COMPETEN-SEA
Capacity to Organize Massive Public Educational Opportunities in Universities of Southeast Asia
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WP1.1

MOOCs Feasibility in Southeast Asia: Report

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PART ONE

INTRODUCTION
1.1 Overview

The Southeast Asia region has been rapidly developing in the past 20 years. All four countries are in the HSBC’s list of top 50 economies in 2050; Indonesia and the Philippines are in Goldman Sachs's Next Eleven list of economies mainly because of their fast growth and large population.

Economic development triggered fundamental educational reforms in all countries of Southeast Asia. This is reflected in the various education development plans in several Southeast Asian countries such as the Malaysia education blueprint 2015-2025, the enactment of the Philippines open and distance learning act (RA 10650) in December 2014, and the Indonesian national act No. 12 of 2012 on Higher Education and the Ministerial Act No. 109 of 2013 on Implementation of Distance Education in Higher Education. The development of these policies and plans drew on many sources of input from the World Bank, UNESCO, OECD, and results from PISA and TIMSS with the aim of achieving parity with the global development of education.

At the same time, studies have confirmed that all countries of the region face similar problems affecting access to and quality of educational systems:

- Growing disparity between wealthiest and poorest, urban and rural population, resulting in unequal access to educational opportunities
- Rapidly growing number of pupils and students overwhelming the existing educational capacities
- Insufficient quality, often obsolete, teaching practices and curricula
- Growing gap between the quality of education offered by ‘elite’ educational establishments and mass education, etc.

Therefore, Massive Open Online Courses (MOOCs) can be a solution (some argue - the solution) to the regional educational problems. The Competen-SEA consortium believes that MOOCs is one of the key platforms, which provide an effective and efficient means to provide marginalized groups with access to relevant learning resources. It has been proven that MOOCs not only promised to bring the Ivy League experience to anyone with a broadband connection — they provided a way for learners, wherever they are, to learn new skills and even earn credentials at little or no cost. MOOCs also make more visible the role of Universities as beacons of knowledge for the entire society as they can transport this knowledge to almost everyone.

Since the Competen-SEA project involves the development and delivery of self-paced learning content for addressing learning needs of identified marginalized groups within the project partner countries in Southeast Asia, a feasibility study is essential for identifying key factors, resource needs and readiness of the target group for undertaking self-paced learning using the latest MOOC technology.
1.2 Objectives

The feasibility study will focus on four main aspects:

- **Regulations and Initiatives** that have been adopted in the partner countries related to self-paced learning, and more specifically, MOOC adoption.
- **Resource Readiness** in terms of required infrastructure, instructional and support resources for delivering effective, high quality learning content to the targeted groups in each partner country.
- **Learner Readiness** in terms of the Internet literacy of the target groups, and their readiness to adopt online learning tools, MOOC-based learning, and acquire necessary devices and Internet services to support their learning.
- **Stakeholders’ Readiness** in terms of how supportive of the respective MOOC initiatives and the universities involved in the Competen-SEA project, as well as the relevance of the proposed content towards meeting the life-long learning needs of the target groups.

The outcomes and findings of the feasibility study are expected to provide guidelines and blueprints for communities wishing to adopt these MOOC-based learning resources as part of their community enhancement projects, as well as to serve as a reference for other developing countries wishing to adopt MOOC technologies for self-paced learning as an emerging learning paradigm for sustainable growth. These guidelines and recommendations are documented in “**WP1.2 MOOCs Recommendations Report**”

1.3 Scope of Feasibility Study

The feasibility study will be conducted for Indonesia, Malaysia and the Philippines, the three countries from Southeast Asia involved in the Competen-SEA project.

There will be a mixture of background studies as well as target-group surveys to provide both macro and micro view of the targeted learners for the Competen-SEA project. Since the targeted learners for each country differ in terms of their locations, composition, literacy levels, and access to Internet broadband, specific issues raised for individual learner groups in specific countries may not be generalizable to the entire region. Nonetheless it is believed that the survey results will still serve as case studies for other communities and agencies interested in community development to understand the issues faced by marginalized groups, often found in rural communities with limited resources and lower income levels, in adopting new learning technologies such as MOOC-based learning.
PART TWO

REGULATIONS AND INITIATIVES
2.1 Regulation & Policy

2.1.1 Malaysia

As a developing country, Malaysia aspires to become a developed, prosperous and competitive nation. To achieve this country's vision, the Ministry of Higher Education (MoHE) of Malaysia has strategized the direction of national higher education for the future that focuses on the development of quality human and intellectual capital.

2.1.1.1 National e-learning Policy

The strategic plan to develop quality human and intellectual capital is documented in the national higher education strategic plan, in which e-learning has been identified as one of the 21 critical agenda projects (CAPs) and a key result area of the ministry. Thus, all institutions of higher learning - as the agencies of this ministry - need to be involved in executing the planned activities in achieving the target of the e-learning as one of the CAPs.

In relation to this and due to the importance of e-learning in today's era of information technology, the government has stressed the need to have a standard, national policy on e-learning. The national e-learning policy or dasar e-pembelajaran negara (DePAN) was launched on 16 April 2011. This policy was developed as a guiding principles for e-learning deployment among Malaysian higher education institutions (HEIs). The main focus of DePAN is for these HEIs to use the ICT as an enabler to enhance the quality of teaching and learning. The first version of DePAN consists of five pillars, namely: infrastructure, organizational structure, curriculum and content, professional development, and enculturation. In general, DePAN requires each HEI to (i) deploy its own learning management system (LMS), (ii) develop original e-content, (iii) utilise the blended learning approach in course delivery, (iv) establish a professional development programme with regards to e-learning and (v) Execute effective activities to enculturate of the e-learning usage within campus community. Each of the five pillars has its own focus area and activities that need to be carried out according to three implementation stages, (a) Initial phase (2011-2012), (b) Enabled phase (2013-2014) and (c) Optimized phase (2015 onwards). Therefore, in order for these objectives to take effect and be achieved, a guideline for good practices in each of the areas identified in DePAN is greatly needed (Ministry of Education, 2011).

Then, with the advancement of technology in education that allows for online and blended learning, as well as the ministry’s focus to enrich the open education in the context of open educational resources (OER), Open CourseWare (OCW), and massive open online courses (MOOCs), the first version of DePAN was upgraded to DePAN version 2.0. This newer version of DePAN has stressed not only to the quality aspect but also encourage innovation in education, branding of Malaysian education, cost reduction, human resource efficiency and lifelong learning. Unlike DePAN version 1.0 which has five main pillars, DePAN 2.0 outlines six main domains known as:

1. infrastructure and info-structure,
2. governance,
3. online pedagogy,
4. e-contents,
5. professional development, and
6. acculturation.  
(Source: Ministry of Higher Education, n.d)

Similar to DePAN version 1.0, this latest version of DePAN proposed three phases of implementation: (a) Phase 1 (2015), (b) Phase 2 (2016-2020) and (c) Phase 3 (2021-2025). Each phase will also have its own focus area that needs to be carried out. For instance, online pedagogy pillar has three main focus areas: (1) blended learning, (2) open learning and (3) e-assessment. Meanwhile, for the professional development, it also has three main focus areas, involving (1) Knowledge, (2) Skills and (3) Practice. An example of the activities for this Online Pedagogy pillar is shown in Table 1.

<table>
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</tr>
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<tbody>
<tr>
<td>Online Pedagogy</td>
<td>Blended learning</td>
<td>30 % of HEI courses are to be conducted in blended learning</td>
<td>50 % of HEI courses are to be conducted in blended learning</td>
<td>70 % of HEI courses are to be conducted in blended learning</td>
</tr>
<tr>
<td>Open learning</td>
<td></td>
<td>Each HEI needs to offer at least three MOOCs</td>
<td>Each HEI needs to offer at least 15 MOOCs</td>
<td>Each HEI needs to offer at least 30 MOOCs</td>
</tr>
<tr>
<td>e-assessment in blended learning</td>
<td></td>
<td>5 %</td>
<td>10 %</td>
<td>15 %</td>
</tr>
</tbody>
</table>

2.1.1.2 Malaysian Education Blueprint (Higher Education)

Of late, higher education environment is facing numerous challenges, ranging from higher demand from the society, competitive global economic as well as fast advancement of technology. The Malaysian Ministry of Higher Education (MoHE) attempts to transform Malaysian higher education system to meet these challenges. In 2015, the Ministry of Higher Education (MoHE) has launched its Malaysian education blueprint for 2015-2025 (higher education).
In the blueprint, shown in Figure 1, the ministry has identified 10 shifts that will spur continued excellence in higher education system involving: (1) holistic, entrepreneurial and balanced graduates, (2) talent excellence, (3) nation of lifelong learners, (4) quality technical and vocational education & training, TVET graduates, (5) financial sustainability, (6) empowered governance, (7) innovation ecosystem, (8) global prominence, (9) globalized online learning, and (10) transformed higher education delivery (Ministry of Higher Education, 2015).

The first four shifts focus on outcomes for talent in the higher education system, including students in both the academic and technical and vocational education pathways, the academic community, as well as all Malaysians participating in lifelong learning. These key players collectively represent the ideals of 'learned, values-driven talent'. Meanwhile, the other six shifts focus on enablers for the higher education ecosystem, covering critical components of higher education such as funding, innovation, governance, online learning, global prominence, and delivery.

**Globalized online learning (GOL)** – the 9th Shift – is an important enabler in achieving Malaysia’s goal in terms of access, quality and efficiency of higher education. The term globalized not only refers to the 'desire for a global target audience but also the development of e-content that is of international standard' (MoHE, 2015, pg. 199). The main focus of GOL...
is to enrich the open education in the context of open educational resources (OER), Open CourseWare (OCW), and massive open online courses (MOOCs).

As the country aspires to be a premier education hub through this GOL, several objectives of this shift have been identified:

● to observe the increase of access to quality education for its people and global community;
● to provide efficient course delivery;
● to build the Malaysia education brand; and
● to increase prominence for Malaysian higher learning institutions, especially in niche areas and expertise

(source: MoHE, 2015)

In this shift, the ministry has also declared Malaysia’s intention to leverage on MOOCs as a way to take advantage of technology to improve quality and widen access to education. For this purpose, Malaysia MOOCs was launched using the OpenLearning – a Sydney based MOOC platform. These courses can be found at https://www.openlearning.com/malaysiamoocs.

The objectives of offering MOOC courses through this Malaysia MOOCs are:

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

(source: Fadzil, Latif & Tengku, n.d.)

In this ninth Shift, seven key initiatives are suggested by the ministry:

<table>
<thead>
<tr>
<th>Initiatives</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure</td>
<td>Establish dedicated independent infrastructure network for Malaysian higher education and any technology necessary for delivering globalised online learning;</td>
</tr>
<tr>
<td>Awareness</td>
<td>Launch MOOCs in subjects of distinctiveness for Malaysia, targeting 50% international enrolment, and promote MOOCs initiatives to the Malaysian public;</td>
</tr>
<tr>
<td>Capacity building</td>
<td>Improve training programmes for academic and support staff to enable effective utilisation of the best pedagogical models;</td>
</tr>
<tr>
<td>Governance</td>
<td>Promote online programme development by establishing a national platform, shared services and coordination of MOOCs development and building partnerships;</td>
</tr>
<tr>
<td>Policy</td>
<td>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;</td>
</tr>
<tr>
<td>Credit transfer</td>
<td>Establish mechanism to allow credit transfer of courses completed by students via MOOCs and other online learning platforms; and</td>
</tr>
<tr>
<td>Lifelong learning</td>
<td>Develop a common platform to enhance the utilisation of MOOCs for lifelong learning.</td>
</tr>
</tbody>
</table>
2.1.2 Indonesia

The development of science and technology has become an integral part in the development of Indonesia. The Indonesian Constitution 1945, Second Amendment (in 2000), article 28C paragraph (1) stated that 'Every person shall have the right to develop him/herself through the fulfillment of their basic needs, shall have the right to obtain education and to enjoy the benefits of science and technology, arts and culture, for the enhancement of the quality of their life and for the welfare of the humankind'. Furthermore, fourth amendment (in 2002) of the constitution 1945, article 31 paragraph (5) stated that 'The government shall advance science and technology by upholding religious values and national unity for the progress of civilization as well as the welfare of the humankind'. The development of science and technology and higher education must be able to produce technology and innovation as well as skilled human resources to meet the needs of society, or it can be a real solution to the problems faced by the community.

Based on the national medium term development plan (RPJMN), the third (2015-2019), Indonesia's development agenda is to establish the overall development by emphasizing the development of the economy with a competitive advantage based on available natural resources, qualified personnels, as well as the competencies in science and technology. The policy direction is to improve access and quality in higher education through the following strategies: Increasing the capacity as well as the quality and participation rates in higher education; enhancing the effectiveness of the affirmative policy. As mandated by the republic act No. 20 of 2003 on 'National Education System' that educational path consists of formal education, non-formal, informal and can be complementary. The education can be conducted through open systems in face-to-face meeting and/or over a long distance (distance education/learning).

Distance learning is the education process where learners and educators are separated in terms of locations and times and facilitated by various learning resources using ICT and other distribution media. The republic act No. 20 of 2003 as the guiding principles in National Education System and the republic act No. 12 of 2012 as the guiding the principles in national higher education define that distance learning implementations can be organized in all pathways, level and types of education; its function is to provide educational services to group of people who cannot attend the regular education; it is organized in a variety of forms, modes, and scopes supported by learning assessment system that ensures the quality of graduates in accordance with national education standards.

