Agriculture • Automotive • Heating, Ventilation and Air Condition • Trainers Methodology • Health, Social and other Community Development Services
Schedule	With specific dates for each course and module	Anytime
Certification Scheme	For BPM 101 and Business Communication, the participants will be awarded a certificate provided that they satisfy the requirements of the course. For ILC, the student must pass a final assessment before receiving the Certificate of Completion.	None Certification is conducted through face-to-face assessment for National Certification at any TESDA accredited assessment center or venue

Assessment	Quizzes Assignments Final Examination Tasks	Only the Computer Systems Servicing under the Information Technology has a self check assessment. Other courses do not have an assess- ment tool.
Course Fees	Free For the ILC certification, the fee is PhP800 or USD20 for each module.	Free
Site	For BPM 101 and Business Communication: http://www.upoumodel.com/esmp-2/ For ILC: http://cube.upou.edu.ph/	http://e-tesda.gov.ph/

4. Initial Assessment on MOOCs

In order to determine the effectiveness of MOOCs, a survey was conducted on the MOOC on Inter-local Cooperation of UPOU to gather feedback from the participants. The evaluation survey was composed of five (5) categories; namely: (a) Course Content; (b) Working and Learning Methods; (c) Participants; (d) Achievement of Objectives and; (e) Organization of the Course.

There were about six percent of the total participants who answered the evaluation survey. Based on the results, 95% of the respondent's responses claimed that the course met their expectations. The same percentage said that they can apply the content of the course in their work. About 90% said that they can pass on the knowledge to their colleagues while the same percentage of respondents said that they generally felt positive that they can make good use of what they learned in another context. Majority also said that they can continue working independently with the materials and that they already had concrete ideas on how to apply what they had learned from the module.

On the working and learning methods; majority (95%) of the respondents generally had a positive feedback stating that the content and outcomes of were specific, clear and consistent. About 85% of respondents had positive feedback that the working and learning methods were appropriate to the tasks and suitably varied; while about 92% respondents said that the materials in the course site supported the learning process. There were 83% of the respondents who said that they were able to bring their own experiences and examples into the module. Majority of the respondents said that the module's length was just right.

As for the evaluation of the respondents regarding their co-participants, most of those who answered the evaluation mentioned that the atmosphere among the participants was always cooperative. The respondents agreed

that they were able to benefit from the experiences of other participants and that they will continue to exchange views on this subject with some of the other participants.

On the achievement of objectives; 95% of the respondents said they can now understand ILC better and describe its various configurations. About 85% also said that they can now contribute in starting or sustaining an ILC, prepare a Capacity Development Agenda and develop an ILC Roadmap.

On the organization of the course, 90% of the respondents said that they were satisfied with the way the course was handled. Majority of the respondents from both modules said that the course site was easy to navigate. Majority also said they were satisfied with the materials. About 95% claimed that they were satisfied with the page load speed and the technical support was very good.

5. Conclusion and Prospects

Based on the initial assessment of the MOOCs in the Philippines, it is apparent that the use of MOOCs in the country is still in its infancy stage with two major institutions offering MOOCs which are both provided by government by nature.

The UPOU and TESDA are government institutions which have developed MOOCs in order to provide more learning opportunities for the Filipino people. However, the nature of the MOOCs and their target audience are quite different. While UPOU MOOCs cater to a certain profession (e.g. BPO industry and local government units), the TESDA MOOCs offer courses in the technical/vocational fields.

UPOU's MOOCs utilizes several learning resources and interactivity which include videos, podcasts, games, quizzes, among others; the TESDA MOOCs focuses on learning modules and videos to demonstrate specific skills.

In terms of certification, the UPOU provides certificate of completion only when requirements are met by the participants. On the other hand, TESDA has to conduct face to face assessment to the participants to enable them to get a certificate. The courses for both institutions are free. In one of the courses of UPOU, the certification fee is PhP800 or USD 20 for every module.

The schedules of the MOOCs also differ. For UPOU, their MOOCs have a definite schedule. On the other hand, TESDA offers its MOOCs all year round depending on the learner's own time and convenience.

Initial feedback on UPOU's MOOC on Inter-local Cooperation revealed that 95% of the participants agreed that the course met their expectations and the working and learning methods were effective. The participants also noted that the discussion forum was an effective venue for them to share

their knowledge and experiences.

With these experiences, the prospect for MOOCs is getting brighter for the Philippines. The enactment of the Republic Act No. 10650 or the Open Distance Learning Act last 9 December 2014 provides the signal that the country recognizes the relevance of open and distance learning in the Philippines. It specifically mandates the Commission on Higher Education (CHED), TESDA and UPOU to develop and implement courses that are related to open and distance learning.

The UPOU has recently launched other MOOCs courses on Child Rights Protection and Promotion. It also aims to develop and implement more MOOCs to complement its various degree programs. The UPOU also continue to forge partnerships with other organizations to develop other MOOC courses for the local government units, specifically on disaster risk reduction and management.

On the issue regarding connectivity, the Philippine Government, through the Information and Communications Technology Office of the Department of Science and Technology has launched its project called the “Free Wi-Fi Internet in Public Places.” (DOST-ICT, n.d.) This means that all public places such as parks, hospitals, schools, among others will have free internet available to the public. Hence, this strategy will also provide more opportunities for people to avail of MOOCs.

Although financial sustainability of MOOCs development and implementation could be an issue, it is perceived that more partners see MOOCs as a strategy to democratize access to education. Hence, there is a positive view that more quality MOOCs will be developed in the next few years. However, these courses will be more specific and relevant to the country.

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Thailand OERs and MOOCs country report

Jaitip Nasongkhla, Thapanee Thammetar, and Shu-Hsiang Chen

1. Introduction

The rapid growth of the Internet and technology have created a new educational paradigm. Open learning environments (OLEs) are designed to assist learners in the process of considering multiple perspectives during the learning process. Various open educational learning resources, tools, and pedagogical approaches are used in teaching and learning. Open educational resources (OERs) are one of the examples that represent a global phenomenon in an innovative approach that promote unrestricted access as a possible solution for bridging the knowledge divide in higher education. OERs offer the prospect of an innovative approach to development, dissemination, and utilization of knowledge in teaching, learning, and researching.

Previously, researchers have defined the concept of OER as the “simple and powerful idea that the world’s knowledge [and education are] public good [or social goods] and that technology in general and the World Wide Web in particular provide an extraordinary opportunity for everyone to share, use, and reuse knowledge. OER are the parts of that knowledge that comprise the fundamental components of education – content and tools for teaching, learning, and research” (Atkins, Brown, & Hammond, 2007, p.1; The William & Flora Hewlett Foundation, 2005). The term OER in our perception includes textbooks, course readings, and other learning content; simulations, games, and other learning applications; syllabi, quizzes, and assessment tools; and virtually any other material that

can be used for educational purposes. OER can originate from colleges and universities, libraries, archival organizations, governmental agencies, public organizations (i.e. publishers, or faculty) or other individuals who develop educational resources that they are willing to freely share (Chen, Nasongkhla, & Donaldson, 2014; Nasongkhla, 2014; Nasongkhla & Chen, 2013; Nasongkhla et al., 2014) and which may incorporate the concept of the 5R openness framework as retain, reuse, revise, remix, and redistribute (Wiley, 2014). A very large number of OERs initiatives are currently distributed globally. The well-known OER platforms that are summarized by Watters (2010) include: (1) *OCW Consortium* (renamed to Open Education Consortium), (2) *MIT Open Courseware*, (3) *Khan Academy*, (4) *PSPU*, (5) *OpenStudy*, (6) *Nitxy*, (7) *OER Glue*, (8) *iUniv*, (9) *OCWSearch*, (10) *Smarthistory*, (11) *CK-12*, (13) *Flat World Knowledge*, and (13) *Connexions*. These OER platforms were intended to provide open and accessible educational materials to enhance teaching and learning for a diverse target group of learners.

Another disruptive technology trend is Massive Open Online Courses (MOOCs). MOOCs are open online courses aimed to provide interaction and participation among a large number of global learners. Learners are able to interact with and contact others based upon their own learning interests. MOOCs also create learning opportunities and collaboration from multicultural aspects that relate to several cultural or ethnic groups within a society. The early MOOCs development focused on sharing, connecting, and community, which departed from formats that relied on posted open resources or open content in either learning management systems or social networking sites as connectivist design (Siemens, 2005) including: (1) aggregating, (2) remixing, (3) re-purposing, and (4) feeding forward principles. This principle led the early MOOCs to become cMOOCs in order to distinguish them from the current movement of xMOOCs that were initially introduced to focus on open content, standardized assessment, and scalability. By definition xMOOCs are known to be essentially non-fee based courses with a potentially unlimited number of students who participate online. In recent years the increasing popularity of xMOOCs has led to the formation of a rapidly growing number of providers such as *CanvasNet*, *Coursera*, *CourseSites*, *edX*, *FutureLearn*, *Udemy*, *Open2Study*, *OpenupEd*, *Khan Academy*, *YouTube Education*, *iTuneU*, *TED Talks Education*, *Google Education*, and many others.

Accordingly, OERs and MOOCs have been influencing the global landscape of higher education institutions. Many previous studies have examined the areas of perceptions, opinions, attitudes, impacts, or success factors of OERs and MOOCs either from a management perspective or the influence media design on teaching and learning. Although OERs have been widely known and adopted around the world in the past decade, a clear OER description, concept, and proper open license usage are still

need to be well defined in a Thai context. The benefits, barriers, and pedagogical approaches of OERs and MOOCs are discussed among Thai scholars in some studies. For example, some Thai educators perceive OERs as a tool for academic and collaboration activities and as being useful and accessible as open content that can be integrated to teaching activity, (Jongsermtrakoon & Nasongkhla, 2015). Some have identified four aspects of OER pedagogical perspectives from Thai scholars, including (1) a basic understanding of OER, (2) ownership as an academic integration, (3) a culture of sharing and creating quality open content from classroom, and (4) an inquiry-based learning and group investigation instructional design for OER (Nasongkhla & Chen, 2013). When perceiving MOOCs as disruptive technology and the evolution of online learning, several barriers such as infrastructure, technical issues, resistance to change, culture of sharing, intellectual property are still major factors that keep resistance and hesitation to move forward. In addition, there are usually some issues of concern for MOOCs development from the management perspective including: (1) accreditation, administration, regulations, (2) high dropout rates, (3) privacy, (4) piracy, (5) proficiency / evaluation, (6) intellectual property, and (7) quality assurance.

Many researchers have conducted studies to understand how these disruptive technologies have impacted teaching and learning and examined the needs to move to the next level for global digital citizens. For example, Gasevic, Kovanovic, Joksimovic, and Siemens (2014) have analyzed the main research themes that could form a framework for the future MOOCs research. These themes include: (1) student engagement and learning success, (2) MOOC design and curriculum, (3) self-regulated learning and social learning, (4) social network analysis and networked learning, and (5) motivation, attitude, and success criteria. The learning materials such as reading article, video, podcast and more that can be used in the online MOOCs environment may be from either open content or some learning materials that are created by faculty members or students. Therefore, in order to understand the impact of these disruptive technologies, this report aims to examine the current status of OERs and MOOCs in the context of Thailand.

2. Thailand Higher Education

The Office of the Higher Education Commission (OHEC, 2013) is directed by the Higher Education Commission (HEC). OHEC plays a key role in managing and promoting Thai higher education on the basis of academic freedom and excellence. Its mandates are as follows:

- 1) Formulate policy recommendations, higher education standards, higher education development plans, and handle international education;
- 2) Devise criteria and guidelines for resources allocation, establishment

- of higher education institutions and community colleges, and provide financial support
- 3) Coordinate and promote human resources development and student capabilities, including handicapped, disadvantaged, and talented students in higher education institutions, and coordinate and promote research activities for the generation of new knowledge to support the national development;
 - 4) Monitor, inspect, and evaluate outcomes of higher education management as assigned by the Higher Education Commission, and compile data and information on higher education;
 - 5) Serve as secretariat to the Higher Education Commission; and
 - 6) Perform other functions as prescribed by and to carry out other tasks as assigned by the Minister of Education or the Council of Ministers.

The numbers of higher education institutions recognized by the Office of the Higher Education Commission are: (1) 79 public higher education institutions, (2) 19 community colleges, and (3) 71 private higher education institutions. Moreover, Thai Qualifications Framework (TQF) for higher education include: (1) knowledge, (2) numerical analysis, communication, and IT skills, (3) interpersonal skills and responsibility, (4) cognitive skills, and (5) ethics and moral.

Currently, there are four public organizations under OHEC's supervision including: (1) Inter-University Network (*UniNet*), (2) Thailand Cyber University (*TCU*), (3) Chulabhorn Research Institute, and (4) 10 Centres of Excellence. In addition, the five domains of learning outcomes from Thai TQF provide guidelines for these public organizations at contributing to social and economic development for the new Thai higher education system that focus on the quality of research, quality of teaching, internationalization, and employability of graduates.

3. ICT in Thailand

Thailand ICT policy and master plan have been initiated since 1992 when the Thai government set up the National IT Committee (NITC). The first National IT Policy called *IT2000* was intended for the country to utilize ICT to achieve economic prosperity and social equity.

The *IT2010* was a second ICT policy that focused on enhancing the economy and quality of life for Thai people and for leading Thailand towards a "Knowledge-Based Society and Economy." There were five main flagships (5 e's strategy) that functioned to achieve the goals of *IT2010* as summarized by Laohajaratsang (2010), which has set the long-term policy direction at the macro level.

- 1) e-Society: covering issues such as digital divide, quality-of-life, culture, health, public participation
- 2) e-Government: including public service via electronic service delivery, employment, legal infrastructure
- 3) e-Commerce: with special focus on e-service including not only finance, tourism and IT services, but also other industries
- 4) e-Industry: focusing on e-manufacturing and IT-related industries, plus issues such as standardization
- 5) e-Education: including issues of life-long learning, computer literacy, human resource development, virtual education, creation of useful information, contents and knowledge.

Currently, Thailand has moved to its third ICT development phase called *ICT2020* or *Smart Thailand 2020* (Figure 2).

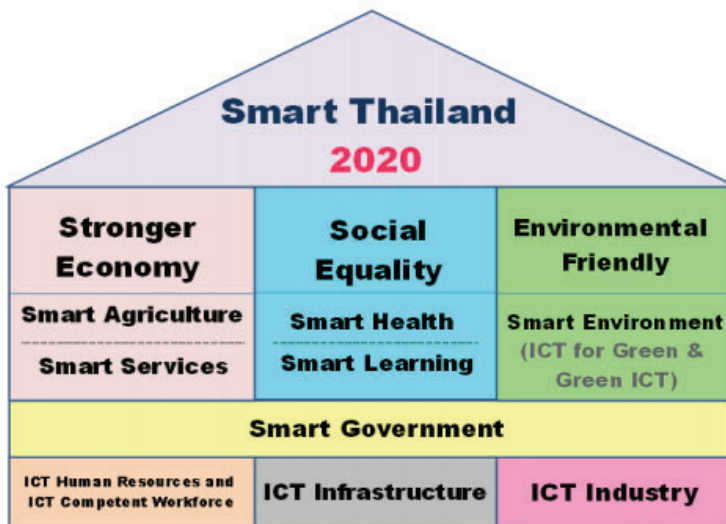


Figure 1: ICT 2020 Framework
Image adopted from www.mict.go.th

The *ICT2020* or *Smart Thailand 2020* is focused on moving Thailand from “Knowledge-Based Society and Economy” to “Knowledge and Wisdom-Based Economy and Society”. The vision of Smart Thailand states: “ICT is a key driving force in leading Thai people towards knowledge and wisdom and leading society toward equality and sustainable economy” (NECTC, NSTDA, & MST, 2011, p.1). The development strategies to achieve *Smart Thailand 2020* include as follows:

- 1) Universal and secure ICT and broadband infrastructure
- 2) ICT human resources and ICT competent workforce
- 3) ICT industry competitiveness and ASEAN integration

- 4) Smart government: ICT for government service innovation and good governance
- 5) ICT for Thailand competitiveness and vibrant economy
- 6) ICT to enhance social equality
- 7) ICT and environment: the Green ICT

These development strategies are meant to help the government, public, and private sectors to examine and anticipate the needs of the future technological changes for individuals, economy, industry, and social transformation in the country. The Smart Thailand 2020 has considered both the quantity and quality of development along with social justice in the directions of ICT development, including: (1) regional economic integration, (2) demographic change, (3) energy, food security and environmental crisis, (4) administrative decentralization, (5) employment and the labor market in the future, (6) the second decade of educational reform, and (7) values and conflicts in society in order to ensure sustainable and stable development for the country.

4. eLearning and Distance Education Development in Thailand

Back to early 80s, a number of Thai educators had adopted Computer-Based Training as part of an early development stage of eLearning practice. After the Thai government implemented *IT2000*, Thai educators started using new media resources into their daily teaching and learning. In order to solve the barriers and challenges for Thai educators and higher education institutions, the Thai government had launched many projects such as *SchoolNet*, *UniNet*, *TambonNet* and *Distance Learning Foundation* to bridge the digital divide. According to an online newsletter *The Nation* (2012), 67 distance-education programs at nine institutions have been reviewed by the OHEC. These include 28 programs for bachelor's degrees, 28 programs for master's degrees, 8 programs for doctoral degrees, and 3 programs for graduate diplomas. Assumption University was the first international university offering international e-learning program, while Rangsit University was the first university offering Thai e-learning programs in Thailand.