There are concern about the low gross enrollment ratio (GER) of higher education institutions (HEI) in Indonesia compared to neighbouring ASEAN countries, only about 18.85% in 2012 (Direktorat Statistik Kesejahteraan Rakyat - Badan Pusat Statistik, 2016). Distance learning (DL) was accepted as the effective tool to improve the GER, especially for Indonesia where the learners are located in a very dispersed area. In the early 2000, the implementations of DL held by HEI were very diverse (Pannen, 2003). In addition to that, Government of Indonesia has established Universitas Terbuka (UT) in 1984 as the Indonesia Open University, aimed at providing access to higher education for high school graduates who could not go to conventional universities due to economic or geographical constraints. The Directorate General of Higher Education (DGHE) of Ministry of Research, Technology and Higher Education is the governing body for the implementation of distance learning in HEI. Through the ministerial act No. 109 in 2013 on the implementation of distance learning in higher education, DGHE employed the regulation for the HEI who will hold distance learning programs. Several earlier initiatives had been conducted by DGHE.
through the establishment of INHERENT (Indonesian Higher Education Network) since 2007 and IDREN (Indonesian Research and Education Network) since 2015.

2.1.3 Philippines

The 1987 Philippine Constitution enshrines the inalienable right of every Filipino to education. Article XIV, Section 1 provides that ‘The State shall protect and promote the right of all citizens to quality education at all levels, and shall take appropriate steps to make such education accessible to all.’ Toward this end, it shall establish, maintain, and support ‘a complete, adequate, and integrated system or education relevant to the needs of people and society’, as well as ‘a system of free public education in the elementary and high school levels’ (Art. XVI, Sec. 2, 1987 Philippine Constitution).

There are, however, some hindrances to the Philippine government’s pursuit of providing quality and accessible education to all Filipinos. On the one hand, problems related to shortage in education infrastructure (the lack of school buildings, classrooms, and school desks), aggravated by the shortage in teachers and the lack of textbooks, beset the government every school opening in the Philippines—this despite the education sector receiving the largest share and allocation in the national budget. On the other hand, poverty drives some families to make their children defer—if not abandon altogether—their plans to complete their education through the formal and traditional educational system.

The latest official poverty incidence among Filipinos was estimated by the Philippine Statistics Authority (PSA) at 21.6 % in 2015, whereas the poverty incidence among Filipino families for that same year was estimated at 16.5 %. In terms of magnitude, 21.9 million Filipinos (of the total population of 100.98 million Filipinos), and 3.8 million Filipino families, did not earn enough to meet their basic food and non-food needs in 2015—including their needs in education. According to the 2013 functional literacy, education and mass media survey (FLEMMS) that covered around 36 million Filipino children and youth aged 6 to 24, one in every ten children was (or about four million were) out of school in 2013. The 2013 FLEMMS also showed that 19.2 % of the four million out-of-school children and youth did not attend school because their family’s income was insufficient to send them to school.

Aside from the poverty of children and their families, the Philippine government faces other

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2 In the 2016 National Budget of the Administration of President Benigno S. Aquino III, the Education Sector (i.e., the Department of Education, State Universities and Colleges, construction of school buildings) received the largest allocation, at Php 490.6 million—representing 16.3 % of the National Budget of Php 3 001 800 000. Philippine Department of Budget and Management (DBM), People’s Budget 2016. Malacañang, Manila: Department of Budget and Management, February 2016. Also available at http://www.dbm.gov.ph/wp-content/uploads/Our%20Budget/Our%20Budget/2016/2016%20People's%20Budget.pdf (accessed 28 April 2017).


4 Ibid.


6 Ibid.
challenges in fulfilling its mandate of providing education for all. In addition to addressing the situation of children who are poor or experiencing financial difficulties, the government needs to reach out to children in other difficult or different circumstances. The Enhanced Basic Education Act of 2013 (or Republic Act 10533)—in addition to increasing the number of years for basic education from 10 to 13 years—stipulates that basic education should be inclusive—that is, ‘learner-oriented and responsive to the needs, cognitive and cultural capacity, the circumstances and diversity of learners, schools and communities....’

The Implementing Rules and Regulations of the Enhanced Basic Education Act of 2013 or RA 10533, as set forth in the Department of Education’s Department Order No. 43 s. 2013, provides for the implementation of programs catering to the physical, intellectual, psychosocial, and cultural needs of various types of learners: gifted and talented learners; learners with disabilities; Muslim learners; learners from indigenous cultural communities; and learners under difficult circumstances, such as those suffering from chronic illness, child abuse, child labor practices, or displacement due to armed conflict, urban resettlement, or disasters.

Geographical and geophysical factors may also constrain the Philippine government from delivering quality and relevant education to all, given that there are over 40 000 public schools in the 7 107 islands of the Philippines.

To address the needs of poor students and those in difficult or different circumstances who are at risk of dropping out from school, the Department of Education (DepEd) of the Philippines has expanded the delivery of education—from the traditional, formal, school-based system, to include new methods in learning. These alternative delivery modes (ADMs) are more flexible and responsive approaches to accommodate the needs and realities of learners with diverse sociocultural and economic backgrounds, outside the formal school system.

A prime example of an ADM is the open high school program (OHSP), a strategy that not only addresses the problems of the large number of dropouts and the low secondary level participation rate, but also responds to the issues of the lack of classrooms, learning materials, and teachers in poor and marginalized communities in the Philippines. The OHSP does not require students to attend regular classes in schools while enrolled, but uses

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7 Section 2 (c) of Republic Act No. 10533 (‘An Act enhancing the Philippine Basic Education System by strengthening its curriculum and increasing the number of years for basic education, appropriating funds therefor and for other purposes’ – also known as the ‘Enhanced Basic Education Act of 2013’). Passed by the Fifteenth Congress of the Republic of the Philippines on 30 January 2013, and signed into law by President Benigno S. Aquino III on 15 May 2013, http://www.gov.ph/downloads/2013/05may/20130515-RA-10533-BSA.pdf (accessed 28 April 2017).

8 Section 8 (Inclusiveness of Enhanced Basic Education) of the Department of Education (DepEd) Order No. 43, s. 2013 (‘Implementing Rules and Regulations (IRR) of Republic Act No. 10533 otherwise known as the Enhanced Basic Education Act of 2013. Signed by Br. Armin A. Luistro FSC (Secretary, Department of Education), Dr. Patricia B. Licuanan (Chairperson, Commission on Higher Education), and Sec. Emmanuel Joel J. Villanueva (Director General, Technical Education and Skills Development Authority) on 4 September 2013, http://www.deped.gov.ph/sites/default/files/order/2013/DO_s2013_43.pdf (accessed 28 April 2017).


flexible and distance learning strategies to accommodate learners whose financial situation, chronic illness, physical impairment of disability, remote residence, or state of being displaced, and other such reasons, prevent them from attending regular classes in schools. A learner who is willing to undergo independent or self-directed learning, and who has been assessed capable of doing so, can enroll in the OHSP.\textsuperscript{11}

The incorporation of e-learning technologies is a critical component in the Philippine government’s promotion of ADMs. A 2015 report submitted to the United Nations Educational, Scientific and Cultural Organization (UNESCO) concludes that ‘the applications of modern information and communication technology may offer the only feasible medium for delivering high-quality instruction to millions of learners in a large, diverse and geographically dispersed population’in the Philippines (italics ours).\textsuperscript{12}

Among the major achievements of the sixteenth congress of the Philippines (July 2013 to July 2016) was the passage of four laws ‘aimed at providing quality and accessible education for all, particularly at the tertiary level.’\textsuperscript{13} Of these, we shall focus on Republic Act (RA) 10650, or the ‘open distance learning act,’ which institutionalizes open distance learning at all levels of tertiary education.\textsuperscript{14} Among all the Philippine laws, RA 10650 offers the greatest possibility in promoting e-learning technologies, particularly massive online open courses (MOOCs), mandating as it does the acceptance of online courses as formal education.

Republic act No. 10650 (‘An act expanding access to educational services by institutionalizing open distance learning in levels of tertiary education and appropriating funds therefore’), otherwise known as the ‘open distance learning act’, was passed by the Philippine Senate and the House of Representatives on 23 September and 24 September 2014, respectively, and signed into law by President Benigno S. Aquino III on 9 December 2014. Its rationale is ‘to expand and further democratize access to quality tertiary education through the promotion of open learning as a philosophy of access to educational services, and the use of distance education as an appropriate, efficient and effective system of delivering quality higher and technical educational services in the country’ (Sec. 2, declaration of policy).

The details of the open distance learning act (RA 10650) shall be discussed in this paper’s subsequent section on ‘MOOC guidelines’. For now, it would suffice to mention that the curricular offerings using the open distance learning (ODL) mode should conform to the ODL

\textsuperscript{11} Ibid., 21.
\textsuperscript{12} Philippine Education for All 2015: Implementation and Challenges, 51.
\textsuperscript{13} These four laws providing quality and accessible education at the tertiary level are: (1) Republic Act (RA) 10647, or the law strengthening the ladderized interface between technical-vocational education and training, and higher education; (2) RA 10648, or the law providing scholarship grants to top graduates of all public high schools in state universities and colleges (SUCs); (3) RA 10650, or the law expanding access to educational services by institutionalizing open distance learning in levels of tertiary education; and RA 10687, or the law providing for a comprehensive and unified student financial assistance system for tertiary education (UniFAST). They were all passed during the Sixteenth Congress of the Philippines (June 2013 to June 2016). Source: House of Representatives (Philippines), Committee Daily Bulletin (a publication of the Committee Affairs Department), Vol. III, No. 85 (7 June 2016), http://www.congress.gov.ph/legisdocs/cdb/cdb16-v3i85-20160607.pdf (accessed 28 April 2017).
\textsuperscript{14} Republic Act No. 10650 (‘An Act expanding access to educational services by institutionalizing open distance learning levels of tertiary education and appropriating funds therefor – also known as the “Open Distance Learning Act”). Passed by the Sixteenth Congress of the Republic of the Philippines on 23 September 2014 (Senate) and 24 September 2014 (House of Representatives), and signed into law by President Benigno S. Aquino III on 9 December 2014. Available from http://www.gov.ph/downloads/2014/12dec/20141209-RA-10650-BSA.pdf (accessed 4 May 2017).
guidelines established by the Commission on Higher Education (CHED) and/or the Technical Education and Skills Development Authority (TESDA), as applicable. Upon the successful completion of the requirements for the academic program, the student can be awarded the appropriate academic degree or certificate. The law also designates the University of the Philippines Open University (UPOU) to assist and provide its expertise to the CHED and TESDA in the development of open learning and distance education. Moreover, RA 10650 encourages broadcast media and telecommunications networks to provide assistance to, and cooperate with, higher education institutions (HEIs) offering ODL programs. Finally, the law offers tax exemptions to individuals and organizations that help develop ODL programs.

2.2 MOOC Guidelines

Massive open online courses (MOOCs) can be defined as ‘online courses designed for large numbers of participants that can be accessed by anyone anywhere as long as they have an Internet connection, are open to everyone without entry qualifications, and offer a full/complete course experience online for free.’ The educational opportunities offered by MOOCs have been facilitated by the rapid developments in today’s ICT and digital age—particularly the spread of personal Internet access.

2.2.1 Malaysia

As one of the 10 shifts identified in the Malaysian education blueprint 2015-2025 (Higher education), the globalized online learning (Shift 9) serves to enrich the open education including in the context of MOOCs. In line with this national higher education agenda, all 20 public universities in Malaysia need to be involved. Several committees at the federal level have been set up to ensure that the MOOC initiative introduced by the Ministry of Higher Education becomes a reality. In addition, each of these public universities is required to establish its own MOOC team to plan, design, develop, manage and assess its MOOC initiative.

In order for any university to develop its own MOOC, several guidelines are recommended. These recommendations and guidelines were developed by the Malaysian Public Universities’ e-learning Council (MEIPTA) coordinators. These guidelines (MEIPTA, in press) include:

(a) Course component

Each MOOC needs to have three main components, namely the logo, landing page and content page.

I. Logo: The university’s logo, the ministry’s logo, and Malaysia MOOCs logo.

II. Landing page: The design of this landing page should include main page, course synopsis, course syllabus, learning outcomes, prerequisite, course delivery format, instructor info, course duration and starting date, frequently asked questions, username and password, announcement, disclaimer, and course password.

III. Content page: The content page for each topic should cover: subtopic, learning outcomes, learning materials, learning activities, assessment and additional references

(b) Course development
   The development of each MOOC is based on the learning activities which should align with the learning outcomes. In specific,
   I. it has to follow certain development stages as proposed by the committee;
   II. instructional design phases have to be adhered to; and
   III. constructive alignment between learning outcomes, learning activities and assessment.

Each university needs to form its own MOOC production committee that may consists of subject matter experts, graphic designers, video producers, editors, etc. As video production is an important component in the MOOC environment, specific guidelines on the use and development of the video clips are also provided. In addition, content resources in other formats are also appreciated, for instance, the use of podcast, presentation tools, wiki, gamification and interactive content.

Learning activities are one of the important components in Malaysia MOOCs. These activities should allow the learners to interact actively. For each topic, a discussion forum needs to be prepared. In addition, sharable documents for both individual and group learning are recommended.

In terms of assessment, both formative and summative assessments are required. Meanwhile, the mode of assessment can either be in face-to-face or fully online. Several types of assessment are suggested, for instance, online assignment, portfolio, quizzes and forum participation.

To ensure quality, each university is required to appoint a quality assurance committee for each MOOC. The relevant rubric and checklist are required for this purpose. Moreover, quality assurance will also be carried out at the national quality agency, i.e., Malaysian Qualification Agency (MQA). Only the courses that have gone through MQA quality assurance can be considered for credit transfer.

In terms of copyright, any content or material in each MOOC has to adhere to the copyright guideline.

(c) Delivery
   The delivery of each MOOC requires the appropriate method, and it should include:
   I. the option to have fully online or blended learning;
   II. other methods such as flipped learning, problem/project/evidence based learning;
   III. collaboration among the learners;
   IV. community of learners;
   V. online forum;
   VI. assessment and grading;
   VII. certification; and
   VIII. student guideline.

(d) Credit Transfer
   There are two types of MOOCs, either Malaysia MOOC or other MOOCs (Future Learn, edX, etc.). Credit transfer into Malaysian higher education system has to follow the MOOC credit transfer guideline prepared by MQA.
Each university needs to establish its own credit transfer committee. The approval for credit transfer will depend on the Senate in each university.

2.2.2 Indonesia

The distance education system or MOOC in Indonesia is an educational system that has a broad reach -- spanning across space, time, and socio-economy. MOOC System opens access to education for anyone, anywhere, and anytime. This makes the MOOC system often regarded as a solution to various educational issues, especially concerning equity and democratization of education, and the expansion of access to quality education to all levels of society. Through the MOOC system, everyone can gain access to quality education without having to leave family, home, work, and not lose their career opportunities. In addition to expanding access, the MOOC system also enhances the equitable distribution of educational quality for everyone. The mass nature of the MOOC system in distributing quality education that is standardized through the use of ICT, learning outcomes standardization, teaching materials, learning process, learning aid, and learning evaluation, makes quality education available to various circles of space and time.

2.2.2.1 Terminology

In practice, MOOC System in Indonesia provides several terms used in the context of MOOC program implementation in higher education as follows:

(a) **Distance education** is education whose learners are separate from the learners and learners using various sources of learning through ICT and other media.

(b) **Learners** are members of the community who develop their potential through the learning process available on the path, ladder, and certain types of education and have been registered in the provision of certain educational programs or courses.

(c) **Distance education learning resources** are a variety of ICT-based materials/resources used in the learning process.

(d) **Learning assistance** is any form of support activities undertaken by distance education managers to assist in the smooth learning process of learners in the form of academic and administrative services, as well as personal, face-to-face or through ICT utilization.

(e) A **tutorial** is a form of academic learning assistance that can be implemented face-to-face or through the utilization of ICT.

(f) **Evaluation of learning outcomes of learners** is the assessment of the results of learning process of learners both face-to-face and ICT-based.

(g) **Practice** is the exercise of theoretical skills with direct supervision using facilities and infrastructure that meet minimum standards.

(h) **Practicum** is a structured task and relates to factual validation or interrelationship of facts, which support the full learning achievement by the curriculum requirements.

(i) **Distance learning resource unit (USBJJ)** is a support unit for the implementation of Distance education programs outside the head office, in the region, and / or within reach of universities (including PT partners, schools, training centers, industry, SME, local government and / or other parties).

(j) The **system of face-to-face higher education** is higher education which conducts learning process through direct meeting between educator and learner.

(k) **Electronic learning (e-learning)** is a learning process that utilizes electronic information packages for learning and education purposes, accessible to learners, anytime and anywhere based on ICT.

(l) **Blended learning** is a learning process that combines the use of e-learning and conventional face-to-face learning, and
(m) Distance education in the study program is conducted if the learning process in 50% or more courses in 1 (one) study program is held remotely by utilizing ICT

2.2.2.2 Implementation

MOOC systems in Indonesia can be implemented in various modes or ways of organizing:

- **Single mode**, where distance education is conducted in all learning processes in all courses and all educational programs. Currently, the single mode PJJ is mandated by the Government of Indonesia to the Open University, established in 1984 (Keppres No. 41/1984 on Establishment of Open Universities).

- **Dual mode**, when distance education is held both face-to-face and remotely at the same time. Thus, in the dual mode, a course conducts a face-to-face learning service for one or more groups of learners, while one or more groups of learners are served with distance learning.

In the implementation of the MOOC system in a Study Program in Higher Education, there are two types of dual mode education, namely:

- **The parallel of Dual Mode**, i.e. when a whole course is held in remote and face-to-face mode simultaneously. One or more groups of learners are served face-to-face, while one or more groups of other learners are served through distance education. The group of learners is served by distance education if $\geq 50\%$ of the courses are held remotely.

- **The combination of Dual Mode** is when the group of learners in a course gets remote learning service for a fraction ($\leq 50\%$) of the number of courses while the largest part of the number of classes is conducted face-to-face.

The implementation of a dual mode in the MOOC system in a study program should be based on the analysis of human resource development needs in the area of MOOC system coverage, and based on synergistic and harmonious cooperation among institutions/universities.

In Indonesia, there is another form of MOOC system, namely the consortium mode. The mode is performed if the MOOC program is held in the form of cooperation in the implementation of subjects or courses across the educational unit with the internal scope of universities as well as across local, national and / or international areas. In this mode of consortium, the provision of distance education programs is conducted jointly by several universities for the same course/course, resulting in credit recognition by several universities together, and enabling cross-college credit transfer.

The consortium is formed by several study programs and / or universities under an agreement to conduct a joint study program jointly. Each member of the consortium contributes to the integrity of the study program and its implementation comprehensively. The PJJ study program organized by all consortium members refers to the same curriculum, the same organizing standards, and the same evaluation standards agreed upon by the consortium members.

The implementation of the PJJ study program in the consortium must obtain a permit from the Directorate General of Higher Education for each study program. After getting a licensing permit, each PT organizer may form a consortium for the common interest.

The implementation of a distance learning program or MOOC is implemented following the national standards for education (NSE) which includes: content standards, process standards, competency standards, assessment standards, educator standards and
education personnel, equipment and infrastructure standards, management standards and financing standards.

Implementation of the MOOC program that complies with the NSE prioritizes the following:
(a) The use of various communication media, including printed, electronic, and other forms of communication media made possible by technological developments to replace face-to-face learning with ICT-based learning interaction, while still allowing limited face-to-face learning.
(b) Learning delivery system of learners with separate educators.
(c) The use of interactive learning methods based on self-directed, structured, and guided learning concepts using a variety of learning resources and with the support of learning aids and organized learning facilities and utilizing ICTs.
(d) Provision of ICT facilities as learning media and is the primary source of learning that is more dominant than educators.

The implementation of the MOOC system relies heavily on cooperation between MOOC organizing centers with various partners, including other universities that provide full face-to-face learning, institutions, agencies, industries or other parties sufficient to reach out to learners.

Cooperation with partners should be outlined in the form of formal inter-agency cooperation agreements (MOUs) between institutions for various components of the study program.

The MOUs including and not limited to the development and utilization of e-learning based courses, the sharing of shared human resources, the use of shared infrastructure, And the implementation of the joint study program.

2.2.2.3 Quality Assurance System

The principle of quality assurance in MOOC program has been developed by various accreditation bodies of universities at home and abroad. BAN-PT has published a draft guidance and form for the accreditation of undergraduate program of open and distance universities in 2010. SEAMOLEC published guidelines for quality assurance in open and distance learning for Southeast Asian countries in 2008.

To ensure the quality of the operation, MOOC Program must meet the following requirements:
(a) based on the analysis of human resource development needs before and during work (pre-service and in position), and based on synergetic cooperation among institutions;
(b) based on systemic planning activities related to the curriculum, teaching materials, learning process, instruments, and evaluation system;
(c) utilizing information and communication technology optimally to support academic and administrative activities;
(d) using effective, innovative and creative teaching delivery system;
(e) organizing an ICT-based interactive learning process by providing limited face-to-face opportunities;
(f) develop and nurture the level of independence and soft skills of learners; and
(g) providing quality support services, which include academic administration services, student learning assistance, learning resource units for management and student’s services, access and infrastructure) are USBJJ-shaped (remote learning resource units).
The quality assurance process of study program conducted with MOOC system is done internally through SPMI and externally through accreditation (BAN-PT or LAM) based on study program report through database of higher education (PDPT). The quality of study program is significantly related to the quality of face-to-face PS, including the quality of e-learning based courses.

2.2.3 Philippines

The open distance learning act (RA 10650) defines ‘distance education’ as a ‘mode of learning in which students and teachers are physically separated from each other’ (Sec. 2[a]). It defines ‘open learning’ as ‘a philosophy of learning that is based on flexibility of access for equity in education, an educational system accessible to every individual with minimal restrictions and emphasizing the flexibility of the system to eradicate problems caused by barriers like age, geographical location, time constraints and economic situation’ (Sec. 2[f]). Combining these two concepts, ‘open distance learning’ (ODL) is a ‘system which combines the methodology of distance education with the concepts of open learning and flexible learning’ (Sec. 2[e]).

republic act 10650 institutionalizes distance learning in the Philippines. The law stipulates that all courses or subjects offered in the ODL mode should be in accordance with the following guiding principles, requirements, modes of delivery, and support systems:

2.2.3.1 Guiding principles for open distance learning (ODL)

All courses or subjects offered in the ODL mode should adhere to the following principles, as set forth in section 6 of the open distance learning act:

(a) Learner centeredness – ODL programs shall focus on the needs of the learner and the goal of facilitating independent learning.
(b) Quality and relevant programs – ODL programs shall be equivalent in challenges and depth to conventional classroom or traditional programs in nonconventional delivery.
(c) Transparency to guide informed choice – ODL implementers shall make information about their programs... available to accrediting bodies, academic peers, regulators and students. Updated information shall be made accessible through... the Internet.
(d) Peer review – A review by experts in ODL to determine the acceptability of the course or subject shall be institutionalized following the criteria set by the CHED and/or the TESDA, as applicable.
(e) Public responsibility and accountability – Implementers shall heed the public impact of ODL programs and shall always exercise due diligence in avoiding harm to program stakeholders, especially students.
(f) Quality and continuous improvement – An HEI [higher education institution] or post-secondary school shall embed in its program framework the proactive needs assessment of students and stakeholders in terms of ODL program planning, implementation and evaluation.

2.2.3.2 Requirements of curricular offerings using the ODL mode

Curricular offerings using the ODL mode should clearly articulate learning outcomes (in terms of competencies, skills, and behavioral attributes), with ‘a defined set of subjects and/or examinations, and/or special projects and activities and activities, the completion of which shall be required for graduation from the higher education degree or technical-vocation program, and which shall be equivalent to those under the conventional mode of instruction’ (Sec. 8, RA 10650).

Additional requirements are set forth in Section 8 of the open distance learning act:

(a) The place, pace, and mode of study of the student shall be at the option and convenience of the student within the time frame... prescribed by the learning institution....;
(b) The concerned HEIs or post-secondary schools shall formulate and implement a mechanism to monitor the academic progress of the students;
(c) The curricular offerings using ODL shall conform to respective policies, standards, and guidelines for ODL of the CHED and/or the TESDA;
(d) Practicum or on-the-job trainings shall be observed for courses that require the same;
(e) Completion of all the requirements for the academic program shall be evidenced by the award of the appropriate academic degree or certificate; and
(f) The existing requirement of the Professional Regulation Commission or other relevant government agencies of passing a licensure examination for programs offered in the conventional classroom or traditional mode, or technical-vocational programs shall also apply to graduates of ODL programs.

2.2.3.3 Modes of delivery

According to Section 9 of the open distance learning act, ODL programs can be conducted using following information and communications technology and other approaches, including the following: ‘(a) Print (textbooks, study guides, workbooks, course syllabi, correspondence feedback and other print formats); (b) Audio-Visual (radio, audio cassettes, slides, film, videotapes, television, telephone, fax, audio-conferencing and video-conferencing; (c) Electronic/Computer Technology and Virtual Classrooms (Internet, CD-ROM, electronic mail, e-bulletin boards, podcasts, m-learning, i-lectures, e-learning or online learning management systems; and (d) Face-to-Face Sessions (conducted in learning and study centers).’

2.2.3.4 Support systems

Sections 10 to 15 of republic act 10650 establishes the mechanisms by which ODL programs would be supported by government agencies (CHED, TESDA), the HEIs and post-secondary schools, the UP Open University, and media and telecommunications networks.

2.2.3.4.1 Roles of CHED and TESDA

Section 10 of the open distance learning act mandates the Commission on Higher Education (CHED) and the Technical Education and Skills Development Authority (TESDA) to provide support to higher education institutions (HEIs) and post-secondary schools ‘in developing and providing high quality programs and offerings in ODL education.’ This assistance includes the following: ‘(a) Training of qualified teachers, providers, and other professionals; (b) Relevant curriculum, courseware, and program development; (c)
Development of appropriate learning materials; (d) Cyber infrastructure planning, resource sourcing, and implementation; (e) School operations and management planning and development…; and (f) Formal linkages and networking with institutions which may serve as learning or testing centers.’

In addition to program development, CHED and TESDA shall have oversight functions. As stated in Section 14, they shall: ‘(a) Formulate, promulgate, disseminate and implement the necessary policies, standards, guidelines, rules and regulations for the effective implementation of ODL in the country; (b) Develop strategies to improve the quality of ODL programs and implement a system of quality control for ODL in the country; (c) Monitor and evaluate existing ODL programs and effect the continuation or closure of programs…; (d) Review and approve or disapprove proposals from HEIs and post-secondary schools for the implementation of new ODL programs; and (e) Recommend to the Department of Budget and Management (DBM) the budget for ODL programs of qualified HEIs and post-secondary schools….’

2.2.3.4.2 Roles of HEIs and post-secondary schools

According to Section 11 of the open distance learning act, any student enrolled in ODL programs under this Act shall have ‘access to all privileges, opportunities and entitlements that a student… under the conventional system of instruction may have access to, including the availment of scholarships, grants-in-aid, and loans from the government or government-administered funding sources.’ Specifically, higher education institutions and post-secondary schools engaged in ODL programs should: ‘(a) Provide clear admission policies and procedures…; (b) Maintain faculty-student dialogue and interactivity through virtual classrooms linked electronically or through established learning centers, or both; (c) Show evidence of regular monitoring of learners’ progress; and (d) Provide a wide range of relevant, updated and accessible learning resources…..’

2.2.3.4.3 Roles of the University of the Philippines Open University (UPOU)

The University of the Philippines Open University has a critical role in assisting and providing expertise to CHED and TESDA in the promotion of ODL in the country. Among the roles of the UPOU are the following, pursuant to Section 12 of republic act 10650:

(a) Provide leadership in the development of ODL in the country;
(b) Promote best practices in ODL in the Philippines;
(c) Share knowledge through informed and innovative research and other development activities related to ODL through its exemplar policies, programs, materials, learning management systems, guidelines and offerings:
(d) Provide technical assistance to the CHED and the TESDA in matters relating to ODL;
(e) Design model curricular programs which shall serve as prototype programs for HEIs and post-secondary schools;
(f) Develop and promote appropriate information and communications technology to facilitate ODL programs in the country;
(g) Design quality learning materials and objects, both in print and multimedia formats…;
(h) Make instructional materials for ODL programs accessible to the public;
(i) Assist other interested educational institutions in developing their own ODL programs, courses, and materials…;
(j) Design and implement a continuing program to develop high level expertise in the
fields of ODL in the Philippines…; and
(k) Help capacitate ODL teachers and practitioners through capacity building and professionalization programs.