Currently, there are 9 regional universities as e-Learning hubs under the Thai University Network including North: Chiangmai University, Naresuan University; North East: Khon Kaen University, Suranaree University of Technology; Central: Chulalongkorn University, King Mongkut's University of Technology Thonburi, Burapha University; South: Walaiak University, Prince of Songkla University; which have collaboratively worked together to create open online courseware (OOCW) and open educational learning resources that was funded by the TCU project to share, distribute, and promote Thai OOCW and OER throughout Thailand and the world. TUC

plays a role as an agency to connect universities and funding supported by the Thai Higher Education Commissions (HEC) to provide content in terms of open lifelong learning and online learning. In addition, Thailand Cyber University (TCU) has established a “Common Infrastructure” to connect government universities within the country. This common infrastructure enables sharing of the educational resources, thus serving as a national hub of Thai Open Educational Resources (Thai OER). This may be an opportunity to foster the regional integration of new ASEAN educational market.

4.1. Institutional Practices of e-Learning

One of the representatives from TCU Project has discussed the existing Thai e-Learning, and how Thai e-Learning can be transformed and improved to increase the quality of higher education through e-Learning (Theeraroungchaisri, 2012). The TCU project aims to develop and deliver online courses through UniNet and to provide a virtual library. The TCU project has initiated a movement to support digital assets among university network since 2005. The statistical summary of the Thai Cyber University (Table 1) showed a 10-year record from 2005 to 2014 that TCU hosts 811 courses (17 curriculums), with 185,804 registered (185,266 students, 538 teachers), and includes 45 participating university/institution members.

Table 1: The statistical summary of Digit Assets

Number of registered users	185,805
- Student	185,226
- Teacher	538
Number of Open courseware	811
Number of Full curriculums	17
Number of Universities/Institutions joining TCU consortium	45

In addition, there are number of e-Learning websites created by different types of institutions including government institutes (74%), private institutes (19.3%), and business institutes (6.45%). Moreover, the numbers of e-Learning websites by region include Centre (64.51%), Northeast (12.90%), North (9.68%), and South (9.68%).

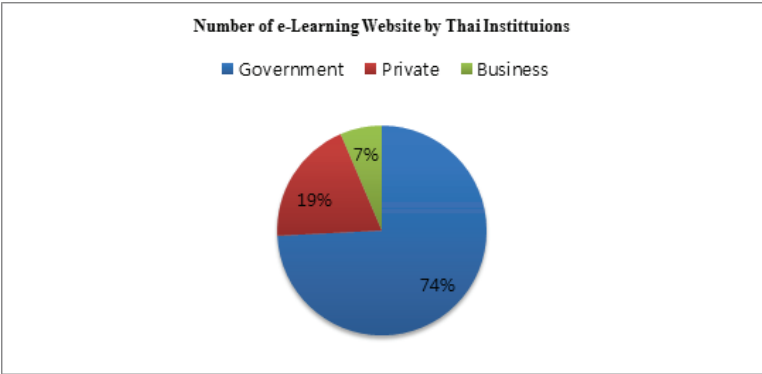


Figure 2: Number of e-Learning Website by Thai Institutions

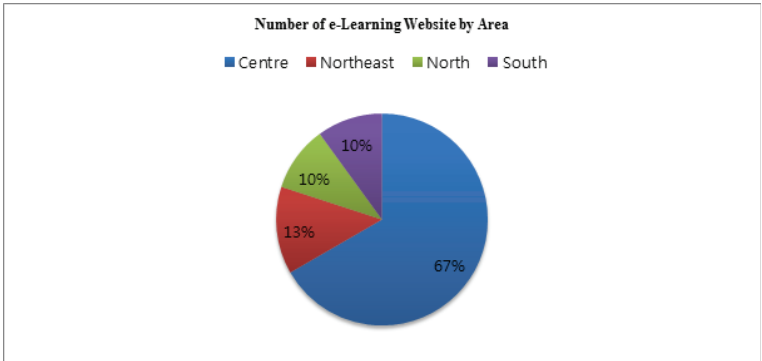


Figure 3: Number of e-Learning by Area

4.2. Thai OERs and MOOCs Policies

Currently, there are no official documents regarding OERs and MOOCs design and development from the Ministry of Education or Ministry of Higher Education in Thailand yet. Pooparadai (2012) has discussed the “ICT Smart Thailand 2020” policy and practice in relation to OERs from a government perspective. She has discussed major issues and challenges including: (1) learning paradigm, (2) accessibility, (3) skills, and (4) content that may need to addressed in order to consider future OER development. In addition, the Ministry of Education has announced there will be funding of around 195 million Baht (approximately Euro 4,966,760) to members of the Thai University Network who are willing to create and develop the open content. The issues at this announcement will focus on content development only. Moreover, university social responsibility (USR) was discussed among Thai scholars that USR should be considered as part of an university management process and its university strategic planning in order to foster the OER and MOOCs development (Chen et al., 2014; Nasongkhla, 2014).

4.3. Thai OERs and MOOCs Practices

In the context of Thailand, some Thai scholars are seeking support for their teaching and learning to further fulfill the social needs in the current education paradigm. For example, some of Thai scholars have played a role as a social entrepreneur to address the social needs whether it was focused on the economical, environmental, or social-cultural contributions. Some of them have perceived producing OERs and MOOCs as part of their individual social responsibility as a way to sustainable future education. When considering embracing OERs and MOOCs into the context of Thailand, some Thai scholars have raised the issues of pedagogical approaches and OER media design for enhancing teaching and learning.

Our research team first examined the current movement of OERs and MOOCs development at a government level. A list of OERs is provided on Table 2. These OERs sites were funded by the government, which aimed to provide open and accessible content to Thai citizens for local and community development. After examining the OERs development from a government perspective, a current development of OERs from non-governmental organizations (NGO) and institutions were further illustrated. There were only two projects from NGOs (see Table 3). Moreover, there are currently five projects that were initiated by institutions. Some of them focus on open content development as structure from open learning university network.

Table 2: Government

Name	Description	Content Format	Pedagogy	License Type	URL
CAI Studio	A learning platform that provides an open content and media at no cost.	Interactive media	Self-directed learning	Not Available	http://www.caistudio.info
e-Learning Website	The preparation of the content of the e-learning system distance learning via satellite.	Video clip, power point, text based	Self-directed web-based learning	CC-BY-NC-ND 3.0 Thailand	http://edltv.thai.net/
Field Trip	An open platform of virtual tour learning.	Lesson plan, images, map, panorama, video, text based, games	Self-directed learning	CC-BY-NC-ND 3.0	http://fieldtrip.ipst.ac.th/
SciMath	SciMath aims to provide learning materials in	Video, Audio	Self-directed learning	Copyright	http://www.scimath.org/

	science and mathematics for teachers, students, parents, and individuals.	podcast, Journal, Text based			
South eLearning Project	An eLearning Project that create by southern part of Thailand, which intend to provide an open content to its target learners.	Class presentation, test & quizzes, text based, e-learning	Self-directed learning	Not Available	http://south.psu.ac.th/
Thailand Cyber University (TCU)	TCU, funded by the Commission of Higher Education, Ministry of Education in Thailand, aims to support cooperation and collaboration among universities in order to promote and support online distance education (e-Learning) in Thailand. Presently, TCU is offering over 800 freely available course on the website.	Video on demand, Multimedia, Interactive	Self-directed web-based learning	Not Available	http://www.thaicyberu.go.th/

Table 2: Government (continue)

Name	Description	Content Format	Pedagogy	License Type	URL
Malay Teaching Platform	A teaching learning platform that is a collaborative project among NECTEC, border patrol police, offices, and education centers outside of school.	Video clip, power point, text based	Self-directed learning	Not Available	http://mala.yu.nectec.or.th/
NECTEC – Karen	A website provides open learning content for Karen, which is a collaborative project between NECTEC and Border Patrol Police.	Lesson plan, images, map, panorama, video, text based, games	Self-directed learning	Not Available	http://karen.nectec.or.th/karen_index.php

Table 3: NGO

Name	Description	Content Format	Pedagogy	License Type	URL
Krua Baan Pim	A website that provides open content on the cooking recipes of Thai cuisine. This is an OER development from private	Video clip, text based	Self-directed learning & Web-based learning	CC-BY-NC-ND 3.0 Thailand	http://www.pim.in.th/

	sector that receives the revenue from advertising.				
trueplookpanya	A open TV channel that focuses on the subject areas of (1) Early Childhood: Children knowledge/ People and the environment/ Natural Environment/ Learning about environment, (2) Primary and Secondary school: Thai language/ Mathematic/ Science/ Social Study/ Health and Physical Education/ Arts/ Career and Technology/ Foreign Language, and (3) Learning activities: Scout and Girl Guide/ Out-of-Class learning activities/ Non-formal Materials for Developing.	Video based, test, quizzes, audio podcast, images	Self-directed learning & Web-based learning	CC-BY-NC-ND 3.0 Thailand	http://www.trueplookpanya.com

Table 4: Institutions

Name	Description	Content Format	Pedagogy	License Type	URL
Chiang Mai University (CMU online)	CMU's initiative on OpenCourseWare and OER (with some of free courseware, learning objects, and video lectures), additionally free download games as part of innovative OCW.	e-Learning	Self-directed learning & Web-based learning	Copyright under university intellectual property	https://elearning.cmu.ac.th/
Open Learning University Network (OLUN)	An open content and open online course that was developed by Innovative Educational Technology Research Center (iNET), Faculty of Education at Chulalongkorn University under concept of university network.	Video clip, PDF, PPT,	Case study, Collaborative learning, project, discussion, role playing	Copyright	http://olun.cu-inet.org
OpenLearn System	A system that modified from Moodle was developed by Innovative Educational Technology Research Center (iNET), Faculty of Education at Chulalongkorn University. The OpenLearn System consists of lecture archives that were opened to	Video Clip, PDF, PPT.	Self-directed learning	CC-BY-NC-ND 3.0 Thailand	Not Available

	public under Internet Protocol Television (IPTV) or Video on Demand (VOD) system. Along with this attempt, Wikipedia of Education in four areas of (1) Curriculum and Technology, (2) Educational Policies Studies, (3) Arts & Music, and as well as (4) Research and Psychology were made openly available to teachers and educators.				
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Table 4: Institutions (continue)

Name	Description	Content Format	Pedagogy	License Type	URL
Sripatum University (Sripatum e-Learning)	SPU is now into new era of its elearning process since 2009 when the Office of Online Education (OOE) was established. SUP-OER employs a simple concept, which is to provide an alternative free education for personalized study and lifelong learning. SPU-OER enables anytime and anywhere self-study with the need of internet connection and basic computer equipment. SPU-OER is offering about one thousand freely available courseware in various areas on SPU Moodle LMS and through quality online services from the partners such as Thailand Cyber University (TCU).	e-Learning	Self-directed learning & Web-based learning	Copyright under university intellectual property	http://clearning.spu.ac.th/
Sukhothai Thammathirat Open University	Open textbook in Thai language and eLearning course that initiate at institutional level.	e-Learning	Self-directed learning & Web-based learning	Copyright under university intellectual property	http://www.stou.ac.th/Eng/

4.4. MOOCs in Thailand

Another review was examined of the major MOOCs providers that Thai universities participated. Table 5 provides information on which MOOCs platform that currently Thai universities are involved with. Accordingly, *iTuneU*, *TedTalk* and *Youtube* were the major platforms for Thai universities preference. For example, Thai Translator and TEDxChiang Mai adopted and localized the existing TED Talks video and translated them to meet the needs of Thai citizens. Another localization example would be the translation of MIT OpenCourseWare in the Faculty of Engineering at Chulalongkorn University. This may be due to the flexibility of open content creation and distribution. When examined from an open source perspective, some universities use Moodle or Blackboard as the learning platform and learning management systems (LMS). Some of the open video clips were published on Youtube as the Thai MOOC channel.

Table 5: MOOCs in Thailand

Major MOOC Providers	Thai University Participation
Coursera	Not Available
Coursesite	Not Available
edX	Not Available
Future Learn	Not Available
iTune U	<ul style="list-style-type: none"> • Assumption University • Chulalongkorn University • Khon Kaen University • Rangsit University • Sripatum University • Suan Dusit Rajabhat University • University of the Thai Chamber of Commerce
Open Education Consortium	Not Available
Openuped	Not Available
TedTalk	Thai Translator TedxChiangMai
Youtube	Thai MOOC

4.5. Issues & Future Directions

The current issue in Thailand is that there is no formal initial practice of MOOCs. Most of the current research investigation has been focused on developing and implementing open contents. However, ongoing research is an attempt to see how faculty members' attitudes towards their behaviors

to open their contents. Some concerns of university executives are how the university intellectual property can be balanced with the openness. As seen in some cases though university policy does not allow for faculty spending their time and content on MOOCs, but some individual members open their contents for either public use or taking funding support from grant donor. In addition, legal issues, funding support, institutional arrangement, and motivation for content providers, and attention to specific needs group remain as major challenges for future design and development of OERs.

There are several future directions that Thai HEIs should take into consideration. For the future direction, three areas should be considered to move further in terms of fostering OER and MOOCs development in Thailand. First, open learning from both the learning environment and management administration aspect in Thai higher education institutions. Second, open content guidelines whether it is created from scratch or adopted from existing content. Third, distance education backbone consideration. The questions to consider is how OERs and MOOCs could support the existing Thai distance education and eLearning programs and move to an open innovative approach in terms of openness for the future of education. Last but not least, future directions should conduct and examine from both top-down as policy and strategy development and bottom-up as open pedagogical design and practices toward future openness of OERs and MOOCs.

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Part III

MOOCs in Europe

A Danish international MOOC in Indonesian professional care education

Mie Buhl, Lars Birch Andreassen, and Henrik Jensen Mondrup

1. Introduction

This article will present the planning of a Danish designed MOOC which shall support a NGO educational programme for professional caregivers in Indonesia initiated by a Danish organisation and in collaboration with Indonesian stakeholders. Firstly, a general overview of MOOC will be presented. Secondly, pedagogical models for cMOOC and xMOOC and the supporting learning theories will be discussed, including a pedagogical model drawing on Scandinavian ideas of learning as an activity of knowledge construction through project- and problem-based processes in relation to MOOC. Thirdly, the particular case will be introduced. Thus the paper does not represent MOOC activities in the formal educational system in Denmark. Rather the case exemplifies a Danish approach to implementing educational programmes in another country supported by MOOC.

Today, many educational institutions around the world are considering establishing massive open online courses, MOOCs, as a part of their educational activity. The widespread adoption of MOOCs is a development, which have taken place during only a few years. The original development of MOOCs actually happened outside of the established educational institutions. In the early years of MOOCs, at a time where only a few MOOCs had actually been carried out, McAuley et al. (2010) defined these main characteristics of a MOOC:

“a MOOC integrates the connectivity of social networking, the facilitation of an acknowledged expert in a field of study, and a

collection of freely accessible online resources. Perhaps most importantly, however, a MOOC builds on the active engagement of several hundred to several thousand “students” who self-organize their participation according to learning goals, prior knowledge and skills, and common interests. Although it may share in some of the conventions of an ordinary course, such as a predefined timeline and weekly topics for consideration, a MOOC generally carries no fees, no prerequisites other than Internet access and interest, no predefined expectations for participation, and no formal accreditation.” (McAuley et al. 2010, p. 4)

McAuley et al. emphasizes the free approach in every sense: everyone who wants may participate; they may do it as much and in which way they want; and they may unfold their activity anywhere they want, which could be at the original MOOC site, or in own blogs, Twitter or other online groups.

In the years since McAuley et al.’s description of the term, MOOCs have developed into a large phenomenon, with established educational institutions offering many of their courses free for everybody who wishes to participate. At the same time, the current development of MOOCs has seen two distinct directions.

One direction is the so-called c-MOOCs, defined by a participative pedagogical model and “based on the explicit principles of connectivism (autonomy, diversity, openness and interactivity) and on the activities of aggregation, remixing, repurposing and feeding forward the resources and learning” (Rodriguez 2012). This is generally speaking the tradition, which McAuley et al. is describing.

The other main direction is called x-MOOCs - or in Rodriguez’ terms “AI Stanford like courses”, named after the first open offer by the University of Stanford, which was a course on artificial intelligence (AI), which attracted 160,000 registered students. Rodriguez points out that xMOOCs are generally offered by established educational institutions and to a higher degree based on a cognitive- behaviourist pedagogy (Rodriguez 2012).

The experienced MOOC developers, Colin Milligan and Allison Littlejohn, points out that “MOOCs present a potentially useful mechanism for supporting and enabling professional learning, allowing opportunities to link formal and informal learning” (Milligan & Littlejohn 2014). Milligan and Littlejohn also state that there is a need for developing the understanding of the effectiveness of MOOCs as professional learning environments.

Milligan and Littlejohn studied the learning behaviours of health professionals within a MOOC on “Fundamentals of Clinical Trials”, which was a MOOC offered through the MOOC platform edX. In their study

they found a general mismatch between participants' learning intentions and their learning behaviours. "The study found little evidence of professional learners routinely relating the course content to their job role or work tasks, and little impact of the course on practice." (Milligan & Littlejohn 2014).

2. Background

The MOOC case presented in this article is an example of a Danish Non-governmental initiative by the social organization FairstartGlobal. FairstartGlobal was established in 2012 by the two Danish founders Niels Peter Rygaard and Morten Jac and is based on a collaborative programme Fair Start, which was developed in 2008-10 by psychologist Niels Peter Rygaard together with international research-based networks.

The aim of the programme is to help care-givers to improve children's development all over the world. The scope of the organization's activities is globally more than 100 million children and youth who are without parents, or who receive no daily care from them. In this situation, caregivers have a significant role in the children's lives. The care-givers who are often under-paid and not supported much by government have no access to quality care education. This creates a situation with almost no money or manpower and where the few resources are often wasted. The organization FairstartGlobal has a global perspective and comprises educational projects in countries all over the world including Indonesia, Vietnam, Thailand, Myanmar and China.

A new and next step for the organization is to develop a programme by utilizing information technology to create a MOOC for educating Indonesian trainers of care-givers and further the programme to a model for other developing countries. To succeed this new step the initiative Indonesian FairstartGlobal collaborates with local partners, the consulate and the Danish embassy in Jakarta.

When starting the development of new programmes, FairstartGlobal draws on five basic elements necessary when initiating the project in a new country, which are:

- Approval from the local government or embassy regarding the implementation of the programme.
- A strong local and professional partner organization (NGO or caregiver).
- A group of local bilingual programme instructors.
- Danish and local support for the co-financing of translation and implementation.
- If possible – the involvement of local scientists and professional care institutions.

(http://www.fairstartglobal.com/?page_id=11)

These elements emphasize the importance of both a strong local foundation and governmental approval of the programmes as well as support from Danish foundations. Thus, the organization relies on financial support from foundations, corporations and other donors.

2.1. Social, educational, and technological readiness to MOOCs

When it comes to technological readiness the Danish as well as Indonesian readiness are to be considered. The development of the MOOC will be conducted from Denmark. But the implementation of the programme giving the target group access will depend on the Indonesian technological readiness. The social readiness of the target group is partly dealt with in the collaboration between the stakeholders (cf. the five elements above). However, there will be challenges in making the right conditions for the students to enroll and stay active during the programme. These challenges address the pedagogical field as a whole and will be a meeting between Danish and Indonesian educational paradigms. When developing the caregiver training programme for other countries issues of pedagogy and learning will of course be of importance.

- What are the cultures of learning in the Indonesian system?
- How should the curriculum of the course be developed for the particular domain of care-givers?
- How should the competences of the learners be met?
- How should the programme be organized?
- How should the learning content be organized?

These sorts of questions are based on the pedagogical philosophy and knowledge of educational science as well as technological possibilities connected to the countries in question.

2.2. Pedagogical models of MOOCs

MOOC programmes are developing fast. Their pedagogies are roughly divided between the behaviorist approaches (xMOOCs) and the connectivist approaches (cMOOCs) as described above. The pedagogical philosophy underlying MOOCs are, however a hybrid of different pedagogical approaches. One major question is how to deal with the fact that the intake of students may be very high, but the number of students completing the courses is low. Does that mean that a particular MOOC is a failure or does it mean that the idea of learning and passing courses have to be reconsidered?

Basically, the question of evaluation and assessment is to be asked: When is something learned? This question reveals the learning paradigm behind the design and provides very different ideas of how people learn.

- Is it when a change of behavior is observed? In that case the pedagogical approach is of a behavioristic nature and assessment may easily be made through e.g. multiple choice questions.
- Is it an enhancement of cognitive capacity through mental processing and representation? In that case the pedagogical approach is of a cognitivist nature and assessment may be conducted through e.g. the recognition of the structure of e.g. scientific object.
- Is it when an experience has been actively met and new patterns for understanding are generated? In that case the pedagogical approach is of a social constructivist nature and assessment may be conducted through negotiating meaning-making and knowledge construction in e.g. a case.
- Is it when information and source can be connected and reflected? In that case the pedagogical approach is of a connectivist nature and assessment may be conducted through e.g. selecting, organizing and reflecting information.

These paradigms represent different developments in the landscape of learning theories where MOOCs are often connected with either behaviorism or connectivism.

2.3. Connectivism

Along with the emergence of MOOCs, the latter paradigm of connectivism has been introduced as a new learning theory (Siemens 2005). Siemens criticizes existing learning theories to be inadequate for the digital age. He proposes connectivism as an alternative contemporary approach to understand the late modern community, where experiences to a large extent are mediated, and knowledge does rather generate in complex and random occurrences than in linear and logic processes. He draws on theories of chaos, network, complexity and self-organization. Digital technology is metaphorically equated with the brain as a neural network and based on the insights from the neuro sciences. The general idea is that knowledge is not of a static nature but is rapidly changing in processes of continuing learning. Thereby, learning becomes a sort of managing of accessible information and the processes of that can proceed in human as well as non-human systems (e.g. the processing of information in a computer).

However, Siemens suggests that “the starting point of connectivism is the individual” (2005). Thereby he takes the starting point in personal

knowledge which comprises an individual network. This individual network feeds into organizations and institutions, which in turn feed back into the network, and then continue to provide learning to the individual. The connectedness of the learning process is emphasized as both being a cycle of knowledge development in person, to network and to organisation. This allows the learners to remain current in their field through the connections they have formed.

Siemens describes connectivism with the following principles:

- Learning and knowledge rests in diversity of opinions.
- Learning is a process of connecting specialized nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know more is more critical than what is currently known.
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision (Siemens 2005).

When connectivism is transformed to learning principles for a MOOC, the focus will be on the activities of the learner, and the learner's activities will be the main driver for the learning process. The learner will be responsible for sharing and discussing information, ideas and knowledge with colleague learners.

Siemens could be criticized for overlooking the learner's criteria for decision-making and how those criteria come about. Is all learning relevant learning, are all decisions good decisions? Is learning alone a formal process of being able to learn or should there be standards for the quality of the decision-making? Is all knowledge good knowledge?

2.4. Behaviourism

In many ways the connectivism paradigm contrasts the learning paradigm of behaviorism. The behaviorist paradigm is based on the basic idea of more or less complex experimental theory of stimulus-response (Pavlov, Skinner), where the learner responds on input from the teacher, and

where the learning depends on the circumstances in the environment rather than the learner's activity. Learning is so to speak beyond the learner's control. Though this approach to learning has been subject to criticism from other psychologists and pragmatists and replaced by activity theory (e.g. Vygotsky, Dewey) and social learning theory (e.g. Lave & Wenger) (Dalsgaard 2005), then the use of pedagogical models drawing on ideas of the teacher teaching curriculum as the main activity followed by automatically marked quizzes, discussion posts and pass/fail tasks in processing learning and the learners as recipients of knowledge is nevertheless widespread (Wilfried et al. 2014).

What is seen in the currents of the pedagogical models of cMOOC and xMOOC respectively is a basic difference between ideas of how learning happens. When discussed, it easily comes to a 'pro et con' (for or against). However, the practice of designing pedagogical models for a MOOC may be more nuanced. Recent research shows that there is a move away from the dichotomy between xMOOC and cMOOC towards a multiplicity of approaches, where various design of pedagogical models develop (Wilfried et al. 2014). The worldwide vision of online courses for everyone implies considerations of the learning content as well as the learning cultures of every enrolling student.

There is no worldwide consensus of pedagogical models and if your experience with schooling is learning by repeating your teachers' input, a connectivist MOOC assignment will become an insurmountable barrier to overcome. Skills for participation and social learning activities take time to achieve. Another challenge is the knowledge domain in the programme of a particular MOOC. Are all knowledge domains suitable for one or the other pedagogy?

Bayne and Ross have identified three challenges to the design of pedagogical models for MOOC: 1) the role of the teacher, 2) learners' participation and 3) assessment (2013). Each challenge represents basic questions from many years of educational science and research and is actualized by the increasing implementation of it-based education.

2.5. Social learning theory

The Scandinavian orientation towards a social constructivist approach to learning acknowledges both the social and participatory approach to learning and the role of the teacher as an important moderator of the students' learning processes. The activity theories of learning play an important role in the planning and moderation of students' learning activities. The organization in problem-based projects is based on the idea that knowledge is constructed in the meeting between the learner and the learning content and is processed by real life problems which become

object for investigation and discussion. The role of the teacher is of a moderating nature rather than a facilitator. As moderator the teacher takes an active part in discussions with groups of learners and the learners are responsible to move the process of investigation forward. Feedback from peers, theoretical contributions from the teacher and a pedagogical framing of the process to scaffold the learner's activities are crucial drivers to forward the process. Here the final assessment measures the learner's competence in identifying and analyzing problems from a theory-based and problem-solving approach and to explain the criteria for choices and decisions.

Using this as a pedagogical model for a large scale programme like MOOC is of course challenging this pedagogical model. A recent study on how students interact and collaborate in a MOOC course show that the large scale make students search for other students with whom they share goals (Kvist Andersen et al. 2014). The scaffolding activities of the teacher could be practiced by adding posts with important learning patterns in order to make students carry on progress their learning process. The authors point out that a social learning approach based on the social constructivism is possible to proceed. However the crucial moderation by the teacher requires several assisting teachers to overcome the many paths of posts (ibid). This learning approach is based on a culture for discussion and critical thinking and the extent to which the paradigm might be implemented in every context must be carefully considered. The circumstances that need to be taken into account, e.g. cultures of the learners and the subject matter, are crucial to succeed this approach to learning.

3. Policies

In relation to the specific case, MOOC for caregivers, it is relevant to treat as well the Danish as the Indonesian educational context.

Geographically as well as regarding number of inhabitants (5,6 mio.), Denmark is a relatively small country. The main language is Danish. The small size of the country gives some challenges in relation to establishing of online courses of a massive format.

The education system in Denmark is generally free of charge with no tuition fees in primary, secondary as well as in tertiary education. Continuing education for professionals is however only partly state-supported, and has tuition fees. Denmark has almost full internet coverage (generally broadband) among the population, and most educational institutions have implemented intranet or learning management systems as a supplement to their on-campus courses. A number of programmes and courses are delivered as blended learning, combining on-line and on-campus activity, but only a few are offered as purely

online courses. Until now only few Danish MOOCs have been developed, and even though many established educational institutions are aware of the development, only few have entered the field.

In the acronym MOOCs, the first letter “O” for “open” bears the double meaning of both having no tuitions fees, and being openly accessible for everyone interested, without having to pass an entrance exam. In Denmark, tuition fees are as mentioned generally not a problem, thus it is “open” as in accessible for everyone interested, which is the main potential of MOOCs in Denmark.

In contrast to Denmark being a small country, Indonesia is the third largest country in the world regarding the number of inhabitants (252 mio.). The education system builds on public as well as private institutions. The official language is Indonesian, but a number of programmes are also offered in English.

The development of the MOOC for Indonesian caregivers is in its planning phase and during 2015, FairstartGlobal is developing the design as well as the collaboration with the relevant stakeholders in Indonesia. Regarding involved governmental, and public/private organizations, FairstartGlobal is planning to cooperate with local NGO’s and has an ambition to cooperate with the Indonesian government. FairstartGlobal is also looking for financial aid in Denmark and are currently in negotiations with “SOS Bornebyerne” as well as Danish Rotary clubs.

Further knowledge of the Indonesian educational context will be developed during the process of developing the MOOC.

4. Practices - the case: A MOOC for caregivers

4.1. Short term and long term goals and objectives

In many countries, NGO’s, dedicated local professionals and leaders work hard to help children placed outside home, and their caregivers. Often, there can be a lack of government support for education and monitoring of children at risk, and no formal qualification systems. Most of FairstartGlobal’s users go from one aid project to another, or work without payment to improve care, without career opportunities. This is why the MOOC for caregivers is created: to offer a formal, research-based training in the development of local care systems.

The most important task for FairstartGlobal is to support the construction of local professional care competences in cooperation with the participants, major NGO’s and local governments.

FairstartGlobal’s long term goal is to spread research-based training programs and create global standards in professional care education. FairstartGlobal work to improve the lives of children without parents worldwide by educating their caregivers in quality care.

FairstartGlobal's short term goal with the MOOC is to educate caregivers and other care professionals to be program instructors that will play an important role in their local community and country. The program instructors will be able to train groups of caregivers for children without parents anywhere in the world - in orphanages, in residential care, and in foster care systems. They will learn how to use free online training programs that FairstartGlobal have created in sixteen languages. And they will be members of an international network of professional instructors who give each other peer feedback and support. They will learn how to motivate and train groups of caregivers, how to improve caregiverchild relations, and help caregivers organize daily care, based on child development knowledge from international research. As instructors, they will become skilled agents of social change and development for underprivileged children.

4.2. Current status of the MOOC

The MOOC is designed in Denmark for an educational programme in another country. Therefore issues of pedagogy needs consideration regarding planning the content, structure and design model. There are also technical challenges that need consideration as not all of the future participants are familiar using an online course platform.

The MOOC is created starting with defining learning goals and then defining types of assessment and learning activities. After these elements are defined the inspiration from the European Qualifications Framework and thereby divided into specifications of the targeted knowledge, skills and competencies of the learners.

4.3. Participants

The target participants (learners) of the MOOC are caregivers in Indonesia that have two - or more - of the listed work experiences and skills (in addition to the mandatory prerequisites):

- Have regular internet access, from home or workplace (mandatory).
- Speak and write a local language, and speak and read basic English (mandatory).
- Have access to an orphanage, residential care, foster care, or other units hosting children without parental care. Such as schools, fugitive camps, street child projects, etc. (mandatory).
- Have experience in monitoring child care systems. Such as: social worker, psychologist, teacher, leader of social care units, being an employee in NGO projects.
- Have experience with group training - such as lecturing for adults,

cooperating with caregiver systems.

- Have a local professional network in their community, where they can have access to training groups of caregivers during the education curriculum (being certified requires that they have trained a group of caregivers and their daily leader, using at least the first five sessions in the education program).
- Good at engaging people - good humoured, socially active, and enthusiastic.
- Have access to a group of caregivers they can train.

The main content provider of the certified instructor course is FairstartGlobal, especially its CEO Niels Peter Rygaard, clinical child psychologist, development and research leader, in collaboration with an internationally based network of researchers and professionals.

4.4. Pedagogical strategies

The MOOC is developed with inspiration from the xMOOC as well as the cMOOC traditions. The xMOOC-inspiration can be seen in the use of instruction, teaching based on a curriculum, and that the course structures the participants' paths. The cMOOC-inspiration can be seen in the involvement of participants in interaction, practice orientation, and structured reflection through peer assessment activities, through which the participants construct their knowledge and adapts the presented theories to their own praxis.

Gilly Salmon's E-tivities will be used as a design for creating social interaction, discussions between the participants and other learning activities (Salmon 2002). Furthermore Robert Gagné's Nine Steps of Instruction will be used as instructional design for the content (videos and text). There will also be designs for using different ICT tools such as animated and illustrated videos.

The overall pedagogical aim of the course is to be able to facilitate transformative learning processes among the participants (Mezirov), with a focus on supporting participants' critical reflection when meeting new things. This means that discussions and reflections must be followed by changes in participants' actions, and the MOOC will be designed to facilitate this.

4.5. Technological aspects of the MOOC System

The system for the MOOC is Open edX, which is an open source initiative – where developers around the globe can create and develop an online learning environment. The platform was founded in May 2012 by major institutions such as Harvard, Google and MIT. EdX (<http://www.edx.org>)

is a not-for-profit enterprise. The platform differs from former Learning Management Systems for MOOCs by having built-in elements for social interaction such as peer-to-peer assessment, discussion boards and wiki.

4.6. Quality assurance & assessment of learning

FairstartGlobal aims to assure the quality of the course by using principles of the European Qualifications Framework. Furthermore the theory taught in the MOOC is research-based.

The participants will be assessed by ongoing self-assessment as well as weekly peer-to-peer assessments. The purpose of the ongoing self-assessment is to motivate the participants and to provide them feedback on and recognition of their progress. The purpose of the peer-to-peer assessment is to foster critical reflection and thereby a deeper level of learning.

There will be a final assessment made in cooperation between the participant and the institution where he/she is associated. The final score will also include an evaluation made by the local institutions of the changes among the children on the institutions.

If a participant completes the certified instructor course they will receive a certificate made by FairstartGlobal using edX's certificate template. This certificate will prove they have completed an evidence- and researchbased instructor course, and that they have the knowledge, skills and competencies required to work as an instructor for caregivers working with children without parents.

5. Issues and future directions

The massive MOOC development globally highlights the search for developing ways of using digital technologies in education that do not just repeat old structures. The different MOOC approaches discussed accentuates how this search is continuously evolving, and the particular case context of the MOOC discussed in this article raises pedagogical as well as technical issues. As described above there is no universal paradigm for pedagogic models. The target group may have a learning culture that guide them in the direction of one learning approach while the goal, the content and pedagogies are based on designs that may take another direction. But not only cultures of learning may differ; also the cultures of learning design may differ, as is seen in the use of cMOOC- as well as xMOOC-elements and the goal of facilitating transformative learning among the participants. These approaches influence the choices that are made in the design of the educational setting.