2.2.3.4.4 Roles of Broadcast Media and Telecommunications Networks

Section 15 of republic act 10650 encourages broadcast media and telecommunications networks to provide assistance to HEIs and post-secondary schools offering ODL programs—specifically through ‘the transmission of learning materials for formal and non-formal courses to learners not within the Philippines, but also outside the country.’

2.2.3.5 Other provisions

Section 18 of the open distance learning act offers tax exemptions to individuals and organizations which made a ‘donation, contribution, bequest and grant, in cash, materials, and services… for the promotion of ODL.’

Additionally, Section 19 mandates the CHED, the TESDA, and the UPOU to formulate the rules and regulations to implement this Act within a period of ninety (90) days from its effectivity. These Implementing Rules and Regulations (IRRs) should be formulated in consultation with relevant stakeholders in higher degree and post-secondary education.

Finally, Section 20 states that the ‘amount needed for the initial implementation of this Act shall be charged against the current year’s appropriations of the CHED, the TESDA, and the state universities and colleges which have existing ODL programs. Thereafter, such sums as may be necessary for the continued implementation of this Act shall be included in the annual General Appropriations Act.’

2.3 Current Initiatives

2.3.1 Malaysia

The Malaysian higher education institutions started its first use of MOOC in 2013. Taylor’s University - a private university – became the first HEI to offer MOOC on entrepreneurship using the OpenLearning MOOC platform. Then, in October 2014, the Ministry of Higher Education has declared Malaysia as the first country in the world to implement MOOCs for all public universities, and it has launched a nation-wide initiative to implement MOOC for those universities (Rajaendram, 2014). Four first year undergraduate common courses offered by four public universities were involved:

a) Islamic and Asian civilizations (Universiti Putra Malaysia)

b) Ethnic relations (Universiti Kebangsaan Malaysia)

c) Entrepreneurship (Universiti Teknologi MARA), and

d) ICT competence (Universiti Malaysia Sarawak)

These courses bring together all first-year students from 20 Malaysian universities on a single platform.

As stated in the national e-learning policy (DePAN) version 2, in the online pedagogy domain, each university is required to develop at least three MOOC courses. The ministry has also targeted 15 MOOC courses to be developed and offered by each of those 20 public universities in Malaysia during the second phase (2016-2020).
These are three categories of MOOC courses identified: (a) university common courses, (b) niche areas, and (c) lifelong learning.

i. General course
The general courses are common courses offered in all 20 public universities. For example, Islamic & Asian Civilization Studies, Entrepreneurship, Ethnic Integration & Relations in Malaysia and ICT Competencies.

ii. Niche course
Niche courses are referring to each university’s niche area as listed by the Higher Education Department. For instance, for Universiti Sains Malaysia, the niche areas identified are environmental sciences, engineering & technology and life & health sciences. For University of Malaya, the niche areas are life sciences and medicine, engineering & physical sciences and Islamic & social sciences. Therefore, each of these universities are required to develop their MOOC courses on the niche areas identified.

iii. Lifelong learning course
The lifelong MOOC courses are meant for professional development and self-skilled improvement/enhancement. Examples of these courses are time management, Arabic learning, teaching and learning in digital age, etc. Academicians from all universities are strongly encouraged to design and develop MOOC courses for lifelong learning purposes.

In this Malaysia MOOC initiative, the courses selected to be developed should come from any courses in the programs offered by these universities. Other relevant courses can also be considered by each university. However, these courses can be categorized as Malaysia MOOCs if it meets the criteria and the approval from the Working Committee of the Malaysia MOOC.

As of April 2017, there are 200 courses offered through the Malaysia MOOC initiative and are available in the OpenLearning platform. As stated previously, this Malaysia MOOC initiative involves all 20 public universities in the country. For the first phase since the launching of this initiative in 2014, each public university is required to offer at least three MOOC courses. The details of the MOOC courses are listed in Table 2.
Table 2: Malaysian public universities’ MOOCs

<table>
<thead>
<tr>
<th>No</th>
<th>University</th>
<th>No of courses</th>
<th>No. of students*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Universiti Kebangsaan Malaysia</td>
<td>52</td>
<td>97,503</td>
</tr>
<tr>
<td>2</td>
<td>Universiti Teknologi MARA</td>
<td>17</td>
<td>30,386</td>
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<tr>
<td>3</td>
<td>Universiti Malaya</td>
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</tr>
<tr>
<td>4</td>
<td>Universiti Sains Malaysia</td>
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</tr>
<tr>
<td>5</td>
<td>Universiti Putra Malaysia</td>
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<td>77,592</td>
</tr>
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<td>6</td>
<td>Universiti Malaysia Sarawak</td>
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<td>Universiti Malaysia Sabah</td>
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<td>Universiti Malaysia Perlis</td>
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<td>Universiti Tun Hussein Onn Malaysia</td>
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<td>3</td>
<td>188</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>200</td>
<td>256,434</td>
</tr>
</tbody>
</table>

*number of students as of 20 April 2017

In addition to these initiatives by the 20 Malaysian public universities, several private universities have also developed and implemented their MOOC programs using the OpenLearning platform. Table 3 highlights the details of the initiatives by these universities.

Table 3: Malaysian private universities’ MOOCs

<table>
<thead>
<tr>
<th>No</th>
<th>University</th>
<th>No of courses</th>
<th>No. of students*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Taylor’s University</td>
<td>30</td>
<td>45,486</td>
</tr>
<tr>
<td>2</td>
<td>Open University Malaysia</td>
<td>8</td>
<td>1,579</td>
</tr>
<tr>
<td></td>
<td>(OpenLearning)</td>
<td>21</td>
<td>n.a.</td>
</tr>
<tr>
<td></td>
<td>(iTunesU)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>International Centre for Education in Islamic Finance</td>
<td>5</td>
<td>1,357</td>
</tr>
<tr>
<td>4</td>
<td>University Tun Abd Razak</td>
<td>21</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>64</td>
<td>48,422</td>
</tr>
</tbody>
</table>

*number of students as of 20 April 2017
Meanwhile, few other private universities in Malaysia are using other MOOC platforms. Examples of these private universities are: Monash University (FutureLearn), Curtin University of Technology (edX), and University of Nottingham (FutureLearn). However, as these private universities are the branch campuses in Malaysia, they are using the MOOC platform of the main campus located in the country of origin.

2.3.2 Indonesia

The Government of Indonesia through the Ministry of Research and Technology and Higher Education following the strategic plan that has been determined since 2012, has developed an MOOC programs. Stages of the development of distance learning in Indonesia is visualized in Figure 2.

Figure 2: The timeline of development stage of distance learning in Indonesia (Pannen, 2016)

The development stage timeline of distance learning in Indonesia is as follows:

1. **1950s**, a distant class education program was developed using a correspondence course system for teachers;
2. in **1984**, the Government of Indonesia established the Open University, which continues today. At that time, the education system used printed modules sent to students throughout Indonesia. Currently, some modules have been prepared into e-learning module;
3. in **2007**, Ministry of National Education developed HYLITE program. The HYLITE program is an in-service teacher training program especially for elementary school teachers in Indonesia which is called PGSD program, to improve their qualifications from Diploma-2 to Strata-1 level, conducted through ICT-based learning mode. The HYLITE program utilizes distance learning mode and is offered by the consortium of 23 universities. To overcome the problem of restricted bandwidth and high-cost Internet access, Ministry of National Education (MONE) has developed cooperation with Indonesian Telecommunication Company (Telkom) to offer JARDIKNAS (National ICT Backbone) programs for school communities. In fact, ICT has been utilized in schools even though relatively small in numbers. More and more Internet kiosks, not only at the post office in capital cities in the provinces but also in the districts, are available. The community has also participated in the establishment of Internet kiosk. The number of schools using the Internet is also increasing;
4. in 2014, 7in1 Project funded by Islamic Development Bank (IsDB), Saudi Fund for Development (SFD), and Government of Indonesia (GOI) was initiated. This project aims to support the GOI strategy for the development of higher education and to improve the access to and quality of HEI through renovating, expanding, equipping of existing and new facilities and enhancing the curriculum and skills of the academic staffs of seven (7) universities. The seven universities are State University of Surabaya (UNESA), State University of Yogyakarta (UNY), Sam Ratulangi University (UNSRAT), State University of Gorontalo (UNG), Tanjungpura University (UNTAN), and Lambung Mangkurat University (UNLAM);

5. in 2014, Universitas Terbuka (UT) of Indonesia or the Open University of Indonesia launched the country's first few MOOCs (http://moocs.ut.ac.id/). The five MOOCs launched by UT includes courses on: Public Speaking, Marketing Management, Distance Education, English for Children, and Multi Food Preparation;

6. in 2016, PT Telkom Indonesia (Persero) Tbk in cooperation with the Ministry of Research Technology and Higher Education provides the Indonesian Research and Education Network (IdREN) facility. IdREN is a closed network (national closed group users) for research sharing among universities with 3S initiatives; single network, sharing and collaboration, and sustainable platform. IdREN as a research network, bridges educational and research institutions with other industries. The topology of IdREN network is multi-point to multi-point and then it is still a compliment that is 200 Mbps for five campus hubs, and 100 Mbps for non-hub campus. In the initial phase, IdREN bandwidth for 75 national college campuses is 10 Gbps;

7. in 2017, DGHE has launched the Indonesia Open and Integrated Online Learning Program (PDITT), which is now renamed Indonesia's Online Learning System (SPADA) http://kuliahdaring.dikti.go.id. This SPADA program has been running for three years since 2014. This program aims to improve the equitable access to quality learning in universities. With its online learning system, SPADA Indonesia provides opportunities for students from one university to attend qualified courses from other universities and their learning outcomes can be recognized by universities where the student is enrolled.

2.3.3 Philippines

This section focuses on the initiatives in the development and promotion of distance learning and MOOCs of three universities and one government agency in the Philippines, the latter being the Department of Interior and Local Government (DILG).

To our knowledge, there are three universities in the Philippines that offer open distance and transnational education: the Ifugao State University (IFSU), the Polytechnic University of the Philippines (PUP), and the University of the Philippines (UP).

2.3.3.1 The College of Open Distance and Transnational Education (CODETE) of the Ifugao State University (IFSU)

In 2016, the Ifugao State University (IFSU), through a resolution approved by its Board of Trustees, established its College of Open Distance and Transnational Education (ODETE). Their open distance education (ODE) and transnational education (TE) programs employ either a blended learning approach, where face-to-face learning sessions are complemented by independent study facilitated by information technology infrastructure; or a purely online approach, where curriculum content is delivered to students via the Internet. With the establishment of CODETE, IFSU aims to welcome more international students to their programs; strengthen their existing ‘study abroad programs’ through increased student
participation; integrate global perspectives in their ODE and TE programs; gain more access to international research projects; and boost IFSU’s reputation abroad.

IFSU has entered into cooperative agreements with the EDS Business School, Malaysia (2011), the Muhammadiyah University, Indonesia (2012; renewed in 2015), and the St. Roberts Training and Management Center or SRTMC (2012). These partnerships have been critical in boosting the number of enrollees in and graduates of IFSU’s ODE and TE programs—from three enrollees in school year (SY) 2011-12, to over 2,000 enrollees in SY 2015-16; and from three graduates for SY 2011-12, to 283 graduates for SY 2014-15.17

2.3.3.2 The PUP Open University System Institute of Distance Education / Transnational Education (PUP OUS-IODET)

The Open University of the Polytechnic University of the Philippines envisions itself to be ‘the premier Center for excellence for Open and Distance Learning’, with a mission and commitment ‘to provide quality education through the open and distance learning system, which is responsive to the needs and challenges of a technologically advanced and globally linked society.’18 It offers relevant degree and non-degree graduate and undergraduate programs using innovative teaching-learning systems, including e-learning.19 Otherwise known as ‘the People’s University’ [Pamantasang Bayan], the PUP Open University, by ‘offering] an effective and efficient alternative delivery of instruction and training’, seeks to ‘provide an affordable and portable education for all, and thus help bring about a better quality of life for all Filipinos.’ Its primary clientele is ‘the economically disadvantaged students, out-of-school youths, teachers, administrators, managers, professionals and ordinary employees.’20

According to the website of the PUP Open University, although broadcast-based distance learning systems were already in place in the 1960s, the PUP was the first in the Philippines to implement the concept of an open university—that is, ‘a university within a university offering both degree and non-degree programs in the country duly certified by corresponding certificates of diplomas upon satisfactory compliance of course requirements.’21

The PUP Open University was established in the 1970s and initially offered non-degree (technical-vocational) courses. The foundations of the open university were built by then Philippine College of Commerce (PUP’s former name) President Nemesio E. Prudente who ‘saw the need to provide access to educational opportunities to millions of Filipinos who wanted to study but were constrained by time, distance and other circumstances.’22 However, when martial law was declared by Philippine President Ferdinand Marcos in 1972, the initial implementation ground to a halt. When Dr. Prudente was reinstated as PUP

19 Ibid.
21 Ibid.
22 Ibid.
president in 1986, he revived the concept of the Open University System until it was formally launched in March 1990.\textsuperscript{23}

The PUP Open University System Institute of Open and Distance Education/Transnational Education (PUP OUS-IODETP) employs a blended learning approach. Although a significant proportion of the teaching is conducted by someone ‘removed in space and/or time from the learner through specially designed materials and methods’, students still have a number of contact sessions where formal, face-to-face lectures, discussions, and tests are conducted on campus at designated PUP OUS Learning Centers.\textsuperscript{24}

The PUP OUS has a considerable number of enrollees and graduates. Based on the Polytechnic University of the Philippines Annual Report 2014, of the 8 564 graduates of the PUP in school year 2013-14, the Open University produced 235, of whom two obtained a PhD, and three received either an MA or an MS. Moreover, in SY 2013-14, the PUP Open University had 897 learners enrolled in its undergraduate programs. There were more than twice many individuals—at 2 010 students—enrolled in the different master’s degree programs of the Open University in that school year.\textsuperscript{25}