These issues are not unique to MOOCs, but it is exposed when worldwide large scale models like MOOCs are chosen. Now when

MOOCs have been on the market for some time, research emerges on topics like the difference between student intake and certificated students, assessments of learning outcome, and teaching roles. The further work on developing and implementing the MOOC for caregivers will add details and knowledge to the questions raised.

The case exemplifies a use of MOOCs in relation to international collaboration between educational agents in different countries, and points possibly at ways of using MOOCs to support international collaboration.

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Massive Open Online Courses : a case study in Latvia

Rita Birzina

1. Introduction

Trends in online education stand to have profound impacts on employment, culture, communication and class around the world. The rapid global expansion in online education resources will make learning opportunities more abundant, cheaper and more accessible. Increased value placed on lifelong learning and the recognition of non-formal and informal learning will change the nature of recruitment, and equalise employment opportunities in a number of ways (Trend report, 2013). Nowadays, the topic of massive open online courses (MOOCs) is widely discussed innovation in higher education offered the world. The promise of MOOCs is that they will provide free to access, cutting edge courses that could drive down the cost of university-level education and potentially disrupt the existing models of higher education (Yuan & Powell, 2013).

This article presents the theoretical aspect of the development of MOOCs and its' practical use in Latvia (a case of University of Latvia (UL) Open Minded MOOCs) in context of the opportunities and challenges that this could lead to Latvian universities.

2. Backgrounds

Theoretical framework is related to the concept of MOOCs, the pedagogical conceptions of learning, and the impact on use of MOOCs in education.

2.1. The concept of MOOCs

The concept of the MOOCs as „big” OERs, which are usually of high quality, contain explicit teaching aims, presented in a uniform style and form part of a time-limited (Open Education Handbook, 2014). The essence of MOOC, which acronym included - **Massive** capacity; **Open** to all: participants have diverse abilities and backgrounds, no fees are charged for participation; **Online**, at distance and **Courses**: a systematic sequence of learning activities (Kim, 2014). The main emphasis is focused on a number of different types of openness: open access (no entrance requirements); open as regards pace (no restricted period of time for the course); open as regards location (no obligation to be physically present somewhere); open as regards time (no fixed starting date, no cohorts); open as regards the programme (choice of a complete curriculum or individual courses); openly available (free of charge); open as regards alteration (freedom to reuse the material, to combine it with other materials, to edit it, and to distribute it further under certain conditions) (Schuwer et al, 2013). There are the different types of MOOCs. The main distinction is between xMOOC and cMOOC. xMOOC tend to transmit information to a wide audience, to use of short video lectures and to make assessment. cMOOC tend to emphasize learner interaction by use of Connectivist and Constructivist pedagogies, to place the accent on forming learning communities and to use peer assessment (Open Education Handbook, 2014; Kim, 2014).

2.2. The pedagogical conceptions of learning

The pedagogical conceptions of learning, including the change of paradigms in learning: from lecturers centred to student centred the development of new forms of learning, leading students to integrate more elements from non-formal and in-formal lifelong learning in formal study process. The shift towards student-centred learning can be regarded as the single most important step towards transforming European universities into socially-engaged universities or universities that provide a diverse educational offer in order to become “lifelong learning universities” (Smidt and Sursock, 2011). The learning process is closely linked to the development of learning of learners. Historically from postulate of Andragogy: self-directed learning, which is characterized by such features as Self-concept; Experience; Readiness to learn; Orientation to learning; and Motivation to learn (Knowles 1984:12) to new approach of Heutagogy: self-determined learning, in which knowing how to learn will be a fundamental skill given the pace of innovation and the changing structure of communities and workplaces (Hase and Kenyon, 2000). It is important to understand how learners are motivated to learn, what and

how barriers to learning are formed. As noted Jr. Roger Chao (2009) the different categories of barriers towards participation to learning can be seen affecting a person in their different life stages/needs and in different dimensions of learning. Learners have their own personal biography, view of the world, what is needed to survive and succeed in their personal endeavours and they even have their own personal view of success. Internal and external influences on the adult learner both in their past and present experiences form these views. These views in turn form the learners' motivation and barriers to learning. Most importantly the emotion and environment dimension seems to be mostly affected by the different barriers and as such it needs a high degree of attention.

2.3. The influence of use of MOOCs

The influence of use of MOOCs: its benefits and problems in different levels affected:

- Macro-level the governmental political decisions
- Meso-level institutional or structural factors
- Micro-level dispositional or attitudinal factors and situational or life factors from view of learners and lecturers, and academic factors (Cross, 1981; Fagan, 1991; Mackerracher et al, 2006; Hippel and Tippelt, 2010).

2.4. Practical use of MOOCs in Latvia

Empirical studies according to the concept of MOOCs, the pedagogical conceptions of learning, and the impact on use of MOOCs in education were carried out:

- Latvian policy documents' content analysis. The main policy documents such as Basic Guidelines for Development of Education 2014 – 2020, Sustainable Development Strategy of Latvia until 2030, The National Development Plan 2014 – 2020, and Information Society Development Guidelines 2014-2020 were analysed.
- Views of Latvian universities lecturers on Open Educational resources using the structured e-interview (Nasongkhla et al, 2014) of 16 universities lecturers of universities of Latvia carried out of the collaborative research in the framework of Network No. 1 was studied.
- Social network users' opinions analysis - online ethnographic research with use of Social Network blogs - was used.
- The case of UL Open Minded MOOCs - as an education initiative providing for personal development and exciting learning process - was described.

The some basic issues and concepts of learning are related to culture influencing learning processes. As Knud Illeris (2009) notes “the most fundamental condition of human learning is that all learning includes two essentially different types of process: an external interaction process between the learner and his or her social, cultural and material environment, and an internal psychological process of elaboration and acquisition in which new impulses are connected with the results of prior learning. The criteria of the interaction process are of a social and societal character that is they are determined by time and place. The individual interacts with an environment that includes other people, a specific culture, technology and so on, which are characterised by their time and society. In the modern globalised world, this is all mixed up in a giant and rapidly changing hotchpotch that offers unlimited, and to a great extent also unstructured, possibilities for learning.”

In context of those MOOCs as learning opportunity in the governmental policy related to education and information and communication technologies, attitudes of people (views of lecturers of the Latvian universities, social network bloggers according to the criteria of governmental, institutional and personal factors), as well a case of UL Open Minded MOOCs) will be analysed.

3. Policies

During the first half of 2015 Latvia took place **The Latvian Presidency of the Council of the European Union**. Involvement, growth and sustainability were three main principles in the programme of the Latvian presidency of the Council of the EU. As concerns to information technologies the main working directions of the Presidency were as follows: strengthening the information society and the use of its offered opportunities for future development of the EU (The Presidency of the Council of the EU)

Information Society policy aim is to build a knowledge-based economy and to improve the quality of life, where everyone has the ability to use an information and communication technologies (ICT) and to use opportunities of the content to achieve this aim. The main planning documents are

- Basic Guidelines for Development of Education 2014 – 2020
- Sustainable Development Strategy of Latvia until 2030
- The National Development Plan 2014 – 2020
- Information Society Development Guidelines 2014-2020

3.1. Basic Guidelines for Development of Education 2014 – 2020

Guidelines are developed in accordance with Article 14, Paragraph 18 of

the Education Law, which provides that "The Cabinet shall determine a uniform national policy and strategy in education and submit to the Saeima for approval education development guidelines for the next seven years."

Basic Guidelines is a medium-term policy planning document that defines the development of education policy principles, objectives and lines of action for the next seven years. Considering that the processes of education directly affect every population in all age groups, the guidelines cover all forms of education and degrees

The aim of guidelines is to provide qualitative and inclusive education for personal development, human well-being and sustainable national development. The three sub-objectives are determined

1. Educational environment: to raise educational quality through the improvement of content and the development of appropriate infrastructure;
2. The individual's skills: to promote development of individual-based professional and social skills for life and for the competitiveness of the work environment;
3. Efficient management: to improve the efficiency of resource management, the development of educational institutional excellence.

Concerning to use of digital technologies there are mentioned such terms as "*digital training tools and resources - electronic edition*", "*digital teaching aids*", "*digital learning content*" as a supportive environment for education. In order to widening participation in adult education it is noted as a tool: "*distance education*" and "*massive open online courses*" (there is no explanation of the meaning of that term). For an individual's personal development identified as in need to acquire "*ICT skills*".

Educational environment Action 1.1.	Development of digital teaching aids and innovative digital learning content in all subjects of primary and secondary education.. (p 45)
The individual's skills Action 1.2. Improvement of teachers and academic staff motivation and professional capacity	2. Support for vocational education teachers .. to increase the overall skill (including entrepreneurial and ICT skills) and professional competence improvement 4. Support providing E-twinning projects in order to promote mutual international cooperation of teachers, to improve teachers' .. ICT skills and develop ICT as part of everyday life in the classroom (p 47)
Action 2. Widening of Education opportunities for adults	7. Common European Framework appropriate support systems.. Latvian language as a foreign language to promote the establishment of foreign university students, entrepreneurs, interested parties (for universities distributed separately);

	distance education system/maintenance (p 55)
Inter-institutional cooperation model	In the context of demographic challenge the higher education institutions should become more open for adult audiences (including distance education and the availability of massive open online courses) (p 127)

3.2. Sustainable Development Strategy of Latvia until 2030

The sustainable development strategy of Latvia is the main national longterm development planning document approved by the Saeima of the Republic of Latvia. As the main objective of education is identify: to create one of the best educational systems in the EU and to become one of the leaders as regards the availability and use of adult education.

The role of ICT in chapter **Change of paradigm in education** is mentioned in terms of „*interactive and qualitative study content in virtual environment*”, „*face to face learning*”, „*distance learning*”, „*digitalisation*”, and „*free available*”.

E-school and Use of Information Technologies (146) Information technologies have become the everyday occurrence and the object of interest of pupils, so they should also be skilfully used in the study process. By integrating distance learning elements in the study process, using the decentralisation advantages offered by technologies, it is possible to not only ensure the acquisition of interesting, interactive and qualitative study content in virtual environment , but also to find new possibilities for diversification and new forms of organisation of the study process, for example, where part of classes is taught by teachers face to face and part of the study material is acquired in virtual environment . It would help to attract the interest of young persons to the study material and would improve the general level of technological competence in Latvia because both pupils and teachers would acquire the skills. By participating in the development of different study projects, parents and grandparents of pupils could acquire the skills necessary for economic activity together with pupils.	Possible Solutions (162) Digitalisation of schools and libraries. In order to ensure access to a modern study process and information, digitalisation of all schools and libraries of Latvia should be implemented. The creation of digital content and possibilities of distance learning should be ensured within the scope of this process upon participation of both scientific and public libraries. (163) E-lessons . In addition to the usual study process educational institutions should create distance learning programmes , using e-technologies. Institutions of higher education may create programmes, which mainly take place in the e-environment . In schools teachers may use the e-environment as an addition to lessons at school. (164) Study e-books . Study books and materials should be freely available also in the e-environment .
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As concerns to chapter **Innovative and Eco-efficient Economy** than for Priority Long-term Action Directions as Practice of Open Innovations is noted *use of open-source programmes, easily accessible lecture materials,*

digital networks for the transfer of knowledge and digital platforms, and digital licensing of intellectual property.

- (183) Procurement of **open-source software**. The observation of the principles of open-source activities in most of the cases causes more extensive and rapid convergence of innovations. State and local government institutions may show an example and promote practice of open innovations, allocating part of the resources provided for the procurement of software for the procurement of open-source software and developing respective procurement programmes. **Open-source programmes** may be purchased for lower fees or free of charge, however, they require higher maintenance costs. Even if the total costs, using open-source software in state institutions, would not become lower, use thereof would have positive side effects – would create jobs in the local IT sector, develop programming skills of the labour force of Latvia and, thus, promote entrepreneurship. Procurement of open-source programmes would provide direct support to the sector of high technologies in Latvia.
- (184) **Open knowledge** and science. Knowledge becomes out-of-date very rapidly, so it is very important to improve the speed of distribution and availability thereof to enterprises and inhabitants. It requires new approaches in distribution of knowledge. In order to promote the spreading of knowledge, as well as to reduce obstacles for access thereof to state financed institutions of higher education and research institutes, **lecture materials** of state institutions of higher education and results of state financed scientific researches should be **easily accessible** to every inhabitant of Latvia via the Internet. Virtual business incubators and **digital networks for the transfer of knowledge and digital platforms**, which are easy to access for everyone and in which experts, teachers and scientists would share their knowledge, thus, facilitating access to knowledge and concurrently observing the interests of holders of intellectual property, should be developed.
- (185) **Digital licensing of intellectual property**. It would be a freely accessible digital platform, in which the intellectual property belonging to the state, institutions of higher education and research institutes would be compiled, as well as possibilities to buy their licences in digital environment would be ensured. Such platform would promote wider use of intellectual property, as well as would reduce licensing costs.

3.3. The National Development Plan 2014 – 2020 (NDP2020)

The National Development Plan 2014 – 2020 (NDP2020) is hierarchically the highest national-level medium-term planning document. NDP2020 is closely related to the Sustainable Development Strategy of Latvia until 2030 (Latvia2030) and the National Reform Programme for the Implementation of the EU2020 Strategy (NRP).

[2] The most important medium-term priorities, areas of action, objectives and the indicators of their implementation concerning to ICT is mentioned that *information technology are the pillars of the education system* and objective for reach it is development of such competencies as *command of information and communications technologies, communication and cooperation skills and e-skills used a digital learning environment and digital learning materials*.

<p>Competencies [31] Compulsory secondary education, both general and vocational, is instrumental to achieving an “economic breakthrough” and a high standard of overall well-being in 2020. The learning process and instruction of subjects at schools are provided at a high level and from the earliest school days onwards unleash abilities and skills and prepare the young generation to be competitive in the future labour market. Intensive acquisition of Latvian, foreign languages and information technology are the pillars of the education system.</p>	<p>Strategic Objective “Development of Competencies” [275] For a person to be able to obtain and maintain decent employment, to take care of him - or herself and his or her family and to contribute to the development of the country, various competencies – a set of knowledge, skills and attitudes are required, such as language skills, knowledge and command of information and communications technologies, communication and cooperation skills, entrepreneurial ability, civic consciousness, creativity, ability to think critically, to plan finances, to assess risks and identify solutions to such risks. These competencies need to be upgraded throughout one’s lifetime, because it is impossible to anticipate the future needs.</p>
<p>Goal 3 Develop adult education promoting an increase in labour productivity in accordance with the needs of the labour market</p>	<p>Strategic Objective “Availability of Services for Creating More Equal Work Opportunities and Living Conditions” [290] Introduction of innovative forms of curriculum content and activities in elementary and secondary education to promote creative and entrepreneurial ability: a digital learning environment, contemporary methods of foreign language acquisition, improvement of natural and social science curricula, strengthening of the career education system [297] Introduction of module-based education programmes (flexible, successive and structured subject blocks) in vocational education, development and approval of methodological teaching materials (including digital materials)</p>
<p>[406] Goal 3 Ensure convenient access to services in digital form</p>	<p>[415] Development of digital content and other products and e-services, thus expanding the accessibility and possibilities of use of such services in economic activity; improvement of the e-skills of the population</p>

3.4. Information Society Development Guidelines 2014-2020

Information Society Development Guidelines for 2014 -2020 (Guidelines) was elaborated to continue development of existing policies and to determine the priorities in the area of Information and Communication Technology (ICT) for the European Union Structural Funds Programming period for 2014 – 2020.

As the **goal of the Guidelines** were determined to provide the opportunity for anyone to use ICT, to create a knowledge-based economy and to improve the overall quality of life by contributing the national

competitiveness, increasing an economic growth and job creation.

Taking into account the analysis of the current situation in information society area as well as Information Society Development Guidelines 2006-2013 and the evaluation of the development plans' end impact built on basis of these guidelines, as well as the priorities in information society area proposed in the EU development planning documents, the working group has proposed **seven action directions** for policy planning period 2014-2020:

- ICT education and e-skills;
- widely available access to the internet;
- advanced and effective public administration;
- e-services and digital content for public;
- cross-border cooperation for Digital Single Market;
- ICT research and innovation;
- trust and security.

As concerns to ICT in education than terms “*e-skills*”, “*information literacy*” and “*digital learning resources and environment*” are mentioned

The main aspects of information literacy are

- usage skills – the ability to use print and electronic resources, including software;
- resource skills – the ability to understand the form, format, location and access methods of information resources;
- socio-structural skills – knowledge of how information is socially structured and designed (includes the understanding of the scientific publication process);
- research skills – the ability to understand and use appropriate information technology tools to conduct research;
- publication skills – the ability to create text or multimedia messages on the study results.

Action 1. ICT education and e-skills

Activities in the field of e-skills will focus on the areas that will facilitate small and medium sized enterprises as well as citizens' motivation for e-skills learning. Planned actions: public information, e-skills development of citizens' and entrepreneurs', increasing the ICT competences of public administration, ICT practitioners and professionals preparation for the requirements of the labor market as well as increasing share of algorithmic thinking and information literacy in education programs.

As Required Actions are noted “given the rapid development of **digital learning resources** in the field of education and **the need for more personalised learning process**, teachers' ICT skills are crucial for provision of high quality education process.”

It is necessary to continue modernise the curriculum and **digital information literacy** for the school students and teachers both to support lifelong education by strengthening the capacity of environmental cognition and personal self-realisation, and to strengthen employment and competitiveness.

To provide educational institutions with **encyclopaedic, digital cultural heritage and research result electronic resources** related to age groups and training directions.

It is necessary to integrate **information literacy learning** in general, vocational and higher education, through building appropriate learning materials and including in syllabus tasks for development of **information literacy skills**. It is important to increase the role of the school libraries – promote school libraries to become information literacy centres, including **the creation of digital resources'** reading rooms.

In order for information literacy acquisition to become a success, teachers' professional knowledge and skills in this area should be improved, and modern methodical aids have to be developed in collaboration with universities and industry professionals.

Responsible ministries together with the social partners, within the framework of educational strategic development within the period 2014 to 2020, shall take steps aimed at **improvement of teachers' foreign languages and ICT skills, usage of innovative technologies in the learning process** for teaching various subjects, including provision of training to teachers related to **creation of digital learning materials**.

It is necessary to expand usage of digital learning materials in the educational process, covering all subjects in primary and secondary education level. As a priority, activities that focus on the development of **interactive and original digital learning content** should be supported, creating them according to technical standards, which are supported by centralised learning materials and operations solutions developed in the education sector. Promote the usage of available materials and cognitive resources (Latvian language, Latvian history, etc.) in the development of interactive digital learning resources. While developing **digital learning materials**, the technical and legal availability should be provided also outside the school class. This includes both technical aspects (e.g., interactive whiteboards will not be available outside the class) and legal issues (learning resources developed with public funding should be freely available – for example, using a CC or OSI licences, in the meantime ensuring compensation to the owners for the usage of protected copyrights).

The terms “*Open Educational Resources*” and “*Massive Open Online Courses*” are not used in any of official government document. However, this terminology in different interpretations appears in the public space (newspapers, magazines, websites and social networks).

Open Educational Resources (OER) – *atvērtie izglītības resursi* (AIR)

Massive Open Online Courses (MOOCs) –

- *masveida atvērtie tiešsaistes kursi* (“mūki”) – (Diena)
- *brīvās pieejas masveida tiešsaistes kursi* (Dienas Bizness)
- *masveida atvērtie interneta kursi* (EK paziņojums Izglītības atvēršana. Brisele, 25.09.2013)
- *masīvi atvērtie tiešsaistes kursi* (Bakalaura darbu tematika, Alla Anohina-Naumeca, 2013)
- *brīvās pieejas masveida tālmācības kursi* (BPMTK) Daiga Kamerāde. Mācīšanās internetā par brīvu - kā tā ietekmēs augstskolas Latvijā? Providus, 25.02.2013)

Higher education also faces a digital challenge: with the number of EU students set to rise significantly in the next decade, universities need to adapt traditional teaching methods and offer a mix of face-to-face and online learning possibilities, such as MOOCs (Massive Open Online Courses), which allow individuals to access education anywhere, anytime and through any device. But many universities are not ready for this change (European Commission, 2013).

In case of the European Commission launch „*Opening up Education*” to boost innovation and digital skills in schools and universities, which will allow students, practitioners and educational institutions to share free-to-use open educational resources, Ministry of Education and Sciences (MOES) concerning to development of higher education in Latvia adopted

a decision:

To enable the education and training systems, particularly in higher education, full use of the potential of new technologies and to satisfy the increasing demand for high quality education ministers from 25 to 26 November 2013, the EU Education, Youth, Culture and Sport Council are invited to present the overall approach on OER and MOOCs in the national level.

In the near future the social partners do not see the opportunity to develop MOOCs widely, related to the limited state budget and EU investment in higher education.

E-learning environment is an integral part of the learning environment in the Latvian higher education institutions and is used for various purposes - for both administrative and the study process.

Currently, the most popular e-learning environment in Latvian higher education is *Moodle* platform, it is used for the majority of Latvian HEI since 2007 (Informatīvais ziņojums, 2013).

4. Social, educational, and technological readiness to MOOCs: views of the people towards OER, including of MOOCs

As noted M. Weller (2014:6) “MOOCs are just one aspect of how openness is influencing the teaching function of higher education, however. Before MOOCs there was (and still is) the successful Open Educational Resources (OER) movement.” In order to find out views of the people towards MOOCs will be analysed opinions of Latvian universities lecturers, and of learners of OER including MOOCs.

4.1. Views of educators

Data obtained from the studies of Latvian universities lecturers' views is related to their opinions in a broader aspect, since study was aimed to clarify the lecturers' views on OER, including MOOCs as one of the OER forms.

The structured e-interview in e-ASEM collaborative research (Nasongkhla et al, 2014) was developed in order to find out universities lecturers' viewpoint of the benefits and problems of OER in the study process

The data have been obtained by the online asynchronous snowballing e-interview of universities lecturers.

The qualitative content analysis was carried out, based on the common framework for coding, in relation to use of OER influencing factors: situational or life factors, institutional or structural factors, dispositional or attitudinal factors, and academic factors.

The research sample comprised 16 universities lecturers of universities of Latvia (the University of Latvia, Turība University and Latvian Academy of Sport Education. Lecturers represented age groups 25-36 (3), 41-50 (7), and 51-74 (6), gender – 7 females, and 9 – males, nationality – Latvians, education – master degree (1) and doctor degree (15), current

position – assistant of professor (2), docent (3), leading researcher (1), associated professor (4), professor (6).

Findings were structured in the levels of positive and negative influence of such factors as governmental, institutional and personal factors.

The most influencing Governmental factors are mentioned:

Issues	Respondents' answers
<ul style="list-style-type: none"> - Internationalization of education - Competition on an international level - Widening participation in higher education - Economic opportunity - Innovation - open online courses (MOOCs) - Improvement in the quality of local teaching materials 	<p><i>To promote the use of OER in Latvia in order to facilitate internationalization of the Latvian education</i></p> <p><i>There are a good opportunities, although national resources will compete with expertly designed qualitative international resources.</i></p> <p><i>By use open educational resources (teaching and learning materials) the public access to education are provided; it is efficient use of human resources. It might be a modern way of learning, but I think many of people do not use it.</i></p> <p><i>It could promote transfer efficiency of the knowledge and skills, creating innovative solutions to specific problems, promote the development of scientific potential.</i></p>

There are considerable barriers for use of OER and MOOCs, which requires government action

Issues	Respondents' answers
<ul style="list-style-type: none"> - Economically social conditions - Culture and traditions - National Education Policy - Lack of financial resources for the development OER - Lack of human capital - Course accreditation and recognition 	<p><i>Low funding in education sector, which will reduce in proportion of school to universities</i></p> <p><i>The main obstacles - behavioural culture and traditions. If a person wishes to acquire education, he/she would always find an opportunity to do so. If he/she does not want to learn, then he/she will not do.</i></p>

Conclusions. There are important advantages on OER and MOOCs development in Latvia. It will be support to internationalization of education and competition on an international level and to give possibility of improvement in the quality of local teaching materials. These will be also economic opportunity by innovation - open online courses (MOOCs) for widening participation in higher education and lifelong learning.

The biggest barriers are factors not directly related to OER and MOOCs, such as the increasingly commercial nature of education, economically social conditions, National Education Policy, Lack of financial resources for the development OER and MOOCs, lack of human capital and personal properties rooted in culture and traditions. The unresolved issues in course accreditation and recognition affected the

development.

The Institutional factors are stressed:

Issues	Respondents' answers
<ul style="list-style-type: none"> - Implementation in future - Support of new knowledge in society and improve the educators' reputation and university recognition - Enlargement of educational opportunities for students - Possibility to share with other educators, and elaborate collaborative courses and educational programs - Exchange of their ideas with other educators and researchers - Business project/model 	<p><i>It would be a big plus in the University development provided by only one condition that about studying fee is paid by the student himself.</i></p> <p><i>Implementation of OER in my university can be offered to a wider range of residents of Latvia, especially in adult education. There could be opportunity to offer new programs (particularly the Masters level) - in collaboration with other universities abroad. For the success of mentioned practice would require funding and time for the training of teachers and preparation of courses/program.</i></p> <p><i>It could promote transfer efficiency of the knowledge and skills, creating innovative solutions to specific problems, promote the development of scientific potential.</i></p> <p><i>Public access to high-quality courses can bring universities, faculties, departments and the teacher's own prestige.</i></p> <p><i>Students will be able to choose for themselves interesting courses which are not taught at his university and, without going abroad, to learn in the remote location. However, it should be noted that in the exact studies have not heard about such a possibility. Such studies are expensive.</i></p> <p><i>If it is necessary use OER, why not. Only we should understand which resources belong to the OER, which are not. Sometimes the offer is a business project of an organization. In this way, services are offered by a number of organizations (such as Open Access, there is still some open universities, etc., all sorts of academies, etc.). Some companies offer the topics relevant to them, such as SEO, for process modeling BIZAGi. However, the hope that someone in vain gold will be shared, it would be naive. Realistically, you can use some of the fragments. And it needs to assess whether it is worth to spend time both for searching and getting to students to learn.</i></p>

There are very important problems for use of OER and MOOCs in higher education

Issues	Respondents' answers
<ul style="list-style-type: none"> - Financial insufficiency - The lack of professionals - Significant contribution to the creation of courses - Lecturers' workloads increase - The quality of teaching materials - Technological problems 	<p><i>OER creation is a laborious process; the authors need to know not only the content of the subject, but also modern teaching didactics. It requires additional sources of funding for such resources. There should be resources, which concern not only to the content, but also support the learning process and monitor acquisition of content.</i></p> <p><i>Lack of knowledge. Those who use and create OER could share their experiences.</i></p> <p>In fact, really I do not see any obstacles, if only the operating speed of computer and the software is not adequate.</p>

Conclusions. Implementation of OER and MOOCs in studies could be a challenge for an educational institution to change deliver education of higher quality and efficacy, and gain competitiveness and growth. As the most important issue is mentioned possibility to share with other educators, and elaborate collaborative courses and educational programs; exchange of their ideas with other educators and researchers, support of new knowledge in society and improve the educators' reputation and university recognition, and enlargement of educational opportunities for students. Sometimes OER or MOOCs could be the business project of some institutions and not always the quality of educational resources is good; it requires serious evaluation of them.

The main problems are financial insufficiency, the lack of professionals, aging of professors, the workload pressures on teaching staff for significant contribution to the creation of courses. An important aspect is also the quality of teaching materials and some technological problems.

As Dispositional or personal factors are mentioned

Issues	Respondents' answers
<ul style="list-style-type: none"> - Challenge - Self improvement - New experiences and innovative knowledge acquisition - Professional recognition / reputation of acquisition - Improving the quality of teaching materials - Expansion of opportunities for cooperation 	<p><i>I do not see any obstacles. Many educational institutions have long been used distance learning as one of the OER forms.</i></p> <p><i>My attitude is largely positive, if it is viewed as a very wide range of learning opportunities. There are people who education can only get in the way</i></p> <p>I think OER is a great opportunity with huge potential for future development.</p> <p>By use open educational resources (teaching and learning materials) the public access to education are provided; it is efficient use of human resources. It might be a modern way of learning, but I think many of people do not use it.</p>

The main problems for use of OER and MOOCs are mentioned

Issues	Respondents' answers
<ul style="list-style-type: none"> - Motivation and change of attitude - Lecturer's workloads - Knowledge and ICT skills shortage - Copyright - Communication and interaction - Provision of a feedback 	<p><i>I am inclined at supporting traditional values, although I do not reject technologies. It is bad if they are prevalent in internal communication process of the society. I recognize the use of technologies not 'apriori' but when it helps performing mechanical work. I am worried about the youth that knows how to use a keyboard but cannot differentiate between a cow and a sheep.</i></p> <p><i>Acquisition of education without a direct, live connection with lecturers is formal, one-sided and worthless. Today, for every person interested in the issue can get a wealth of information on the Internet. Do not necessarily associate it with e-learning. The latter can be as complementary to "live" training.</i></p> <p><i>Introducing of such a form may gradually result in absolute clash of communication between a professor and a student. Education will turn into automated questioning and test performing if there was no face-to- face communication which means not only passing the knowledge but also the influence of professor's personality upon the student.</i></p> <p><i>One is the issue of copyright, authors' own reluctance to disclose their courses, the limits of the employer and the publishing houses, etc. It will be important to arrange the legislation that facilitates a variety of free resources for use in learning purposes (here I do not think about commercial use).</i></p>
Academic factors	<p><i>Lack of knowledge. Those who use and create OER could share their experiences. People. At a certain age it is hard to start and learn something new. Unfortunately thoughtless use of technology can be brought into the swamp.</i></p>

Conclusions. The most part of universities lecturers have positive attitudes towards OER and MOOCs as challenge of study process, especially, related to lecturers' self improvement, giving professional recognition / reputation of acquisition and gaining new experiences and innovative knowledge in expansion of opportunities for cooperation.

The main obstacles affected the development of OER and MOOCs are personal factors such motivation and change of attitude of professors, and lecturer's workloads. The ICT skills shortage as academic factor and unsolved issue as copyright also were mentioned. As the most fundamental

problem is mentioned provision of communication and interaction and feedback in study process.

4.2. Opinion of learners

Archival data (Hooley et al, 2012) was obtained from bloggers (Daiga Kamerāte and Iveta Kažoka), which are clearly and actively engaging with the public sphere (Providus.lv). The ethnography research appropriated to following criteria: relevant, active, interactive, substantial, heterogeneous, data-rich (Kozinets 2009:89) was carried out.

The research sample comprised 13 users. Views of respondents as MOOCs listeners according to the criteria of governmental, institutional and personal factors were analysed.

As benefits of use of MOOCs were showed:

Issues	Respondents' answers
Governmental level - Creation of New Courses with Content of national identity	<i>There should be courses with content on Latvian identity, so that they can offer the Latvians around the world: both Latvian exiles¹ in the second and in the third generation, as well as in recent years' emigrants to maintain links with the Latvia.</i> <i>MOOC train ride and accelerates. There are opportunities for the coupling of their wagons. There is an opportunity to continue as in the past, and not to change anything and continue to complain that young people come to study outside Latvian.</i>
Institutional level - Provide an opportunity for access to courses of the best universities in the world	<i>What is the most important thing - many of these courses Latvian universities did not offer and will never offer. Here also a great opportunity of Latvian universities: to give access to world-class content, while saving time of lecturers for acquisition of theory. That time it will be better to use for working with students on real research and training projects. It means that lecturer at the same time strengthening their own role - real projects virtually can not be done, and a good mentor support is invaluable.</i>
Personal level - An opportunity for access to courses of the best universities in the world	<i>I am delighted by what opportunities are given!</i>
- The Future for lifelong learning	<i>I am almost convinced that this coursera.org symptom to look like the future of lifelong learning. 21st century each from time to time due both to update their knowledge already acquired (formally attested diplomas) and look for new sectors.</i>
- Free Self Improvement - own choice	<i>I do it for himself and not because someone it requires.</i>

Issues	Respondents' answers
	<p><i>Such introductory courses provide great opportunities for people to learn something for their own fun by completely free with no obligation.</i></p> <p><i>I think that any knowledge obtained in that way, is a valuable resource and the instrument to be used.</i></p> <p><i>Acquired knowledge in MOOC I use for working in my professional field.</i></p>
<p>- Free and available with flexible learning</p>	<p><i>The advantage of such courses and the essence of creation is mainly of their low price and availability.</i></p> <p><i>Free of charge (although I do not know how long it will last - it is possible that one day will have to pay for those who want to get some specialized information, certificates, etc.)</i></p> <p><i>Opportunity, without any consequences to withdraw from a course, to discontinue, resume again next time</i></p> <p><i>Flexible learning process (eg, exams, tests organized multi-day) online environment while learning course is monitored. Almost every course is self-control issues, specific deadlines for the submission of essays to write exams.</i></p>
<p>- Interesting and simply taught</p>	<p><i>Most of the course topics are demonstrated with a sufficiently simple, practical and interesting examples</i></p>
<p>- To meet "great" professors</p>	<p><i>Greater opportunity to meet "great" professors, who are both knowledgeable and endowed with a pedagogical talent - who are enthusiasts of their work and will always try to integrate the very latest training awareness literature. Such teachers can generate enthusiasm and a very complex area</i></p>
<p>- The suitability for different ages and levels</p>	<p><i>Of course, the fact that such a thing is available, it is a good thing. If it is not fit to me, it very good fit for others. My 7-year-old son with interest acquired one course.</i></p> <p><i>The opportunity to test their abilities in different sectors, for which there is little interest in anything. After all - as a person of any age (schools, universities, pre retirement, pension) may know who he meets / does not work, it will be tested?</i></p>
<p>- Personal privacy</p>	<p><i>No one knows what courses you choose and what your success - learning process can also be completely anonymous</i></p>

Conclusions. Learners' perspective in personal level - as an independent learner who has access to materials of the best universities in the world and it will be the future of lifelong learning. Significant is the fact that most of MOOCs are free for use, available with flexible learning process, the lectures are interesting and educators taught simply, and is given possibility to meet "great" professors, and to choose courses suitable for different ages and needs preserving personal privacy.