The PUP Open University System is an accredited member of the International Council on Distance Education (ICDE) and the Asian Association for Open Universities (AAOU). Since 2003, it has been recognized by the UNESCO Asia Pacific Region for Higher Education Knowledge Based on Open and Distance Learning in Bangkok, Thailand.\textsuperscript{26}

2.3.3.3 The MOOCs of University of the Philippines Open University (UPOU)

According to the Chancellor of the UP Open University, Grace Alfonso Javier, the UP Open University was established in 1995 as the fifth constituent university of the University of the Philippines System. Its creation was a response to the demand for quality higher education, especially in areas which do not have a UP campus.\textsuperscript{27}

As envisioned, UPOU ‘shall be at the forefront of the knowledge society as a leading institution of open learning and distance education.’ Its mission is ‘to provide wider access to quality higher education’ through the fulfillment of the following goals: (1) ‘To provide opportunities for alternative access to quality higher education by offering baccalaureate and post-baccalaureate degree programs and non-formal courses by distance education; (2) To develop a system of continuing education for sustaining professional growth and improving technical skills especially for those who cannot leave their jobs or homes for full-time studies; and (3) To contribute towards upgrading the quality of residential instruction in the university and the educational system of the country, in general, by developing, testing and utilizing

\begin{itemize}
  \item 23 Ibid.
\end{itemize}
innovative instructional materials and technology, and sharing these with other colleges and universities through cooperative programs.\(^{28}\)

In the Philippines, the UP Open University offered the first massive open online course (MOOC) which it developed in partnership with Smart Communication, Inc. Titled ‘Introduction to mobile application development using Android platform’, the course drew 390 participants, of whom \(91\%\) (354) were based in the Philippines, and \(9\%\) (36) were based outside of the Philippines.\(^{29}\) UPOU launched this MOOC through the Faculty of Information and Communication Studies (FICS), as part of its then online platform for MOOCs, Aral (Lesson). The course, which began on 1 July 2013, aimed ‘to equip students with necessary skills and know-how to deploy Android application for android phones and tablets.’\(^{30}\)

According to the current and official platform of UP Open University <model.upou.edu.ph> called massive open distance e-learning\(^{31}\) (MODeL), UPOU offers MOOCs, in English and in Tagalog, in the following categories: ASEAN studies,\(^{32}\) child rights promotion and protection, distance e-learning readiness, e-Filipiniana,\(^{33}\) eService management, interlocal cooperation,\(^{34}\) open distance e-learning (ODEL),\(^{35}\) and technology for teaching and learning.\(^{36}\) Prospective learners can take these online courses for free, upon the creation of a MODeL account, and the completion of a DE (distance education) readiness module and taking a quiz on it.

2.3.3.4 The Newly Elected Officials (NEO) Program of the DILG - Local Government Academy (LGA)

Although it has been the open universities of some universities that have been at the forefront of developing online courses in the Philippines since the 1990s, government agencies have also been offering web-based seminars (or ‘webinars’) to capacitate elected government officials. This section discusses the webinar series and the webinar executive sessions of the newly elected officials (NEO) program of the Department of Interior and Local Government, as implemented by its Local Government Academy.


\(^{32}\) An example of a course in this category is ‘Art in the ASEAN Region’.

\(^{33}\) An example of a course in this category is ‘Understanding the Child Better’.

\(^{34}\) Examples of courses in this category are ‘Critical Approaches to Philippine Art and Culture’, ‘Philippine Arts as Cultural Text’, and ‘Understanding Philippine Art and Culture’.

\(^{35}\) Examples of courses in this category are ‘Introduction to Interlocal Cooperation’, ‘Financial Ingredients of Interlocal Cooperation’, ‘Institutional Ingredients of Interlocal Cooperation’, and ‘Legal Ingredients of Interlocal Cooperation’.

\(^{36}\) Examples of courses in this category are ‘ODEL 101: Introduction to ODeL’, and ‘Quality Assurance in ODeL’.

\(^{37}\) Examples of courses in this category are ‘Teaching, Learning + Technology 2’ and ‘Technology for Teaching 3’.

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The Department of Interior and Local Government (DILG) is the executive department of the Philippines mandated with strengthening the capability of local government units (LGUs) in governance and administration, in addition to promoting peace and order and ensuring public safety in communities. It has a Local Government Academy (LGA) that is responsible for human resource development and training of local government officials and the department personnel.

As the training arm of the DILG, the Local Government Academy offers the newly elected officials (NEO) program, which aims to build strategic leaders out of newly-elected officials who would lead their local governments in becoming competitive, efficient and responsive institutions for development. The local government officials, who come from various provinces, cities, and municipalities in the Philippines, attend the NEO program to be oriented about the various components of local governance.

On September 5, 2013, the Local Government Academy introduced a new component to their existing NEO program: webinars, or web-based seminars. The webinar component of the NEO program was created in partnership with The Asia Foundation/Coalition for Change, the Zuellig Family Foundation, LGSP-LED, International Finance Corporation-World Bank, among others. The DILG had to shell out about Php 1 million for the project.

According to LGA Executive Director Marivel Sacendoncillo, the Academy introduced an online component to improve retention—which she described as ‘low’—among officials who attended the conventional face-to-face seminars. By adding an online component, the Local Government Academy hopes to enhance learning by making web-based seminars and online lectures accessible to the officials any time, so that they can study these at their own pace. Moreover, with the switch to webinars, the NEO program has become more interactive, offering as it does local officials the opportunity to participate in discussion boards where they can share their ideas about the modules and also about the best practices in their respective LGUs. Another merit of launching the NEO program online, according to Director Sacendoncillo, is that newly-elected officials can already begin to learn about local governance even before their terms begin.

The current (2016) NEO program has five major components: COMPONENT 1: Ensuring Smooth Transition; COMPONENT 2: Jumpstarting Local Governance; COMPONENT 3: Looking Forward to Better Governance; COMPONENT 4: Sharpening the Saw; and COMPONENT 5: Enhancing LGU Performance.

In delivering the NEO program, the LGA utilizes a blended approach which includes ‘face-to-face or residential mode, webinar, on-site mentoring, workshops, dialogues,
benchmarking activities’, among others. Figure 3 below shows how the various learning approaches are used in the five components of the Program.

Figure 3: The 2016 Newly Elected Officials (NEO) Program of the DILG as Implemented by the Local Government Academy (LGA)

As seen in Figure 3 above, the webinar series is integral to Component 2: Jumpstarting Local Governance, whereas the webinar executive sessions are included in Component 3: Looking forward to better governance.

Component 2: Jumpstarting local governance provides a foundation that will ‘help local officials to understand and think critically about the organizational, political, and constitutional environment of public service especially that in local governments.’ It is divided into two main parts: (1) a basic orientation on the ‘First 100 Days in Office’; and (2) ‘Local Government Units (LGU) Guide to Action’. One of the topics covered under LGU Guide to Action is ‘governance challenges 101’, which is delivered through a webinar series featuring Foundational Modules and elective modules (see Figure 3). The foundational

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44 Ibid.
46 Ibid.
modules are recommended modules to help officials gain knowledge and skills on local governance. The elective modules are optional modules which a newly-elected official can take, depending on his or her interests and needs.

The Department of Interior and Local Government offers incentives for local government officials who complete webinar series modules. According to DILG memorandum circular No. 2016-71, a graduation will be organized by the Local Government Academy at which certificates will be awarded. A certificate of participation will be given to local officials who had completed the requirements of the foundational modules only, whereas a Certificate of Completion will be awarded to officials who had completed all the requirements of the foundational modules and at least two elective modules.

Webinar executive sessions are included in component 3: Looking forward to better governance. This component exposes local officials to the challenges that are confronted by local communities, such as issues related to governance, climate change, competitiveness, and social protection. An important part of component 3 is the webinar executive sessions on specific governance issues, where renowned technical experts and governance practitioners are tapped to lecture on certain topics. A web-conferencing service allows participants in different geographical locations to listen to and participate in the Executive Sessions from which they can learn about the latest trends in governance from the experts themselves.

2.4 Adoption status

2.4.1 Malaysia

The Ministry of Higher Education, through the initiative of MEIPTA - has carried out a nationwide study (Jailil, Ismail, Bakar and K. A. Nasir, 2016) to evaluate the effectiveness of four pilot Malaysia MOOCs implemented in 2014/2015 academic year. This study involved a total of 4,449 first year students, 164 lecturers and four MOOC administrators from all 20 public universities. A mixed method approach involving both quantitative and qualitative data were used. For quantitative data, different sets of questionnaires were used for students and lecturers, while for qualitative data, interviews with the MOOC administrators/developers were administered.

Some of the major findings were:

I. On average, the students access MOOC once a week, mostly using Wi-Fi connections provided in their hostels. MOOCs were found to support their learning. In addition, there is a sign of positive acceptance of MOOCs among the students.


50 Ibid.

51 Ibid.
II. The lecturers are competent in the types of activities embedded in the MOOC environment, such as e-content development; file sharing; initiate online quizzes, online forum, social media communication, and interactive presentation activity. However, they are least competent in the video production activity.

III. The students evaluated the infrastructure and infrastructure provided for MOOC, accessibility of MOOC, Internet speed, video streaming and downloadable video as moderate. Although the lecturers’ evaluation on those aspects were found to be considerably high, they are somewhat sceptical in using MOOC for teaching and learning. This is because MOOC is something relatively new to them.

IV. Both the students and lecturers agree on the suitability of curriculum, content, learning design/pedagogy and assessment used in MOOC delivery. Both groups also agree on the ability of MOOC in enhancing the quality of teaching and learning. However, the findings on enculturation of MOOC at public universities were the lowest, is this might be because this initiative is very new to them.

V. The findings from the MOOC administrators and developers reveal that they use different approaches in planning, developing and managing the pilot MOOC.

In conclusion, the findings from this evaluation study reveal that there is a positive acceptance of MOOCs among university students, as it helps them to support their learning process. The lecturers are also competent with the activities in this environment – probably as they are familiar with the use of learning management system currently being used in their institutions. However, as MOOC is relatively new, they are somewhat sceptical in using with MOOC as part of their teaching and learning process. In relation to that, the enculturation of MOOC can still be further improved. Also, among the institutions, different approaches were used in developing and managing MOOC initiatives.

Nevertheless, the above-mentioned study only involved university students as the MOOC participants. Although MOOC is open to everyone, there is no study – based on literature review – that attempts to investigate the participation and impact of MOOC among non-university students’ participants. Similar studies on courses related to life-long learning in Malaysia among the non-university students and the public in general are yet to be found.

2.4.2 Indonesia

The distance education system held by the Indonesia Open University (UT) became an integral part of the MOOC development system in Indonesia. Thus, the general public understanding about MOOC model is the model that is used by UT. This suggests that Indonesian people are already familiar with the distance education model. The adoption status can be summarized as following:

- Government
  DGHE has implemented the regulation on the implementation of distance learning and e-learning in higher education as expressed in Ministerial Act No. 109 of 2013. In addition, DGHE provides grants for the creation of online learning materials every year since 2012. DGHE is actively promoting nation-wide MOOC, called SPADA, to HEI to participate. Currently there 26 Open Learning materials and 102 Online Courses.

- Social Influences and Expectancy
  Community is already aware with massive learning program based on what UT has been executed since 1994. Therefore, the expectation regarding MOOC is high, because they can upgrade their degree/certified competencies without losing their
job or affect their career. This has been expressed in the implementation of HYLITE Program for Teachers since 2007.

- Higher Education Institution
  The participation of HEIs in national MOOC is still low. Lack of sufficient infrastructure in remote areas (targeted areas) and also incompatible internal policies with DL programs are among the problems.

2.4.3 Philippines

What are some of the trends and factors (both enabling and constraining) related to the development and implementation of open and distance learning (ODL) and MOOCs in the Philippines?

2.4.3.1 From Distance Education (DE), to Open and Distance Learning (ODL), to Open and Distance e-learning (ODeL), to Massive Open Online Courses (MOOCs)

**Distance education (DE),** a mode of learning where students/learners and teachers are geographically separated from each other, has been promoted by Philippine universities for over 50 years now. In the 1960s, for example, the University of the Philippines Los Baños (UPLB) established a university radio station—DZLB, also known as Radyo DZLB or Ang Tinig ng Kaunlaran [The Voice of Progress] — which first went on air on 3 August 1964; as such, is the ‘oldest existing rural educational noncommercial broadcasting entity in the Philippines.’ Over the years, DZLB has broadcast lessons and news on agriculture and rural development for rural audiences. It has conducted many ‘schools on-the-air’ and has graduated thousands of students.  

It was in 1990 and 1995, respectively, when the Polytechnic University of the Philippines (PUP) and the University of the Philippines founded their open universities; other Philippine universities and colleges have likewise established open universities within their universities. Open universities, as proponents of **open and distance learning (ODL),** offer degree and non-degree courses to distance learners using flexible delivery systems that are responsive to their situation and needs and of the society to which they belong, thereby eradicating barriers caused by poverty or financial limitations, geographical location, physical disabilities, age, time constraints, among others. The ‘openness’ of higher education institutions and post-secondary schools offering distance education can be manifested in the following ways: openness in admission policies, openness in giving credits and degrees, openness in delivery modes, openness in cost and affordability, openness in choosing one’s educational track (open curriculum), and openness in course design and evaluation.  

The term **open and distance e-learning (ODeL)** was coined by Grace Javier Alfonso, Chancellor of the University of the Philippines Open University, to capture how the UPOU has developed and promoted **openness, distance education, and online learning.** Whereas the feature of ‘access and equity’ is linked to the domain of **open learning,** and while the

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54 Ibid.
features of ‘learner-centeredness’, ‘flexibility’, and ‘active learning’ are associated with all three domains (i.e., openness, distance education, and online learning), the features of ‘ubiquity’, ‘interactivity’, and ‘connectivity’, however, are the particular contributions of online or e-learning. Globalization and advancements in ICT have presented vast opportunities to educational environments for online or e-learning to occur.