The problems described by MOOCs learners mentioned

Issues	Respondents' answers
Governmental level - Costs for course creators	<i>This online course model is viable only if there are enough learners and someone is willing to pay for it (get a certificate, the employer pays for the employee training).</i>
Institutional level - Contents	<i>Coursera type courses in Latvia and in Latvian language seems to me unrealistic for the time being.</i> <i>Let's be realistic, MOOC courses and can only be two types:</i> - the lowest level, all kinds of introductory courses in various fields, because the students can not require fundamental prerequisites. - integrated into a variety of courses, such C courses, which gives additional insight into some field. In general, it is suitable for those who want to "get a picture", but it can also do so by reading a book, watching a video, etc. To study an area deeply and thoroughly, MOOC, at least in the current performance is not adequate.
- Levels of Course test	<i>Video, exercise test is suitable for beginning level (bachelors), but not suitable for advanced users. If a course does not have any testing (similar to language training) in order to determine the level of each of the learners with the tasks for which it is to be able to cope, then you can not select corresponding course</i>
- Interactivity	<i>If there is a desire for greater interactivity and intimacy with the teacher (skype, video, consultations), it is impossible to achieve.</i> <i>Educator can be experienced and award-winning, but "interactivity", opportunities to</i>

¹ Latvians have always been proud of their homeland. However, the calamity of WW2 and second Soviet occupation forced many to seek refuge in the Western world. It was a political exile. For nearly 50 years they actively waited for Latvia to be free again. But, the western exiles were the ones who deserve

Issues	Respondents' answers
	<i>respond to specific questions is "0".</i>
- Objectivity of evaluation	<i>The test results a little unreliable. I certify that I do not use unauthorized techniques, but it certainly does not work for everyone. Examination (sit-in) and individual tasks as the method is not feasible. If I were an employer, then treated with caution against such test results and certificates</i>
- Dropout	<i>What has always been the biggest problem of distance learning? Number of dropouts. Experience and studies show that most students study online without direct contact with teachers and fellow students are not appropriate - a large number of studies also fail to complete it. Most people need for frames; just need a face to face social environment in which the learning process motivates supports and provides feedback. In order to successfully use MOOCs need to study a group of mentors and trainers face to face support</i>
Personal level - Individual Approach	<i>Lack of individual approaches. It will be difficult to find funds and professors who are sufficiently knowledgeable and modern with the ability to simply explain the complex and interesting things.</i>
- Feedback	<i>For successful functioning of MOOCs, it need to have face-face support.</i>
Academic level	<i>Lack of perfect knowledge of foreign language</i>

Conclusions. The main problem for MOOCs user is a lack of individual approach and receiving of feedback. That could be the main factors that determine the number of large dropout. As problem of academic level is mentioned lack of perfect knowledge of foreign language.

5. Practices

5.1. University of Latvia (UL) Open Minded courses

The mission of UL Open Minded is to make BA-level academic knowledge – traditionally provided at universities – available also electronically, free of charge. It is especially relevant in the context of the cutting-edge global trends in education, when top-notch universities increasingly post their study materials online, thus fundamentally changing the principles of knowledge transfer and the studying process itself. In the

Latvian educational system, UL Open Minded marks an unprecedented turning point, as free BA-level education in the Latvian language online is available for the first time.

There are two ways one can take advantage of the studying possibilities offered by UL Open Minded – firstly, by attending the lectures and discussions at Birojnica² and University of Latvia, and, secondly, by following the lecture courses online. In total, each course consists of up to 12 lectures, regular reading assignments, an examination test at the end of the course, and a course completion certificate (cited from <http://www.openminded.lv/par-projektu/>).

All offered courses belong to xMOOCs type and are related to a specific topic. There is the list of courses

No.	Course	Structure	Comments
1	Edgars Lapiņš, Mārtiņš Vaivars. Argumentācija un kritiskā domāšana (<i>Argumentation and critical thinking</i>)	6 lectures	Provides Nordea Bank For participation course are not necessary prerequisites, but be ready to get acquainted with the materials and carry out homework. Part of the proposed additional materials is in English.
2	Gundars Bērziņš. Ievads organizāciju stratēģijā (<i>Introduction to organization strategy</i>)	7 lectures	Provides Nordea Bank During the lecture learners independently carry out Strategic Plan of freely chosen organization.
3	Cilvēka veselība, vide, veselīgs dzīvesveids (<i>Human health, the environment, healthy lifestyle</i>)	12 lectures	Provides Practical Lecturers by leading medical specialists of Latvia.
4	Jauno pasniedzēju popularzinātniskas videolekcijas (<i>Popularscientific video mini-lectures of young lecturers</i>)	4 lectures	Provides UL 15 - 30 minutes long popular science lectures telling about interesting psychology, anthropology, cognitive science, and physics topics. These short lectures show how exciting and interesting science can be, as long as it tells the story of the people for whom it is a hobby and for which it is important that the listener really understand. The aim of mini-story is to encourage the pupils to understand and choose what they want to do in the future and what opportunities can offer a wide range of sciences.

² Birojnica is a meeting and co-working space with free internet access, LETA and LURSOFT databases, books and magazines. Birojnica constantly hosts speakers from private businesses, governmental and non-profit institutions, HEIs. Projects like "LU Open Minded" and "Open Minded Practical" have taken place in Birojnica.

No.	Course	Structure	Comments
5	Vjačeslavs Kaščejevs. Fizikas paradigmu spēks un bezspēcība (<i>Physics paradigms' power and powerlessness</i>)	6 lectures	Provides UL For any listener
6	Pārvērtējot vadonismu Latvijā: Kārlis Ulmanis vēsturē, kultūrā un atmiņā (<i>Revaluing political leadership in Latvia: Karlis Ulmanis in history, culture and memory</i>)	7 lectures	Provides UL This course is devoted to a popular, and also controversial President Kārlis Augusts Vilhelms Ulmanis, which was a prominent Latvian politician in pre-World War II Latvia during the Latvian period of independence from 1918 to 1940. Course materials – only in Latvian.
7	Video stāsti: biznesa uzsākšanas iedvesmai un uzņēmējdarbības procesa izzināšana (<i>Video stories: inspiration of business start-up and finding out of business process</i>)	10 lekcijas	Provides Practical Stories of Latvian Entrepreneurs were developed in the framework of the project “Central Balticum Entrepreneurship Interaction” (CB ENTREINT). Project website: www.cb-entreint.eu .
8	Ivars Ījabs. Nacionālisms (<i>The Nationalism</i>)	12 lectures	Provides UL United face to face and distance learning. This course is devoted to the development of nationalism in modern Europe and its links with other processes - the formation of industrial capitalism, political democratization, the spread of modern media.
9	Kaspars Eihmanis. Budisms Rietumu lielpilsētu iemītniekiem (<i>Buddhism for Western metropolitans/cities inhabitants</i>)	12 lectures	Provides UL United face to face and distance learning.
10	Ilgonis Vilks. Visuma noslēpumus šķetinot (<i>Unraveling the Mysteries of the Universe</i>)	12 lectures	Provides UL Video lectures intended to increase the pupils' interests of astronomy.

The detailed description by author of one of the courses is given.

5.2. Ilgonis Vilks. Unraveling the Mysteries of the Universe

- Overall direction

- Goals and objectives: Short term and long term. *Give an overview of development of astronomy science and to highlight problems not solved yet.*
- Brief roadmap & the current status of the MOOC of your country. *This course was part of a larger project “LU Open Minded” that is first largely publicised MOOC project in Latvia.*

- Participants
 - Target audience (learners). General audience interested in astronomy.
 - Content providers. *Content provided by author; based on previous experience of giving popular science lectures.*
 - Service providers and/or policy initiators: Governmental, and public/private organizations. *Course was initiated by private organiser Birojnica and supported by University of Latvia.*
- Pedagogical strategies
 - What is the instructional strategies that are (or will be) incorporated in your MOOCs in general? Basic instructional format of the MOOCs. *Twelve lectures, one hour each, are given to audience in presence and recorded. Texts and figures of presentation are added to video. Final product is made available to participants online (published on Youtube).*
- MOOC System (technological aspects)
- Quality assurance & assessment of learning
 - Strategies for quality assurance,
 - Assessment and recognition of learning. *After each lecture participants study additional sources mentioned in the presentation. At the end of course participants can perform a test. If they pass it successfully, they receive a certificate.*
 - Accreditation. *No accreditation is necessary or planned because this course is not a part of formal university level education.*
 - Funding strategy and business model. *Course is funded by University of Latvia. Audience in presence also pay small fee. Course is free of charge for online participants.*

5.3. The Summary of last period (year 2014)

Summarizing information on the courses, which took place in year 2014 University of Latvia's magazine "Alma Mater" (Winter 2014) in article "UL Open Minded – higher education online" stated that "UL Open Minded has plenty of listeners – a total of around 5000 people have registered for the lecture courses, and 350 full-time and online listeners have completed the course and received a certificate thereof."

The project manager Reinis Tukišs (2015) pointed out that one of the stages of the MOOCs education project University of Latvia Open Minded created by Nordea Bank support has finished. Three topical series of lectures - on economics, organization strategy and animal rights - have successfully completed more than 250 people who received certificates.

Rector Mārcis Auziņš emphasizes that with this project Latvia alongside to the world increasingly evaluate the Internet and digital technology's role in the process of acquiring knowledge, and he is pleased that the project enjoys significant people response - UL Open Minded published YouTube lectures viewed over 70 000 times, and the total UL Open Minded courses the number of graduates has already reached more than 600 (Tukišs, 2015).

6. Issues and Future Direction

In that part of report is described the issue raised from the initial experiences of studies on views of Latvian universities lecturers and bloggers MOOCs users and thought on the future direction of it.

6.1. Discussions on the issues and problems of Latvia's practice of MOOCs

The initial practice of MOOC in Latvia was described by analyses views:

- of Latvian universities lecturers related to their opinions in a broader aspect, including MOOCs as one of the OER forms, and
- of learners of MOOCs described their views using blogs. Nowadays bloggers are playing an increasingly important role in providing news and shaping public opinion about education. Blogs offer a considerable amount of constructive criticism that can be useful in provoking and fuelling the necessary discussions (Trend report open educational resources, 2013:75).

The conclusion gaining by find out views of the people towards MOOCs for social, educational, and technological readiness to MOOCs showed: the learners' views of benefits and problems are mainly related to attitudinal and academic factors, less to situational or life factors, but the educators' perceptions are mainly related to governmental and institutional factors.

The main findings are summarized in following levels:

Macro-level. The implementation of OER and MOOCs is a good opportunity and gives impact on learning media in Latvia on national and international level. The main aspects are showed: promoting of education internationalization; fostering quality of national educational materials in competition international resources; providing a variety of opportunities for use of the material; obtaining economic benefit, widening participation in education, and developing of innovation like MOOCs. From the learners' perspective as an innovative idea can also be suggestion of Creation of New Courses with Content of national identity.

Meso-level. The use of Open Educational Resources including MOOCs provides opportunities to expand educational boundaries and to promote life-long learning and personalised learning. The most part of universities lecturers have positive attitudes towards OER and MOOCs as future of learning, especially, in such aspects as education and learning broadening, development of public access, improve efficient use of human resource. The digital-supported learning gives better links between formal and informal learning. The implementation of OER and MOOCs will be as one of effective learning form, which provides students to access

additional learning resources, engages in independent learning and develops learning directed with personal interests. Definitely the implementation of OER in studies could be a challenge for an educational institution to change deliver education of higher quality and efficacy, and gain competitiveness and growth. As the most important issues are recognized possibility to share with other educators, and elaborate collaborative courses and educational programs; exchange of their ideas with other educators and researchers, support of new knowledge in society and improve the educators' reputation and university recognition, and enlargement of educational opportunities for students.

From the learners' point of view could be named the recommendation on integration of several offered courses of other universities in the own university study programmes, and thereby to allow students to mix the existing program with online courses.

Micro-level. Most of the professors are willing to accept the challenges offered by the implementation of OER and MOOCs such as lecturers' self improvement, giving professional recognition / reputation of acquisition and gaining new experiences and innovative knowledge in expansion of opportunities for cooperation. But they recognize the serious obstacles that could affect the study process and are related to the influence of professor's personality to student: it is very important, and is not supported in face-to-face communication creating an impersonal feeling. This aspect is crucial in acquiring study programs of natural sciences; there are situations in which is the need for practical works.

Learners' perspective in personal level - as an independent learner who has access to materials of the best universities in the world and it will be the future of lifelong learning. Significant is the fact that most of MOOCs are free for use, available with flexible learning process, the lectures are interesting and educators taught simply, and is given possibility to meet "great" professors, and to choose courses suitable for different ages and needs preserving personal privacy.

The main problem for MOOCs user is a lack of individual approach and receiving of feedback. That could be the main factors that determine the number of large dropout.

6.2. Suggestions on the future direction of the MOOCs of Latvia

Some see MOOCs as a 21st century revolution in education that will lead to the disappearance of traditional universities. Other sceptical waiting for the ending of uproar around its by believing or hoping that nothing will not change significantly (Kamerāde, 2013). There are important enablers and barriers on OER and MOOCs development in Latvia, and its need solutions on governmental, institutional and personal level, how they can be overcome.

The suggestions on future direction of the MOOCs of Latvia will be described based on factors of governmental, (macro-) institutional (meso-), and personal (micro-) level by integration essence of meaning: massive, open, online, and courses.

Governmental (macro-) level. Terminology and governmental actions: Latvia needs introduction of new terminology in Latvian language related to OER and MOOCs, and the implementation of new paradigm of learning in real life.

Massive capacity: Latvia will never be able to offer well-attended courses of the world. The development of MOOCs could take place in two directions: the creation of interuniversity courses for widening participation of listeners and national specific courses for certain target groups.

Research: it will be necessary to make a serious study of the feasibility of introducing of MOOCs in real educational environment, find out the advantages and disadvantages that they can provide the education system of Latvia. It would be important to identify the economic benefits of lifelong learning as well as the development of e-pedagogy based on a variety of learning theories. The challenge might be to use developed UL courses as a research matrix in order to identify new directions for pedagogical methodology in higher education.

Exchange of experience: Latvia should identify local and international experience on use of MOOCs. As one of the forms of exchange of experience may be state supported collaborative projects at local and international level.

Institutional (meso-) level. Open to all: it's already happening. Courses are offered as open to all, at different levels of listeners and different content offered. Currently, one can be observed offer to move towards only on xMOOCs. The most of courses are free of charge. Open access without entrance requirements, flexible pace with partly restricted period of time for the course giving possibility to option starting date, no obligation to be physically present in courses, and freedom to reuse the material, to combine it with other materials are provided.

Online, at distance: Courses are offered in both at distance, and face-to-face, using a blended learning approach. It is definitely the best way, because as a main use of MOOCs problems are listed dropouts, possibilities of receiving of feedback and of consulting face to face environment.

Courses: a systematic sequence of learning activities. All courses have systematic sequences of learning activities. The content is presented in a certain order, according to course requirements are elaborated and selected the course materials. Tests have been developed and tasks designed. It could possibly be a challenge to develop cMOOCs in Latvia.

Personal (micro-) level. The use of MOOCs is given advantage, particularly appreciated by our society today, it is free to select the time and place at which to get themselves important information. There is a challenge that a global project initiative, which allows obtaining a high level of knowledge in a convenient time and place, it is now also available in Latvia.

For learners: this is an opportunity of learners for development of independent and self-determined learning for lifelong learning. It will need to develop information and digital literacy, as well to improve foreign language skills. It could be linked with change of the learning paradigms in schools and universities. It is therefore important to conduct the further study identifying listeners' views of UL Open Minded courses.

For educators: improvement of professional qualifications by acquiring of new and innovative pedagogical methods for teaching, and exchanging of experiences. It would be significant to find out also the advantages and disadvantages gained by educators on implementation of UL Open Minded courses.

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Slovakian MOOC case study

Alena Ilavská-Pistovčáková

1. Introduction and background

The increasing interest of students in MOOCs and their positive feedback attracted the attention of academics, but also the mainstream press and social media, business sphere, and policy makers.

Since 2013 Slovakia (together with 10 other countries) has been involved in the first pan-European massive open online course initiative, and has signed up to OpenupEd platform representing the first MOOCs initiative across Europe, with the support of the European Commission. Until now approximately 40 courses in different languages have been provided, covering a wide variety of subjects. This platform was initiated by the European Association of Distance Teaching Universities and mostly involves open universities. Partners are nowadays based in France, Italy, Lithuania, the Nederland, Portugal, Slovakia, Spain, and the UK, and outside the EU in Russia, Turkey and Israel. The main aim of this platform is to open up education for students with an offer that reflects European values such as equity, quality and diversity. However the motivation lies not only in the concept of accessible open education provided free of charge, but takes into account a variety of needs and circumstances of lifelong learners and the demands of changing knowledge based society, where openness may serve in various ways.

The purpose of this paper is to provide a view of the MOOC state in the Slovak republic. The paper does not seek to inform on a technical level, it assumes knowledge of terminology definitions, theories, research

findings and case studies of MOOCs and offers a view of the driving forces for this kind of educational sources.

2. MOOCs in Educational System in Slovakia

The general aims of education system in Slovakia are strongly marked by the political changes which occurred in November 1989 and the subsequent transformation of the entire society and economy, determining a new orientation in the education system towards democracy and pluralism characterized by: freedom of selection of an educational career, pluralism in all forms of education, participation of citizens in educational management, democratic character of the educational organizations and development of lifelong learning education. (UNESCO, 2012).