**Massive open online courses (MOOCs)** are online courses that are accessible to large numbers of people. Offered in many cases for free, MOOCs make use of open educational resources (OERs), which are also available for free, owing to free ICT bringing down the cost of producing learning sources. The Organization for Economic Co-operation and Development (OECD) defines open educational resources as ‘digitised materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research.’ MOOCs offer a full/course experience online, including assignments and online assessment (e.g., quizzes, a final exam upon course completion). In addition to OERs, assignments, and online assessment, other e-learning technologies used in MOOCs include: a delivery platform or the virtual learning environment; video lectures; and forums, blogs, and social media platforms such as Facebook and Twitter, among others.

Although the first MOOC appears to have been offered in 2008 (when 2 200 people then signed up for an online open course (OOC) on connective knowledge offered by Siemens and Downes), it was in 2012 when companies (e.g., Coursera, edX, Udacity) and universities (e.g., University of Illinois, Harvard and MIT, the University of California at Berkeley) launched MOOCs, prompting a writer of *The New York Times* to dub 2012 as ‘The Year of the MOOC.’ The UP Open University offered the first MOOC in the Philippines in July 2013, in partnership with Smart Communication, Inc. That first MOOC was followed by offerings of various MOOCs, which can be taken online for free upon enrollment at <model.upou.edu.ph>, the website of massive open distance e-learning (MODEL), the official platform of UPOU.

On the part of the **Philippine government**, it has been promoting alternative delivery modes (ADMIs) to make ‘quality education at all levels… accessible to all’, as mandated by the 1987 Philippine constitution (Art. XIV, Sec. 2), the ‘education act of 1982’ (republic act [RA] 232), and the ‘enhanced basic education act of 2013’ (RA 10533). Moreover, Commission on Higher Education memorandum orders (CMOs) have enjoined higher education institutions (HEIs) to expand their educational services through distance education or DE (CMO No. 27, series of 2005) and transnational education or TNE (CMO No. 02, series of 2008; CMO No. 02, series of 2015). Another impetus ‘to expand and further democratize access to quality tertiary education through the promotion and application of open learning and the

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55 Ibid.
57 Philippine Institute for Development Studies (PIDS) and Commission on Higher Education (CHED), *Massive Open Online Courses: A Primer for Philippine State Universities and Colleges*, 13-14.
uses of distance education has been provided by republic act No. 10650, or the ‘open distance learning act’, signed into law in 2014. A developing country, the Philippines does make explicit the imperative of accessibility and affordability of quality education in its national policies on education. However, globalization and the continuing developments in ICT have also been driving forces in the promotion of open and distance learning and of MOOCs in the country.

2.4.3.2 Advantages of MOOCs

MOOCs offer many advantages, such as ‘increased options for accessibility, increased potential for student engagement, and expanded lifelong learning opportunities.’ In developing countries such as the Philippines, MOOCs can help address social problems, as when a MOOC titled ‘Designing resilient schools’ was created by Coursera, a German online learning program, to teach Filipinos adversely affected by Typhoon Haiyan in 2013 how to build schools that can also serve as shelters and community centers. Moreover, MOOCs can aid poverty alleviation and national competitiveness because they provide opportunities for learning to students who otherwise would not have been able to attend conventional schooling owing to poverty or lack of financial means, geographical isolation, physical disabilities, or other constraints. Finally, and according to de Dios, MOOCs can help address some problems associated with Philippine higher education, such as the ‘specific skills- or specialization-deficits among the faculty’ and the ‘limited infrastructure and personnel budgets among both private and public institutions.’

2.4.3.3 Challenges of MOOCs

Although offering MOOCs has decided advantages as mentioned, it is not without challenges. These include: (1) ‘individual instruction’, or the challenge of tailoring the learning environment to the needs of each student when MOOCs involve course delivery to a large number of participants; (2) ‘the assessment of student performance’, including the related challenges of authenticating original work (and, relatedly, detecting plagiarism) and preventing cheating; and (3) ‘long-term administration and oversight’ — or more pointedly, developing revenue models to make MOOCs self-sustaining, considering that the costs of MOOC development and implementation can be significant, on the one hand, and that MOOCs are usually offered free or at no cost to the participants, on the other.

Other issues and challenges related to MOOCs are the following: (4) ‘MOOC completion rates remain[ing] remarkably low (normally below 10 %)’, based on studies of MOOCs offered in the west, such as Coursera, Open2Study, edx, and Udacity; (5) ‘delivering valuable signifiers for completion such as credentials, badges or acceptance into accredited programs; (6) ‘quality assurance of MOOCs’, and (7) ‘copyright and intellectual property rights’ (with some faculty alleging that their intellectual property rights to their lectures are

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60 Chen, Barnett, and Stephens, ‘Fad or Future: The Advantages and Challenges of Massive Open Online Courses (MOOCs)’.
61 Philippine Institute for Development Studies (PIDS) and Commission on Higher Education (CHED), Massive Open Online Courses: A Primer for the Philippine State Universities and Colleges, 32.
63 Chen, Barnett, and Stephens, ‘Fad or Future: The Advantages and Challenges of Massive Open Online Courses (MOOCs)’.
being violated, on the one hand; and with learners complaining that the course materials cannot be copied, on the other). \(^{64}\)

In addition to the above, there are other issues or threats that may not be present in the MOOC Western model, but may be experienced by developing countries, such as the Philippines. \(^{65}\) Based on a 2016 USAID-supported study of 1 400 users and 2 250 non-users aged 18 to 35 in Colombia, the Philippines, and South Africa conducted by Maria Garrido and others, the low completion rates and homogeneous demographics observed in the United States and other highly developed countries are not found worldwide. For example, MOOC users in the three countries are significantly more likely to complete MOOCs and obtain certification in MOOC courses than their counterparts in highly developed countries. That said, developing countries like Colombia, the Philippines, and South Africa have their own barriers to online learning that they need to overcome—including slow Internet speeds and other issues related to the quality of access to technology. \(^{66}\)

### 2.4.3.3.1 Language and content of course choices

One issue that developing countries like the Philippines can confront in offering MOOCs pertains to the ‘suitability for adoption’ of the MOOCs, given that most MOOCs have been developed and are being offered by educational institutions or companies in developed, industrialized, and rich nations in the West, and are in the English language. \(^{67}\) To address this concern, de Dios points out that higher education institutions (HEIs) in the Philippines may produce their own MOOCs that take into consideration local realities—such as the learners’ levels of difficulty and gaps in proficiency in the language, or the need for specific course content. \(^{68}\) Moreover, locally produced MOOCs ‘can in some cases provide revenue streams if these can be marketed locally or internationally, under some revenue-sharing arrangements.’ \(^{69}\)

### 2.4.3.3.2 Digital access

The delivery of MOOCs requires a strong digital infrastructure that would allow downloading of large-size files or the streaming of high-definition videos, as well as participation in social media platforms and discussion forums. \(^{70}\) However, based on the *fourth quarter 2016 state of the internet report* by Akamai Technologies, Inc., *the Philippines ranked 108* (out of 138 countries/regions) *in terms of Internet speed*, at 4.5 megabits per second (Mbps)—2.5 Mbps lower than the global average connection speed of 7.0 Mbps. The Philippines, in fact, had the lowest average connection speed among the 15 surveyed Asia Pacific countries/regions.

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\(^{64}\) Philippine Institute for Development Studies (PIDS) and Commission on Higher Education (CHED), *Massive Open Online Courses: A Primer for Philippine State Universities and Colleges*, 34-48.

\(^{65}\) Ibid


\(^{67}\) Ibid., 52.

\(^{68}\) de Dios, *The Use of MOOCs as Potential Avenue to Modernize Learning in the Philippines*, 9.

\(^{69}\) Ibid.

\(^{70}\) Philippine Institute for Development Studies (PIDS) and Commission on Higher Education (CHED), *Massive Open Online Courses: A Primer for Philippine State Universities and Colleges*, 51.
In stark contrast to this is the finding by the same Q4 2016 survey by Akamai that the Philippines had the highest mobile connectivity in the Asia Pacific, at 14.3 Mbps—0.5 Mbps higher than the Asia Pacific average mobile connection speed of 13.8 Mbps.

The most effective mode of accessing MOOCs is computers linked to fixed-line broadband; thus, access to broadband and computers is a *sine qua non.* However, based on the measuring the information society report 2016, only 27% of households in the Philippines had a computer in 2015. Relatedly, according to study the state of broadband: broadband catalyzing sustainable development—September 2016, only 28.3% of households in the Philippines were with Internet in 2015, placing the Philippines in rank 64 out of 138 countries/regions. The same study reveals that in terms of the percentage of individuals using the Internet (or Internet penetration), the Philippines ranked 111th out of 191 countries/regions, with 40.70% of individual Filipinos using the Internet in 2015.

The Philippines also has low broadband penetration, as reported by the state of broadband—September 2016 study. In terms of fixed-broadband subscriptions per 100 inhabitants, the Philippines ranked 110th out of 187 countries and regions, with only 3.40 fixed-broadband subscriptions per 100 inhabitants.

In contrast, the statistic for mobile cellular penetration is much higher at 118.1, which means that for every 100 inhabitants in the Philippines, 118.1 had a mobile-cellular subscription in 2015 (implying that some individuals had more than one cellular phone). Active mobile-broadband subscriptions are also higher than fixed-broadband subscriptions: in contrast to the 3.40 fixed-broadband subscriptions per 100 inhabitants earlier cited, the comparable figure for active mobile-broadband subscriptions is 41.58 mobile-broadband subscriptions per 100 subscriptions, placing the Philippines at rank 89 out of 179 countries. The bias for mobile connections is probably because in the Philippines (as in other countries), the Internet is predominantly used for social media and entertainment rather than for education and computing. Moreover, smart phones are priced much lower than personal computers, making the former more accessible.

These statistics on digital access in the Philippines are corroborated by the study of Garrido and others on MOOC usage in Colombia, the Philippines, and South Africa. Survey respondents from the Philippines mentioned the slow Internet speeds in the Philippines.

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72 Ibid., 42.
73 De Dios, *The Use of MOOCs as a Potential Avenue to Modernize Learning in the Philippines,* 8.
76 Ibid., 97.
77 Ibid., 91.
80 De Dios, *The Use of MOOCs as a Potential Avenue to Modernize Learning in the Philippines,* 8.
Moreover, in the Philippines, the lack of competition among Internet service providers and the geography of the 7,107 Philippine islands have contributed to the Philippines having the slowest Internet speed in Southeast Asia.

Digital access, however, is not only limited to Internet connectivity and having computers/ Rather, it also involves ‘building digital literacy among the public’. According to a report on MOOCs by the Philippine Institute for Development Studies (PIDS) and the Commission on Higher Education (CHED), while people may have basic computer literacy, it is ‘not enough to navigate the complexities of a MOOC network.’

What do these figures augur for MOOCs delivery and access in the Philippines? Fast Internet access is crucial to the MOOC learning model. If not, large files, especially high-definition videos, would take a long time to download—if not fail to download altogether.

Under conditions of sluggish and intermittent Internet connection, MOOC providers should consider providing lower-resolution versions of videos. Second, in view of the finding that only 27% of households in the Philippines had a computer in 2015, and considering too low broadband penetration of 3.40 fixed-broadband subscriptions per 100 inhabitants in the Philippines, higher education institutions (HEIs) should seek to provide common computer facilities with broadband connection for the use of their students intending to take MOOCs.

For its part, the Philippine government is trying to address low Internet penetration through its **Juan, konek! Free Wi-Fi Internet access in public places project**, which provides thousands of free Wi-Fi hotspots with the aim of connecting 99% of the population to the Internet. Moreover, before his term ended in June 2016, President Benigno S. Aquino III signed into law on 23 May 2016 republic act 10844, The Department of Information and Communications Technology Act of 2015. RA 10844 created the DICT which is mandated to ‘ensure universal access to quality, affordable, reliable and secure ICT services’. The department should also ‘ensure the provision of a strategic, reliable, cost-efficient and citizen-centric information and communications technology infrastructure, systems and resources as instruments of good governance and global competitiveness.’

The hope is that with the creation of the Department of Information and Communications Technology (DICT), a new digital era for the Philippines will commence, one that would create a more enabling environment for the promotion of massive open online courses (MOOCs) as well as other open and distance e-learning (ODeL) strategies and initiatives.

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81 Garrido, Koepke, Andersen, Mena, Macapagal, and Dalvit, *An Examination of MOOC Usage for Professional Workforce Development Outcomes in Colombia, the Philippines, and South Africa.*

82 Philippine Institute for Development Studies (PIDS) and Commission on Higher Education (CHED), Massive Open Online Courses: A Primer for the Philippine State Universities and Colleges, 49.


86 Ibid.
2.5 Summary

Malaysia
The Malaysian government has launched a comprehensive plan via the Ministry of Higher Education (MoHE) through the **Malaysian education blueprint for 2015-2025 (higher education)**. The emphasis of the blueprint is in modernizing the delivery of higher education through embracing new learning paradigms such as MOOC-based learning via a common platform based on Open Learning. Nonetheless, the expansion of MOOCs to support marginalized communities in rural areas will need further effort in tailoring the content to the specific needs of these communities as well as ensuring that the platform and last-mile access technologies can support the delivery of MOOC content effectively.

Indonesia
In general, the regulation and policy for the use of MOOC and e-learning in Indonesia are on the right track. The Ministry of Research, Technology and Higher Education is actively promoting and controlling the implementation of MOOCs in higher education in order to guarantee that quality of graduates from such a system.

Philippines
As a developing country, the Philippines confronts myriad challenges in educating millions of Filipinos and preparing them for opportunities for employment, job competitiveness, and nation building. The passage and signing into law of republic act 10650 (The open and distance learning act) in 2014 is an important driving force for the improved implementation and further promotion of open and distance e-learning (ODeL) including massive open online courses (MOOCs), to which open universities such as the UP Open University have committed their resources since the 1990s. Moreover, the creation in May 2016 of a Department of Information and Communications Technology (DICT) through republic act 10844 offers immense possibilities and the hope that ICT-related issues—in particular those related to digital access—would be resolved. Indeed, as digital and networked technologies become ubiquitous, lifelong opportunities for learning as well as democratized access to quality education in the Philippines can become increasingly within reach.
2.6 References


PART THREE

RESOURCE READINESS STUDY
3.1 Introduction

Apart from documenting the Regulations, Policies and Initiatives in each partner country, this Feasibility Study document also aims to report the resources required for the Competen-SEA MOOC initiative. In general, this resource readiness section will document three types of resources:

(a) Infrastructure readiness
   Infrastructure readiness involves investigating the end-user community Internet access penetration as well content storage and delivery platform in each partner country

(b) Instructional readiness
   Instructional resources involve subject matter experts, educators, content developers, illustrators, video and audio production staff who are needed in the course of developing and delivering the MOOC content.

(c) Support readiness
   Support resources refer to technical staff and instructional support staff needed to train, maintain, and support end-user needs in the process of delivering the MOOC contents to the target learners.

3.2 Infrastructure readiness

Infrastructure readiness for MOOC deployment focuses on the following key areas:

- End-user Community Internet Access Penetration
- Content Storage and Delivery Platforms

3.2.1 End-user Community Internet Access Penetration

The master plan on ASEAN connectivity 2025 (ASEAN Secretariat, 2016) details the goals for the ASEAN region to improve the physical infrastructure to improve connectivity among the ASEAN countries as a driver for regional development. The achievements since the previous master plan on ASEAN connectivity 2010 has resulted in increased investment in infrastructure development and establishing linkages among the ASEAN countries, both in terms of transportation and logistics, as well as in virtual linkages through investment in broadband Internet connectivity within and among ASEAN countries. The ASEAN Internet exchange network (AIX) project was vital for the development of plans for establishing an ASEAN broadband corridor, while the initial feasibility study for establishing an ASEAN single telecommunications market are important drivers in encouraging investments and deployment of broadband Internet services within ASEAN countries to support Intra-ASEAN logistics, trade and financial services (ASEAN Secretariat, 2016).

The goal of implementing MOOCs is very much dependent on the accessibility and penetration of high speed broadband services to the target audiences. Internet broadband penetration in Southeast Asia (SEA) has seen tremendous growth in the past five years, albeit at an uneven level across individual countries within the region.
Table 4: Growth in Internet Penetration for Southeast Asian countries

| Internet Penetration | 2012  
|----------------------|--------|
|                      | (Economist Intelligence Unit, 2014) | 2014  
|                      | (Singh, 2016) | End 2016  
|                      | (Kemp, 2017) | % Change  
|                      |          | 2012-2016 |
| Singapore            | 74.2 %   | 82.0 %   | 82 % | 11 % |
| Malaysia             | 65.8 %   | 67.5 %   | 71 % | 8 %  |
| Brunei               | 60.3 %   | 68.8 %   | 86 % | 43 % |
| Thailand             | 26.5 %   | 34.9 %   | 67 % | 153 % |
| Vietnam              | 39.5 %   | 48.3 %   | 53 % | 34 % |
| Philippines          | 36.2 %   | 39.7 %   | 58 % | 60 % |
| Indonesia            | 15.4 %   | 17.1 %   | 51 % | 231 % |
| Cambodia             | 4.9 %    | 9.0 %    | 45 % | 818 % |
| Laos                 | 10.7 %   | 14.3 %   | 26 % | 143 % |
| Myanmar              | 1.1 %    | 2.1 %    | 26 % | 2264 % |

From Table 4, it can be seen that SEA countries with relatively high Internet penetration has experienced relatively stable growth over the five year period (with the exception of Brunei), while the countries with low Internet penetration have exploded in growth, notably in countries such as Myanmar, Cambodia, and Indonesia. Much of the increase is due to the dramatic increase in mobile Internet services which accompanied the growth in cellular telephony services. The statistics presented by Kemp (2017) has the caveat that it used different data sources from the earlier statistics, and shows significant differences for countries that had less developed infrastructure. However, the data presented by Kemp (2017) presents a more up to date picture due to the comprehensive real-time data gathered from global service providers.

The rise of 3G, 4G and even 5G service providers in most SEA countries has created a sea change not just in terms of Internet broadband penetration among the respective populations of each country, but also gave rise to new digital services, notably social media, e-commerce and online streaming content. Quality of Service is not consistent however. Cellular providers experiencing explosive growth in given SEA countries are not likely to be able to maintain sustained network throughput for users who are mostly interested in text and voice messaging, social media and casual gaming applications (Deloitte Southeast Asia, 2017), in contrast with video streaming applications requiring stringent Quality of Service (QoS) requirements needed to support MOOC delivery.
Table 5 depicts the current mobile Internet usage trends in SEA countries. The statistics for the percentage of mobile subscriptions vs. Internet users, percentage of broadband connections, and percentage of mobile social media users were taken from Kemp (2017), while the statistics for percentage of users who used VoIP Services and Top-3 most popular applications were taken from Deloitte Southeast Asia (2017). Note that the respondents and sampling periods were different between the two reports.

One notable trend is that mobile subscriptions far outnumber the Internet user population. In countries with low Internet penetration, this indicates that many mobile users are still using basic cellular services. In addition, the mobile subscriptions tend to exceed the total population of the country (data not shown in Table 5). This is due to many users in these countries having multiple mobile/cellular subscriptions, often for work vs. personal reasons. Lastly, in the more developed countries, some users may have multiple cellular devices, inflating the total number of cellular subscriptions compared to the actual number of users.
Another aspect of the statistics in Table 5 indicates that mobile Internet broadband is expanding rapidly throughout the region. Even in countries such as Laos and Myanmar with relatively low Internet penetration, more than a third of the mobile Internet users have access to 3G and 4G services. In addition, the majority (> 60 %) of mobile Internet users are active in social networking, while social networking is generally the Top 1 or 2 mobile application for most countries surveyed except for Singapore. This indicates that users with Internet access are quite ready to use the Internet for exchanging information and building communities, one of the key features of MOOC-centric learning.

Nonetheless, the biggest caveat not shown in these tables is that most Internet broadband services are confined to urban areas with large populations, whereas rural areas and areas targeted by Competen-SEA partners only have limited Internet access; high speed broadband access remains a distant dream in such rural areas. Wired broadband access is unlikely to be widely available for many years to come given the existing broadband Internet penetration trends which favor wireless and cellular Internet services, as well as the high cost of deployment for wired broadband services. Instead, infrastructure readiness would have to focus on the use of mobile/cellular broadband for Internet access as well as the use of broadband Internet over satellite to reach such populations. This is especially the case for countries with extensive archipelagoes such as Indonesia and the Philippines.

While there are no specific study on the distribution of urban vs. rural Internet users and available bandwidths for the ASEAN region, the most recent International Telecommunications Union (ITU) data for 35 countries for 2010-2015 (International Telecommunications Union, 2016) had approximately 45 % of the urban population compared approximately 28 % of the rural population having Internet access for Thailand, while the proportion for Indonesia is approximately 16 % urban vs. approximately 3 % rural. Further statistics regarding the development of rural Internet access in the ASEAN region is needed.

Consequently, the critical issue which needs to be addressed in terms of Infrastructure readiness is that there is no ‘one-size-fits-all’ model for MOOC deployment. Existing MOOC architectures and platforms were designed with the assumption of good Internet infrastructure with consistent, high network throughputs capable of sustaining video streaming for thousands of users without faltering. Such platforms were also designed primarily for institutions of higher learning such as colleges and universities where heavy investments in e-learning technology and high-speed Internet backbone connectivity are encouraged and often supported by the respective governments.

While video streaming usage is increasing from 70 % of global IP traffic in 2015 to become 82 % of global IP traffic by 2020 (Cisco Systems, 2016), the high bandwidth demands of existing MOOC video streams will likely not be suitable for mobile broadband-based delivery due to the high cost of mobile Internet access, which has the restriction of data caps (metered data access) as well. In addition, existing usage of Internet for most developing countries and especially rural users remain focused on messaging and social networking applications (International Telecommunications Union, 2016), due to the limited reach of high capacity broadband Internet backbones and unreliable end-user access networks.

A proper survey is needed during the MOOC planning phase, using suitable survey instruments and field visits, to determine the on-the-ground broadband accessibility and measurements of actual network throughput, since it will greatly impact the choice of MOOC delivery platforms, minimum bandwidth requirements, and mode of delivery used.
3.2.2 Content Storage and Delivery Platforms

3.2.2.1 Types of Content

MOOC content can be divided into two broad categories:

- Static Content such as video clips that are often hundreds of Megabytes in size
- Dynamic Content such as forum posts, assignments and progress assessment materials

Static content are typically developed before the start of the MOOC course, and are expected to remain unchanged for the duration of the course. Dynamic content are generated as a result of user participation in the course and are therefore updated frequently.

3.2.2.2 Traditional (Centralized) MOOC Architecture

Existing MOOC systems architecture has been developed under the assumption that the last-mile access is sufficient and Internet backbone capacity has sufficient capacity to support the given number of simultaneous MOOC participants. Consequently the constraints and bottleneck is at the MOOC provider, in terms of the server capacity of the MOOC system as well as the upstream bandwidth from the content servers to the Internet.

As shown in Figure 4, the MOOC contents are kept in a centralized system, and users have to access the system to retrieve contents as well as participate in any activities, discussions and assignments. Multiple servers may be provisioned in order to balance the load, based on the simultaneous traffic by the number of users, and this system can be deployed using dedicated hardware in a Datacenter, or dynamically scaled using cloud service providers (such as Amazon AWS). Examples of such centralized MOOC systems include Coursera, EdX, Openlearning, and others.

This architecture has the benefit of robustness and reliability in terms of system uptime, since dedicated staff are often assigned to the Datacenter or by the Cloud providers to support the operation of the system and monitor network and capacity utilization. Nonetheless, if the last mile connection to the users is unreliable, has limited bandwidth, or is too distant from the server location, the usage experience will be poor, especially since the...
video content needs to be transferred through many intermediate networks before reaching the user.

3.2.2.3 Centralized Architecture with Static Content Caching

To overcome the bandwidth issue affecting video content streaming and transfer, a common strategy is to utilize content caching servers located closer to the user location. This is a common strategy used by all streaming content providers such as YouTube and Netflix. Since the MOOC video content are typically static content, such a content caching strategy is effective in alleviating the need for users to access the central server to retrieve the videos.

![Centralized MOOC Architecture with Static Content Caching](image)

Figure 5: Centralized MOOC Architecture with Static Content Caching

Figure 5 illustrates the use of static content caching servers to pre-distribute video content for later access by users. Content caching and distribution services are provided by companies such as Akamai, which installs caching servers in local and regional Internet service providers (ISPs) facilities in order to reduce the traffic from the end user to the central server. Users accessing a given MOOC video clip would first request the content from the MOOC server, which will return a link to the nearest content cache for actual retrieval of the content by the user. Content replication from the central MOOC to the Caching servers can be done during off-peak hours to reduce the load on the MOOC datacenter uplink.

 Nonetheless, this architecture still assumes that the end user has sufficient last-mile access bandwidth, as well as the fact that a reliable Internet backbone network is available for the system to pre-distribute the static content. Since only static content is cached, the user would still need to access the MOOC system for dynamic content such as forum discussions and to conduct progress assessments. This is a good solution in urban areas where network infrastructure and access bandwidths are well developed.

3.2.2.4 Hierarchical MOOC Architecture with Content Replication

Unfortunately the deployment scenario for Competen-SEA target communities does not meet these requirements in general. As most of the target users are in rural environments where Internet infrastructure is poor or unreliable, it is not possible to adopt Centralized MOOC Architectures and expect the users to have a satisfactory experience.

A more appropriate solution should include a hierarchical MOOC architecture where MOOC course design, content development, and course beta-testing is done by the institutions
concerned using a master MOOC system, and the finished content is then replicated to as many Distribution MOOC systems as necessary, depending on the location of the target users. Typically the distribution MOOC systems should reside in the local ISP data centers, or else be located at the learning center managed by the local organization responsible for coordinating course users and providing mentoring and other course management services. This is illustrated in Figure 6.

**Figure 6: Hierarchical MOOC Architecture**

Content Replication involves not just the static content as shown in Figure 5 but also all relevant dynamic content. Consequently target users will only need network access to the closest distribution MOOC system in order to participate in the course.

Content replication is typically one-way for static content, and can be done either via available Internet connection or else even offline data transfer using removable storage media (otherwise known as sneaker-net).

Dynamic content can be transferred in both directions: from the master MOOC to the distribution MOOC, and user feedback transferred back to the Master MOOC, but it may not be in real-time due to the Internet backbone bandwidth limitations and/or network connectivity downtime in the case of unreliable links. Offline transfers are possible but the delay would disrupt the smooth exchange of information and ideas, making it impractical for any interactive discussions.

As a result, a hybrid pedagogical approach may be more relevant in targeting rural users such as the case for the Competen-SEA project. MOOC content may still be provided for online or offline access, but discussions and assessment should be conducted by facilitators on site where necessary.

**3.2.3 Online and Offline Access**

Despite the use of a hierarchical MOOC architecture, last mile Internet access can still pose a major obstacle in rural areas for many SEA countries. The ability of downloading course contents for later offline access would help alleviate this problem. Consequently, the MOOC client software must have the ability to accommodate both online and offline access by users.
In addition, the cellular data cap would be a significant deterrent for the targeted MOOC users to access streaming content online. It is expected that in a hierarchical MOOC deployment, the distribution MOOC centers would be also used as the face-to-face blended learning venues equipped with Wi-Fi facilities. MOOC learners would download the content for subsequent modules while participating in the face-to-face sessions.

3.3 Instructional Readiness

Instructional Resources include the subject matter experts, educators, content developers, illustrators, video and audio production staff, that are needed in the course of developing and delivering MOOC content. While it is ideal for the entire spectrum of expertise to be available, very often several of the roles would be fulfilled by one or two persons who take on multiple roles as part of the development and delivery of the MOOC materials. With the wide availability of consumer-accessible tools and equipment today, including smartphones that can perform several functions such as recording and editing of video and audio, that has become increasingly more practical for subject matter experts and educators to produce MOOC content and materials by themselves.