According to Programme Declaration of the Government of November 2002 the transformation of traditional education into a modern education system, along with other constituents of the system of life-long education belongs to the main strategic long-term goals. The principle of lifelong learning is considered as an important area of increased quality of knowledge potential.

The development of education and training in the spirit of modern European and world trends and in relation to the widespread diffusion of information technology must be based on the support of knowledge-based economy, which creates the social environment, rules, models and nevertheless gives rise to new opportunities for learning. At the same time, they challenge established views and practices regarding how teaching and learning should be organized and carried out. (Ministry of Education, 2007; OECD 2007).

The new learning space is a multichannel learning environment which can allow learners to be involved into “complex adaptive system with self organizing”. Nowadays learning and education technology is developing with overwhelmingly what we guess for tomorrow. eLearning technology application changed its structure by combining via new discussion technologies, having active principle in distance learning, such as mLearning, tLearning and uLearning. Moreover, public funding in many countries, not excluding Slovakia is not as generous as it once was, and in many cases is becoming more demanding and competitive. These changes are particularly significant in Europe where universities have traditionally been more reliant on public funding. The current economic and financial crisis has exacerbated these problems even further, with growing stress upon the sustainability of existing public higher education funding regimes, and pressure mounting to explore new sources of income and new ways of educating.

Distance education or distance learning which has a tradition in Slovakia since 1994, is a mode of delivering education and instruction,

often on an individual basis, to students who are not physically present in a traditional setting such as a classroom. Distance learning provides "access to learning when the source of information and the learners are separated by time and distance, or both. "Agriculture distance education: A valid alternative for higher education?". Proceedings of the 20th Annual National Agricultural Education Research Meeting: 67–73.)

Jump up Massive open online courses (MOOCs), aimed at large-scale interactive participation and open access via the web or other network technologies, are a recent development in distance education.

At present in the Slovak Republic the main positive impact of MOOCs on the education system can be seen only in tertiary education, which is characterized by the highest level of e-learning projects already implemented. A gradual positive impact can be observed also in training at workplace by big companies and in the lifelong learning system provided by universities. MOOCs is not yet included in strategic Governmental documents as a significant and promising tool for the further development of education systems in the Slovak Republic for all target groups.

3. National Action Plan

Valuable movement which possibly can drive to establish exact strategy for MOOCs is the Open educational commitments and creation of National Action Plan, which includes the open education chapter for Open educational resources and Open Access to scientific and scholarly research publications, each with its own set of commitments could be accepted as a first and very significant step. It is necessary to identify digitally available educational resources that can be released openly, and evaluate existing repositories. Analyze the procurement process for educational resources in primary and secondary education and run a pilot program of a new proposed procurement process that would enable the release of such materials under an open license. Propose and implement awareness measures for open educational resources and also to join multilateral activities in Europe and beyond that support the creation, improvement, sharing and reuse of open educational resources.

The open education chapter in its introduction states says: „In education, research and development, a great amount of content is created: educational materials, studies, publications, etc. These are often published in such a manner that access to them is complicated even for experts within academia, not to mention the wider public. Proprietary licences, as well as technological issues related to publishing create barriers which need to be eliminated. In coordinated approach and removal of barriers at the top using legislation and technological coordination, powerful effects can be achieved.“ (Slovak Republic 2015, Suggestion of Action Plan.

Initiative for Open Government in Slovak Republic.)

4. Case Studies

Initiative we have to mentioned and could positively affected MOOCs movement in Slovakia is a Project HOME. Partners join the project:

- EADTU
- Universidade Aberta
- UNED – Universidad Nacional de Educación a Distancia
- Anadolu University
- DAOU – Danish Association of Open Universities
- Dublin City University
- Open Universiteit Nederland
- Univerza v Ljubljana
- The Open University
- Ministère de l'enseignement supérieur et de la recherche
- Fédération Interuniversitaire de l'Enseignement à Distance
- Finnish Online University of Applied Sciences
- Hellenic Open University
- Open University of Cyprus
- International Telematic University UNINETTUNO
- Maria Curie Skłodowska University
- Tallinn University
- Kaunas University of Technology
- Czech Association of Distance Teaching Universities
- Slovak University of Technology in Bratislava
- Danish Association of Open Universities
- The Open University of Israel
- Moscow State University of Economics, Statistics and Informatics

The project HOME, acronym for - Higher education Online: MOOCs the European way. HOME is partly funded by the European Commission's Lifelong Learning Programme. HOME started in January 2014 and is funded to June 2016. The aim of the project is to develop and strengthen an open network for European cooperation on open education, in general, and Massive Open Online Courses (MOOCs), in particular. The partners will build an open institutional network on MOOCs based on European values like openness, equity, quality and diversity.

Slovakia is involved in the first pan-European massive open online course initiative as we have already mentioned, and has signed up to OpenupEd (which is the first MOOCs initiative which goes Europe-wide, with the support of the European Commission. At the start around 40 courses, covering a wide variety of subjects, are available, in 12 different languages. OpenupEd has been initiated and is coordinated by the

European Association of Distance Teaching Universities and mostly involves open universities. The eleven partners are based in France, Italy, Lithuania, the Netherlands, Portugal, Slovakia, Spain, and the UK, and outside the EU in Russia, Turkey and Israel. (OpenupEd, 2011 cit.2013-09-25. Accessible on www.opeuped.eu)

OpenupEd has the aim to open up education for students with an offer that reflects European values such as equity, quality and diversity. In this culture they have a motive to stretch the concept of “open” beyond just being free of charge and open accessible. Indeed, in order to take account the variety of needs and circumstances of lifelong learners and the demands of changing knowledge based society, openness may serve in various ways. All courses may lead to recognition such as a completion certificate or creditcertificate may count towards a degree. In the latter case, students have to pay for the certificate, with the cost ranging from €25 to €400, depending on the hours of study involved and the institution. (Accessible on www.opeuped.eu)

The intention to create and implement some MOOCs in the Slovak Republic was an outcome of development of the ongoing communication between the Ministry of Education of the Slovak Republic and universities in Slovakia. University of Management in Bratislava/ University of Seattle – an educational institution was addressed to create and offer courses for the public.

The first MOOC in Slovak language in this initiative is the Pre University mathematics course (Pre university mathematics/Introduction to Engineering Mathematics. OpenupEd – online. Accessible on www.openuped.eu/courses/deatails/1/9) It is a high quality on-line educational material with learning objectives, study guidelines and advice, intermezzos, assignments, self tests, summaries and several options for optional tutor support, being systematically developed on Slovak University of Technology from 1995. (L.Marko and D.Sovisova: “Twelve Years of Pre Entry Courses from Mathematics”. Virtual University 2008.)

A very large number of open educational resource initiatives are currently underway in around the globe, however, literature and practices prove that education is one of the last societal sectors across Europe which has not yet embedded the potential of new technologies. In the past years the lack of systemic uptake of new technologies in education has been a concern for many European countries, not only Slovakia, but unfortunately only with scattered efforts. Despite the investments, a full uptake of new technologies and offering the MOOCs requires more than dispersed action. Learning and teaching can become more focused on the learner, supporting the individual learning pathways, enhancing collaboration online and blending formal and informal education. Personalisation, collaboration and links between formal and informal learning enhanced by technologies will be at the core of future learning and push educational

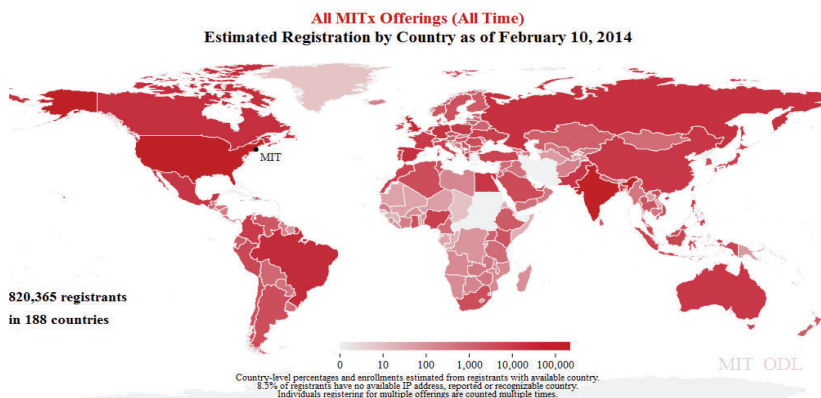
institutions towards opening education and institutional transformation. (European Commission, 2013).

The Office of the Plenipotentiary of the Government for the Development of the Civil Society, which is responsible for the nation's Open Government Partnership initiatives, is also participating in the international COMSODE project (Slovak Republic, 2014). COMSODE outputs include an open data publishing platform, as well as methodologies and documentation of best practices for publishing data. These methodologies and software are openly licensed and available to the organizations which are responsible for carrying out OGP commitments in Slovakia.

5. State of MOOC in Slovakia

Massive Open Online Courses (MOOCs) have continued to attract considerable amount of students even in Slovakia, in spite of fact that is a small country. Government and universities respond to the open and online education movement. Three years after the MOOCs began its rise, it is clear that the HE institutions in the EU are gaining speed in this movement.

Slovakia had 834 registered students in 2014 , 0,1%, in courses offered by foreign universities. (Source EdSurge).



The country with the highest certificate attainment worldwide is Greece with estimated 13.6% of initial registrants completing the course with a certificate. Students from European countries display high persistence with some of the highest certification rates worldwide. Five of the six countries with the highest certificate attainment rates in the world are European: Greece (13.6%), Spain (13.1%), Slovakia (13.0%), Germany (12.8%), and Czech Republic (10.1%). (Netrebko, S., O.: Geographical Data in MOOCs, 2015)

In Slovakia the educational institutions have been using the Internet and other digital technologies to develop and distribute education for several years. Yet, until recently, much of the learning materials were locked up behind passwords within proprietary systems, unreachable for outsiders. The MOOC movement aims to break down such barriers and encourages usage of freely sharing content, improves the efficiency and accessibility, not to mention brings more equity of education, training and learning.

We believe our school system is still a bit old-school and rigid and not very open minded to adopt MOOCs at big shot. Most of education is happening at the school premises itself and using their own textbooks and using less of other sources that there are. A way forward might be to rely more on off-the-premise theory education (including MOOC not exactly in the syllabus, but to recommend to students where and how to study) and use school time for more practical things such as discussions or experiments in practice. A good beginning is starting to use MOOCs courses (how we can now observe) is to educate teachers first and once their get personal experience of these tools they are more likely to incorporate them (which we can further encourage them to do). We can see this attitude between young teachers and researchers at the universities.

The education system in Slovakia within the last decades insufficiently responds to the needs of the labour market in the Slovak Republic, which mainly shows in the following:

- Absence of an open system of lifelong learning for the labour market,
- Insufficient ability of the formal system of education to flexibly respond to arised needs of new qualifications through creating and implementation of new learning and study programs,
- Mutual closeness between formal and non-formal system of education,
- Absence of recognition of learning outcomes of non-formal education for the purpose of obtaining of qualification,
- Insufficiently guaranteed high quality of non-formal education by the state,
- Absence of ongoing monitoring and survey of education needs on the national level,
- Absence of the system of lifelong guidance for all phases of education and active life of a man,
- Insufficiently transparent and effective way of investing in both formal and non-formal education and informal learning,
- Insufficient development of key competencies
- Lasting gender stereotypes.

For the future operation it is important to resolve financial sources and also ensure qualified authors, tutors and quality hardware support. Slovakia represents a very small market for development of MOOCs in the field of

engineering or any education in Slovak language.

The current mission for MOOC is to make the access towards education easier as well as to make access to the new qualification and employment easier during the entire active life of citizens. The most important reason of establishment of MOOCs courses at universities is the need to systematically roof the existing subsystems of education, in such a way that they would respond to the real needs of citizens, employers, public administration and involved educational institutions.

Components of the open system of education include:

- System of monitoring and survey of the education needs with the aim of elaboration of their prognoses and information system on lifelong learning;
- System of quality of lifelong learning with an emphasis on the quality on non-formal education and informal learning;
- System of recognition of learning outcomes of non-formal education and informal learning for obtaining qualification – permeability;
- Supporting tools of financing of creating new courses.

Slovakia does not yet have any own list of MOOCs and does not exist any strategy of MOOC. The legislation does not deal directly with this kind of education, but mentioned activities provide an unprecedented opportunity to establish MOOCs strategy through open education that increase the movement by raising visibility, providing key resources, and enacting supportive policies.

6. Conclusion

Video Lectures, Supplementary Materials, Surveys, Homework Assignments, Logistics, Discussion Forums, joining Meetups, Help Articles – standard parts of quality MOOCs are incredible support and motivation tools for study and we can say, a lot of such materials are already done due to implementation of distance and e-learning education. The MOOC is an evolving model, presenting an intriguing set of challenges and opportunities for both instructors and students.

Model of MOOC has perspective also in Slovakia (we suppose), because there are many enthusiastic authors of online education willing to create contributions, but only in the case of the resolved lack of financial support and the infrastructure question could evoke the possibility to use these courses as a support of the face to face study.

As the Economist magazine reported, "A revolution has begun thanks to three forces: rising costs, changing demand and disruptive technology. The result will be the reinvention of the university."

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MOOCs in Spain : preliminary lessons from UNED MOOCs experience

Inés Gil-Jaurena

Abstract

MOOCs, as a phenomenon, have irrupted into the education arena in recent years. The "free" component is attracting loads of learners from all over the world, who are sometimes approaching the online realm for the first time. The Spanish National Distance Education University (UNED) has implemented its own MOOCs, in three editions up to now (March 2013, November 2013 and March 2015).

This paper presents a description of what has been done. First, the experience is contextualized within the European, Spanish and UNED institutional contexts.

A second section describes the case of UNED MOOCs, including different aspects: participants, pedagogical aspects, assessment, recognition and technology. The last section reflects on the experience so far.

Keywords: MOOC, Massive Online Open Course, Open Education, Spain, Europe

1. Context

1.1. European context

1.1.1. European policies and regulations regarding MOOCs

The Education and Training 2020 strategy - ET2020 (EC, 2015a) is a part

of the broader Europe 2020 strategy, designed to promote growth and jobs in Europe, as well as to contribute to the development of skills for the labour market. Within Europe 2020, the *Opening up Education initiative* was launched in 2013 and its goal is to stimulate ways of learning and teaching through ICT and digital content, mainly through the development and availability of OER (EC, 2013). The initiative

proposes actions towards more open learning environments to deliver education of higher quality and efficacy and thus contributing to the Europe 2020 goals of boosting EU competitiveness and growth through better skilled workforce and more employment (EC, 2013, p. 2).

It is aligned with the *Open Education Europa* (EC, 2015b) portal, also launched by the European Commission in 2013 to grant access to all existing high-quality European OER repositories in different languages in order to make them easily accessible for learners, teachers and researchers. This portal maintains a scoreboard¹, with the aim of highlighting the potential that European institutions have in the world of OER and helping to visualize this potential by compiling the existing European- provided MOOCs available on different open websites, regardless of the platform that host them. Figure 1 shows the scoreboard of MOOCs in Europe.

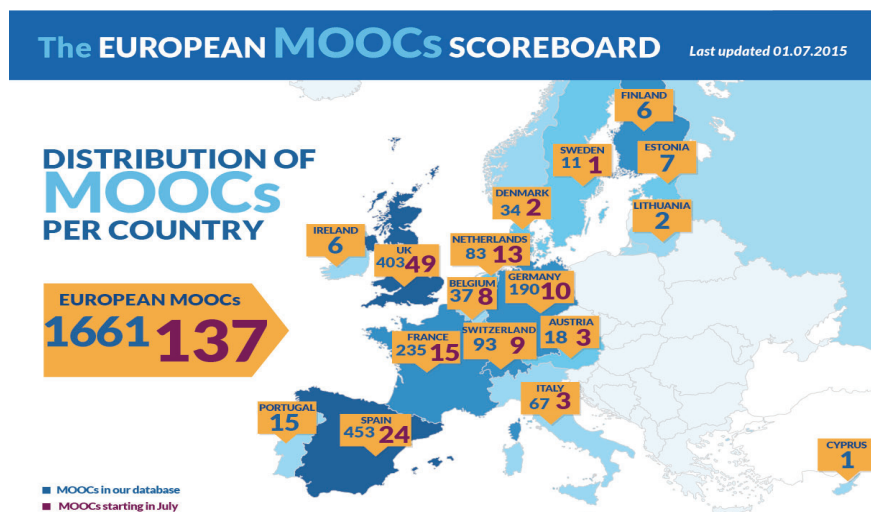


Figure 1: The European MOOCs scoreboard (updated in July 2015).

Source: <http://openeducationeuropa.eu>

The *Opening up Education* initiative proposes many actions in different fields, some of which directly appeal to higher education and open and

¹ http://openeducationeuropa.eu/en/european_scoreboard_moocs

distance education institutions. It departs from education and training institutions need to review their organisational strategies to stimulate innovative learning practices, and the potential that ICT offers for innovation and structural change. Technology and Open Educational Resources are seen as opportunities to reshape European Union education; technology provides the opportunity to increase efficiency and equity in education. Learners expect to acquire the digital skills for the 21st century and have their digitally-acquired skills easily certified and recognised for further learning or work, linking this way with the Erasmus + feature of promoting recognition and validation of skills and qualifications. The document (EC, 2013) becomes a relevant policy basis for educational and digital agendas in Europe.

1.1.2. European projects regarding MOOCs

Currently, there are various research and cooperation projects, funded by the European Commission, focused on MOOCs. Below a summary of three of them, that resembles the promotion that Europe is giving to this topic.

1) The *HOME project (2014-2016)*²

Funded in the Lifelong Learning Programme by the European Commission, where HOME stands for *Higher education Online: MOOCs the European way*. The aim of the project is to develop and strengthen an open network for European cooperation on open education, in general, and MOOCs, in particular. The partners (among which it is UNED) are building, since January 2014, an open institutional network on MOOCs based on European values like openness, equity, quality and diversity.

The specific objectives of this project of HOME (EADTU, 2014) are:

- a) To determine the opportunities and characteristics for a European cooperation on MOOCs and to further develop these characteristics based on European values like openness, equity, quality and diversity;
- b) To explicate and develop the didactic and pedagogic models for MOOCs on a European scale
- c) develop the conditions for shared educational services in offering and monitoring European MOOCs
- d) To develop sustainable business models for joint efforts on these European MOOCs at a global, European, national and institutional level.
- e) To build up a sustainable open knowledge network for these types of MOOCs which is open to the whole world.

² <http://home.eadtu.eu>

- f) To initiate activities in different learning communities to enhance European-wide competence development on main topics related to developing and offering MOOCs
- g) To create guidelines and the policy incentives on a local, national and European level for an open knowledge network in MOOC offerings.

23 higher education institutions that provide open and distance education in Europe, coordinated by EADTU, initially comprise the network. I have participated this project as a representative from UNED.

2) *ECO Project: Elearning Communication and OpenData (2014-2016)*³

The ECO proposal aims at extending to a pan-European scale the most successful MOOC experiences in Europe, piloting and showcasing these best practices by its implementation in regional hubs of excellence throughout Europe. To do so ECO will implement a merged MOOC platform integrating different modules provided by some ECO partners, to train teachers for online collaborative learning and certify teachers who will create their own courses. Main project objectives are:

- a) To analyse requirements for MOOC platforms from a pedagogical viewpoint (including learning analytics, web 2.0 and other aspects).
- b) To set up a framework for designing and implementing MOOCs.
- a) To design the overall ECO platform architecture and integrate all the individual modules building the overall platform.
- b) To pilot with the ECO platform in the 10 hubs involving at least 50.000 students (teachers from different educational levels).
- c) To analyse and assess the MOOC market international scenario.
- d) To develop an appropriate business strategy and business plan for ECO sustainability.
- e) To increase awareness in Europe on the open educational resources benefits for European citizens and institutions.

This project is coordinated by UNED (Spain) and there are 24 European partners collaborating in its development.

3) *EMMA Project: European Multiple MOOC Agregator (2014-2016)*⁴

It aims to showcase excellence in innovative teaching methodologies and learning approaches through the large-scale piloting of MOOCs on different subjects. EMMA will provide a system for the delivery of free, open, online courses in multiple languages from different European universities to help preserve Europe's rich cultural, educational and

³ <http://ecolearning.eu/>

⁴ <http://project.europeanmoocs.eu/>

linguistic heritage and to promote real cross-cultural and multi-lingual learning.

The pilot will operate in two steps, first by making available a significant number of existing courses from project partners and/or MOOCs providers and then by bringing on board a second tier of universities keen to experiment with MOOCs. Pilots will run in 7 countries with a total of 16 MOOCs and will involve at least 60,000 users. Courses will be offered in the language of each country, in English, and the pilot will trial an embryo form of multi-lingual translation by offering courses in Italian and Spanish as well. Advances in learning analytics will feature in the analysis and evaluation work and a series of innovative approaches will be trialed to make the piloted service sustainable in the medium to long term.

This project is coordinated by the University of Naples Federico II in Italy and involves 12 partners, including some in Spain.

1.2. National Spanish context

The landscape of MOOCs in Spain has been increasing and diversifying since 2012. The first institution offering MOOCs was UNED, in its pilot programme launched in October 2012 (UNED COMA, which will be explained in a further section).

As shown in figure 1 and as explained in the report by Oliver, Hernández-Leo, Daza, Martín and Albó (2014), Spain has become a leader in Europe offering of MOOCs, with a global offer in 2013 of over a hundred courses. “From the demand side, Spain also stands within the top-five countries with more participants, right after USA, UK, Canada and Brazil” (p. 5).

There has not been a policy of regulation about MOOCs at a national level. Besides the lack of national framework, different initiatives have been developed in Spain regarding MOOCs. Some of the most relevant are described below.

- a) UNED Abierta⁵: First MOOC experience in Spain. Pilot programme launched by UNED in October 2012. This initiative will be explained in coming sections.
- a) Miriada X⁶: private MOOC initiative launched in January 2013 by *Telefonica* (telecommunication company) and *Universia* (network of Spanish and Portuguese speaking universities promoted by *Santander Bank*). It provides a platform for MOOCs to universities in Spain and Iberoamerica. It is the biggest provider of MOOCs in Spanish.

⁵ <http://unedabierta.uned.es/>

⁶ <https://www.miriadax.net/>

- b) UCATx⁷: initiative launched in May 2014 by a consortium of universities in Cataluña (a region in Spain). It uses Open edX technology and offers MOOCs in Spanish, English and Catalan.
- c) Coursera⁸: Spanish institutions, such as the Autonomous University of Barcelona or the IE Business School, offer their MOOCs in this international platform, thus joining an existing option.
- d) AbiertaUGR⁹: MOOCs initiative launched by University of Granada in 2013. It has offered 4 MOOCs in Spanish.

The interest of Spanish universities for offering MOOCs is clear, and they have followed different paths:

- Joining existing private platforms, such as Coursera or MiriadaX
- Establishing a consortium of universities for offering MOOCs, using existing open source technology (Open edX), such as UCATx
- Using an own platform for offering own MOOCs, such as UNED or abiertaUGR.

1.3. Institutional UNED context

The National Distance Education University (*Universidad Nacional de Educación a Distancia* -UNED) has as its mission the public service of higher education through the modality of distance education¹⁰. Founded in 1972, it has the largest student population in Spain: more than 185000 registered students in graduate programmes, more than 7000 in postgraduate programmes (master and doctorate), more than 18000 in the continuing education programme and almost 16500 in language courses in 2012-13. It is one of the largest universities in Europe. 11 Faculties/Schools compose the structure.

UNED delivers its teaching through the modality of distance education, characterized for utilizing a specific didactical methodology by a conjoint use of printed, audiovisual and technological media, along with face to face support from tutors in our regional centres (more than 60 all over Spain) and communication means with professors. It is a public university, dependant on the national Ministry of Education. Its functions are (UNED, 2005):

- ❖ Facilitate access to university and continuation of studies to any person able to follow higher education, which choose UNED due to its methodology or due to professional, economics, geographical or

⁷ <http://www.ucatx.cat/>

⁸ <https://www.coursera.org/>

⁹ <https://abierta.ugr.es/>

¹⁰ Facts and data about UNED: http://portal.uned.es/portal/page?_pageid=93,24305391,93_24305392&_dad=portal&_schema=PORTAL

other reasons.

- ❖ Offer training for professional activities that require scientific knowledge and methods.
- ❖ Developed permanent education and professional development programmes.
- ❖ Incorporate, develop and facilitate the use of the most suitable technological methods and systems for the UNED educational model.
- ❖ Develop research in all scientific fields.
- ❖ Promote internal professional development and promotion for its faculty and staff.
- ❖ Facilitate the creation of a plural community based on scientific and cultural knowledge that promotes progress and solidarity among Spanish people.
- ❖ Co-ordinately develop teaching, research and management activities.
- ❖ Encourage scientific exchange, academic mobility and cooperation for development.

UNED has offered open educational content (especially in an audiovisual format) since its creation in 1972, joined the OpenCourseWare movement in mid 2000's and launched its first massive open online courses (MOOCs) in 2013. But it was in 2012 when a specific programme related to open educational resources was established (Gil-Jaurena, 2014a).

The OER programme (*UNED Abierta*, in Spanish) intends to make visible all the open educational resources produced at UNED and promote their creation and use. Formerly located in the Vicerrectorate for Technology, UNED Abierta was moved to the Vicerrectorate for Continuing Education in September 2013. There was a shift from a technologically towards a more pedagogically centred programme within the frame of lifelong learning provided by UNED.

One of the main tasks addressed from UNED Abierta, and a main reason for its constitution as an independent programme within UNED, are MOOCs. UNED launched its own platform for MOOCs (COMA, in Spanish) in 2013.

2. Description of the UNED MOOCs case

2.1. Overall direction

UNED COMA (*cursos online masivos abiertos* – MOOCs) project was launched in spring 2013 in an own platform¹¹ (figure 2) with 22 courses offered in the first edition and 25 –3 of them new– in the second edition

¹¹ <https://coma.uned.es>

(November 2013-February 2014). The third edition was launched in March 2015.



Figure 2: UNED MOOCs website

The development of MOOCs in parallel to other university educational processes (regular degrees, continuing education, etc.) is a risk. UNED is working towards integration. With this regard, UNED approved in March 2014 the following criteria for the development of new MOOCs, in an attempt to integrate them more clearly with our other activities:

- a) Quality and scientific / academic relevance of the proposal and the professors.
- a) Current topic and social interest.
- b) Courses linked to UNED educational programmes: graduate, postgraduate, continuing education, and language learning programmes.
- c) Courses 101, introductory courses or courses that deal with generic or cross-curricular competences.
- d) Courses linked to competitive research projects and/or groups, in order to disseminate research knowledge to wider audiences.
- e) Courses linked to collaborating institutions Chairs at UNED (UNESCO, etc.).
- f) Courses with a special innovative approach either in methodology, pedagogical design, social learning, etc.

To be included in the programme, one of the options is that a MOOC has to be related to a course in the continuing education programme, covering introductory topics to lifelong learning courses offered by UNED (in the postgraduate programme, specially). The MOOCs will be self-

contained (covering a full topic) and serve as a part of a longer course. This leads the way towards credit recognition, as well (Gil-Jaurena, 2014b).

2.2. Participants

In the first edition (22 courses open from March 2013 to October 2014), more than two hundred thousand students took the courses (from 1670 to 58873 respectively in the least and most numerous courses)¹². In the second edition, opened in November 11th 2013, more than 60000 students were registered in the courses at the end of February 2014 (when all the courses, except 2, were already finished). In the first edition the courses remained open during 7-8 months and in the second one they were open during 3 months; this explains the differences in the number of registered students between the two editions.

Language courses were the most popular (Basic and Professional English courses, and Basic German course). Courses covering financial and business issues (accounting, entrepreneurship) were also popular. More specialized courses, such as chemistry or logic, had fewer learners, but still more than 500 in the second edition.

Concerning learners' profile, registration information and results from the initial survey say that there is a majority of women, with a high level of education and either unemployed or employed (not so many full time students). The courses are in Spanish, and most of the registered learners are in Spain (more than 90%). Other learners are in Mexico, Colombia, Argentina or European countries.

About dropout rates, in the second edition, the average of students who start the course but don't finish it is higher than 80%.

2.3. Pedagogical strategies and assessment of learning

UNED MOOCs can be framed, in general, within the x-MOOC umbrella. They fall into the cognitive-behaviourist pedagogy and rely primarily on information transmission, computer marked assignments and peer assessment (Rodríguez, 2013, p. 71). Instructional design is based on:

- providing content, mainly through videos (figure 3),
- and proposing activities, mainly multiple choice question tests (computer marked) and other activities like essays, open questions, etc. (peer-assessed).

¹² All data and figures have been provided by UNED Abierta

UNED COMA Entorno de formación abierta de la UNED donde podrás acceder a cursos online masivos y abiertos

UNED Abierta | English | Español

Inicio | FAQ | Metodología Mis cursos Bienvenido, Inés Gil Jaurena

General Clases Debates Progreso Administración del curso

[Materiales y Secuenciación]

Curso Lógica y Usos: Módulo 0. Presentación del curso Lógica y usos

2:56 / 4:18

N - [0] Perspectiva, Objetivos, Organización.

1. [Materiales y...
2. [Objetivos y Motivación]
3. [Dinámica de trabajo]
4. Activ::Proporcional
5. Activ::Monádicos
6. Activ::Díadicos-Identidad
7. Activ::Herramientas y...
8. Activ::Herramientas y...
9. Activ::Deducción-Natur...

N - [1] Enunciados: cómo y para qué representarlos

N - [2] Enunciados: cuándo unos

Figure 3: UNED Lógica y usos MOOC homepage

Each course, designed by its own professors, has chosen to put a greater focus on social interaction through debates in the forum, or on developing a higher number of short videos thus focusing on the content, or on promoting the use of other external social tools (social networks, blogs, etc.). The opportunity to explore and experiment diverse pedagogical models through MOOCs has been a main motivation for our professors to participate in this new project at UNED (Gil-Jaurena, 2014a). In this sense, each course has used a different approach to tutoring and teacherpresence. Some professors have preferred to be actively involved in the delivery of the course, by encouraging debates in the forum asking questions periodically, solving student's doubts about the academic content, etc. Others, meanwhile, have been more actively involved in preparing material for self-learning and not so present in the delivery of the course. Diverse pedagogical strategies have been experimented in the different courses. Regarding support to learners, besides professors (authors of the study contents, designers of the course and, in some courses, actively involved in the development of the courses) there have been two different figures with active roles during the delivery of the courses: assistant tutors (in charge of motivating and supervising debates along with professors, reordering messages, compiling FAQs, solving doubts about how to get access to the course content, to certificates, etc.) and technical support staff (in charge of solving technical problems: registration, duplicated users, downloading badges and certificates, etc.).

Assessment of learning is done without extra effort on the professor side. It relies on automatic assessment of online tests and/or

peer-assessment of assignments, undertook by peer learners in the MOOC. The technology used to facilitate these types of assessment is incorporated in the MOOC platform. It is a basic echnology and does not support more complex assessment tools.

2.4. Certification and recognition of learning

About certification options, learners who complete the course (at least 80% of progress) have the following options:

- ❖ Digital badge: based on Mozilla Open Badges Infrastructure (OBI), it is free and it doesn't have academic effect (figure 4).
- ❖ Digital credential: digital certificate with no academic effect, it costs 15€.
- ❖ Certificate: digital certificate for learners who, besides completing the course, take an exam in any of our regional centres. It costs 50€ and can have academic effect.



Figure 4: Example of a digital badge issued by UNED COMA

The number of learners who request a certification is low: in the second edition, around 3% of those who registered requested a paid credential or certificate (mainly credential, with no face to face exam).

It was approved by the university government body in 2014 that students holding an UNED MOOC certificate could get recognition in the undergraduate programmes at UNED. The equivalence is 1 MOOC = 1 ECTS.

2.5. MOOC system (technological aspects)

UNED MOOCs are based on a specific platform developed in Spain since 2012, called OpenMooc¹³. It has the basics for running a MOOC: infrastructure for hosting videos, online tests, peer-assessment,

communication forums, open digital badges.

A new version with more features is being developed within the frame of the European research project financed by the European Commission ECO, already mentioned.

Given the difficulties for developing the software in order to incorporate new functionalities and keep it updated in a changing and evolving scenario, UNED is analyzing other alternative widespread and open source platforms, such as Open edX.

3. Reflections on the initial experiences

The experience with these first MOOCs should lead to reflection about the achieved results, lessons learned and future steps.

Initial and final surveys to participants were used in the second edition (November 2013-March 2014). The results¹⁴ show a general satisfaction with the courses, including content (specially videos and self-assessment tools), methodology, structure and duration of the courses.

A general reflection within institutions should take place regarding the role that open educational policies and practices may represent. The development of MOOCs in parallel to the university mainstream processes is a risk at the moment, as the integration of these processes and resources has not been addressed to its full extent (Gil-Jaurena, 2013).

At a political level, a main lesson learned is that quantity shouldn't detract attention from quality. This is a main challenge in education, and also is in MOOCs and in open education in general (Misra, 2013).

MOOCs have been presented as incubators for educational research (Gil-Jaurena & Titlestad, 2013). Pedagogical issues around MOOCs cover diverse aspects, such as innovation and research opportunities, quality issues, assessment and recognition or technological improvements (Gil-Jaurena, 2014b). As an example of a more specific level, a lesson learned is that access to educational content should be available at any time; but usually MOOCs are open only during specific periods as a course experience (that is, with activities, forum, assessment, etc.).

Another important issue relates to the identification and better knowledge of learners: who they are, which motivations and expectations they present when they approach MOOCs, which use they make of the resources, what other needs they show, etc. Besides the profile, information about the learning paths that students follow is also of great interest in order to improve the learning experience and reduce attrition rates.

¹³ <http://openmooc.org/>

¹⁴ The results of the surveys are for internal use and remain unpublished, the information has been provided by UNED Abierta.

Finally, a relevant issue relates to financial aspects and sustainability. We have to "be aware of corporate interests in MOOCs that may compete with academic interests at the mission level (different missions) and at the delivery level (different content, different methodologies) and results level (different audiences, different credits, different revenue)" (Gil-Jaurena & Titlestad, 2013, p. 4).

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