In addition, various equipment and facilities are needed to support the development of the MOOC content. It is beyond the scope of this Feasibility Study to provide concrete recommendations for the types of equipment and facilities that are needed, since the pace of technological progress, available level of capital investment, and the availability of new tools and cloud-based services, both free and paid, for supporting audio-visual content capture, creation and editing, render any specific recommendations obsolete relatively quickly. Consequently, organizations wishing to implement MOOC courses from scratch are advised to evaluate the available tools and services at that time to determine the best fit for addressing the needs of the various roles outlined in Section 3.3 and 3.4.

Nonetheless, looking beyond the ability to use tools and equipment, proper instructional design is critical for the success of any learning platform. One of the objectives of Competen-SEA is to help train and increase the competencies of personnel involved in development, deployment and evaluation of the MOOC-based learning content for the target groups. This will be covered under work package 2 of the Competen-SEA project.

A description of the respective roles are given in the following subsections.

3.3.1 Subject Matter Experts

The subject matter experts are responsible for coming up with the content for the MOOC module, in terms of outlining the knowledge, core competencies to be learnt, and how to determine mastery of the content.

3.3.2 Educators

Educators such as lecturers and teachers will take the knowledge and core competencies specified by the subject matter expert and package it in a way that meets the needs of the targeted learner group. Elaboration of the knowledge and content at a level suitable for the target learners is an essential role of the educator. This include localization into the relevant local languages and contextualization of the knowledge towards the specific needs of the target learners, as well as delivery of the content in a way that engages self-paced learners towards completing the course. Development of suitable evaluation items is also under the
purview of the Educator. The evaluation items can include online quizzes and in-person tasks and assignments.

In order to facilitate self-paced learning, the content should also be packaged in suitably sized ‘chunks’ for the learner, by taking into consideration the delivery method and appropriate use of the selected MOOC platform.

3.3.3 Content Developers

Content Developers work closely with the Educators to create the necessary textual information, evaluation items, and audio and visual contents. In addition, the Content Developer should ensure that the content is transferred properly to the MOOC platform in a format that is consistent and suitable for access by the target users using a variety of devices such as Personal Computers, smartphones and tablets, and which meets the Quality Assurance guidelines set for the organization. Very often the Educator doubles as the Content Developer since the two roles are very closely related.

3.3.4 Illustrators

Engaging the learner often require the use of graphics, images, diagrams and other illustrations to better explain the textual content. Illustrators help to design and create attractive graphics, animation and other audio-visual aids for learning.

3.3.5 AV Producers

Audio and Video recordings are an integral part of MOOCs. Staff who manage audio and video recordings, editing and post-production are needed to support the effective capture and delivery of the learning content by the Educators.

3.4 Support Team Readiness

Support resources refer to technical staff and instructional support staff needed to train, maintain, and support end-user needs in the process of delivering the MOOC contents to the target learners.

A brief list of support resources that should be available include:

- On-site (rural) Technical Support for assisting users with Internet configuration, training in MOOC software usage, troubleshooting access issues, etc. (it is expected that target users in rural areas will not be as Internet-savvy as urban users).
- On-site (rural) Learning Facilitators to guide users with hands-on components of MOOC courses, to encourage peer-participation and engagement.
- Content matter experts who are responsible for keeping the MOOC content up to date and revise content where necessary.
- Quality Assurance team to monitor and check on the delivery, student engagement and quality of the evaluation components.
- Network Administrator to manage and maintain the Master MOOC to Distribution MOOC communications channels, and proper running of the various servers and data center equipment.
3.4.1 On-site Technical Support

Since the target learners are located in rural and less developed areas, the availability of on-site technical staff to help users with setting up their computers or smart devices for accessing the MOOC content is essential. In addition, very often network access problems will dampen the enthusiasm of the learners, and having technical support at the local level is essential for overcoming such issues. Often technical assistance for adult learners may come from their children who are often exposed to modern Information Technology devices and who are not afraid of using new online services and tools.

3.4.2 On-site Learning Facilitators

It is expected that target learners will not be as motivated to complete a fully online MOOC course, especially if they are new to the concept of online self-paced learning and have lower literacy levels compared to urban-based learners. There is a need to have blended learning with face-to-face components to encourage interaction among the participating learners, as well as to engage the learners in more active forms of learning activities such as hands-on assignments and other learning tasks. Consequently, on-site learning facilitators are a vital part of the MOOC delivery process.

3.4.3 Content Matter Experts

Content Matter Experts should be involved in the continued updating and refreshing of the course contents to maintain relevance and address learning difficulties faced by the learners.

3.4.4 Quality Assurance Team

The development and validation, including open design, evaluation methodology and tools, will be part of the Quality Assurance steps undertaken for the project. Trained personnel who are able to validate the effectiveness of the MOOC content delivery and propose improvements to the MOOC learning process are important for ensuring the continued success and sustainability of such programs.

3.4.5 Network and System Administrator

The Network and System Administrator is responsible for the overall management of the MOOC platform to update the software and hardware as necessary for the continual running of MOOC services. Since the proposed MOOC architecture is a Hierarchical MOOC Architecture, additional network maintenance may have to be undertaken by the on-site technical staff to ensure the Internet connectivity functions well and for the correct transfer of content from the Master MOOC to the Distribution MOOCs located at the respective sites.

3.5 Readiness Audit

In order to facilitate planning and deployment, the following questions can be used as a starting point for performing a Readiness Audit.

3.5.1 Infrastructure

1. What is the existing networking infrastructure?
   a. At the Master MOOC Development Location
b. At respective Distribution MOOC Locations/Centres
2. What is the minimum sustainable bandwidth available?
   a. From Master MOOC to Internet/ISP
   b. From Internet/ISP to respective Distribution MOOC
3. What is the minimum bandwidth available to the end users?
4. Do the users have constant access to the Internet, or is it available only during certain hours of the day/days of the week?

3.5.2 Facilities
1. Does the MOOC development team have the facilities?
   a. Is there suitable space (e.g. sound studio/room) for audio/visual recording, content creation, post-editing etc.?
   b.
2. Do the targeted learner groups have access to in-person location/facility?
   a. How many participants can be accommodated at a given time?
   b. Are there computing resources and Wi-Fi/LAN access for targeted learners?
3. Are there suitable on-site technical support personnel to help learners?
4. Are there suitable on-site learning facilitators to conduct the in-person sessions?

3.5.3 Equipment
1. What is/are the equipment / devices needed?
   a. Video recording
   b. Audio Recording
   c. Post-production
   d. Content Creation
   e. Graphics/Diagram Creation
   f. End-user device to test access to MOOC content

3.5.4 Platform
1. Which MOOC platform to be used? Purely online or blended?
2. Can the MOOC platform support Hierarchical architecture with Distribution MOOCs located close to the target learner groups?
3. Can the MOOC client support offline learning? Downloading of materials?
4. Can the MOOC platform scale the type of content transferred based on the available bandwidth? (e.g., text and images for low bandwidth, video for high bandwidth)

3.5.5 Human Resources
1. Who are the subject matter experts, training providers, technical assistants, etc.?
2. What kind of basic skills/training do they need in order to deliver the MOOC course effectively?
3. Are there facilitators and tutors available for both the online and in-person engagement sessions?
4. Are there QA personnel to vet content and check that all MOOC items conform to organization/national MOOC guidelines and standards?
5. Are sufficient support staff or volunteers for technical on-site support available?
6. Are network/system administrator(s) available for operating, troubleshooting, maintaining and upgrading of central MOOC servers and distribution MOOC servers?

3.5.6 Intellectual Resources

1. Are there any existing intellectual resources or materials that can be repurposed for MOOC?
2. Does the organization encourage the use and reuse of Open Educational Resources (OER), including Creative Commons resources?
3. What license (Standard Copyright, Creative Commons) should be adopted for new content under development?

3.6 References

Simon Kemp (2017), Digital in 2017: Southeast Asia, Online Presentation, we are social, Jan 26, 2017. URL: https://www.slideshare.net/wearesocialsg/digital-in-2017-southeast-asia [Last Accessed 2 May 2017]


PART FOUR

LEARNER READINESS STUDY
4.1 Malaysia

4.1.1 Introduction

Readiness of the target audience is one of the important elements prior to the design, development and implementation of any learning or training using technology. This project attempts to develop and evaluate the impact of MOOC initiative on single mothers’ knowledge and skills especially in entrepreneurial skills. Therefore, the readiness level of the single mothers on MOOCs need to be investigated. It is vital to measure their MOOCs’ readiness level prior to the learning/training so that we can gauge their prior knowledge and skills in using ICT, their motivation and attitude in online learning environment, their Internet accessibility and usage, etc. It is assumed that the training or learning session will be much more effective if the learners (the single mothers) are ready in terms of the aforementioned aspects.

In addition to their MOOC readiness, this study also attempts to measure the single mothers’ readiness for entrepreneurial skills development. Since the main intention of this project is to develop and evaluate a MOOC initiative on entrepreneurship for single mothers, their level of readiness in this subject matter will also be gauged. Their experience or intention to learn entrepreneurial skills is important as one of the prerequisites to participate in this project. Moreover, the support that is needed by them to get involved in the business world is also vital, and as such, will be investigated.

4.1.2 Research Methodology

4.1.2.1 Research Design

In this study, a mixed method which involved qualitative and quantitative approaches were used. These methods were chosen to obtain the best results in the target audience’s readiness for MOOC learning activities. Quantitative data was collected through a set of questionnaire for the single mothers while qualitative data was obtained through interview with some of the respondents. A questionnaire that consists of items to measure their MOOC and entrepreneurial skills readiness were administered to the single mothers. For the qualitative data, two focus group interviews/discussions were carried out to nine respondents who had volunteered to participate in the session.

4.1.2.2 Population and sampling

The population of this study is the single mothers in Malaysia. In this country, the term ‘single mother’ is defined as a woman who was not living with the husband and has to fend for herself and also her children; woman who is in the process of divorce; woman who has a sick husband and not able to provide a living and need special care, and woman who is raising children of others without the help of a husband (Majzub & Karim, 1999). According to Azizah Mohd Dun from the Department for Women’s Development, Ministry of Women, Family and Community Development, Malaysia (KPWKM), there are about 83,775 registered single mothers in Malaysia (“83,777 ibu tunggal”, 2016). In this study, purposive sampling was used, in which those who have registered as members of the Single Mothers’ Association (SMA) were selected. As it is difficult to locate the individual single mothers, it is through these associations that they are able to be contacted. The Single Mothers’
Association of Penang, Malaysia was selected for this study, in which a total of 103 single mothers were involved.

4.1.2.3 Research Instruments

For the quantitative data, a set of questionnaire (Appendix A) was developed to measure the single mothers’ level of MOOC readiness as well as their readiness on entrepreneurship. The questionnaire consists of three sections:

A. Demographics;
B. ICT and MOOC readiness; and
C. Entrepreneurship and business readiness

This questionnaire consists of 29 items (Appendix A). The details of each section are shown in Table 6.

Table 6: Details of the questionnaire

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>No of items</th>
<th>Adapted from</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Demographics</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Items on age, education level, working experience, income, marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>ICT and MOOC readiness</td>
<td>17</td>
<td>Malaysia MOOC (2014)</td>
</tr>
<tr>
<td></td>
<td>Items on ICT/Internet access and experience, online, MOOC and social media experience, challenges</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Items on interest, experience, knowledge and skills in entrepreneurship</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>29</strong></td>
<td></td>
</tr>
</tbody>
</table>

For the qualitative approach, two focus group interviews/discussions were proposed. The items in the interview were categorized into six aspects: (1) demographics, (2) knowledge on online learning and MOOC (3) personal characteristics and strengths, (4) readiness in terms of technology access and ICT skills, (5) motivation, and (6) challenges and barriers to MOOC participation. The focus group discussions’ instrument is shown in Appendix B.

4.1.3 Findings

This study employed a mixed method approach in which quantitative and qualitative data was gathered and analysed. As reported earlier, quantitative data was obtained by using a questionnaire administered to the single mothers, while qualitative data was collected through focus group interview or discussion among a selected sample. The following sections report the findings for each set of data.
4.1.3.1 Quantitative Data Findings

A total of 103 single mothers responded to the questionnaire distributed through the Single Mothers’ Association. However, based on the analysis, six were incomplete. Thus, a total of 97 returned questionnaires were used for data analysis purposes.

**Section A: Demographics**

In terms of marital status, the majority of the respondents were widows (n: 63 or 64.9 %) while the rest were divorcees (n: 34 or 35.1 %). Meanwhile, the majority of respondents were above 50 years old (n: 71 or 73.2 %), followed by those in the 41-50 years old category (n: 24 or 24.7 %), while only two respondents were between 31-40 years old (2.1 %).

With regard to education level, most of the respondents did not have any university degree. Specifically, 42 respondents (43.3 %) only had Malaysian Certificate of Examination (equivalent to ‘O Level’ or Grade 11), and 29 of them (29.9 %) with only Lower Certificate of Education (Grade 9) qualification. While only six respondents obtained diploma (6.2 %). None of the respondents reported to have any university degree.

In respect of living support, most of the respondents were either self-supported (n: 39 or 40.2 %) or did not have any job or were simply retirees (also n: 39 or 40.2 %). Meanwhile, 19 respondents were non-professionals (19.6 %). However, since no respondent claimed to have any sort of university degree, none of them declared any professional status. Concerning income, 37 of them (38 %) earned less than RM2 000 (USD460) per month, while 21 respondents (21.6 %) earned between RM2 000–4 000 (USD460–920) per month. No respondent reported earnings more than RM4 000 (USD920) per month.

**Section B: ICT and MOOC Readiness**

This section aimed at investigating the ICT and MOOC readiness of the single mothers. Specifically, the section attempted measuring the respondents’ ICT/Internet access and experience, online, MOOC and social media experience, as well as the challenges that they might encounter in learning through an online platform.

a) *Ownership of ICT Devices*

The ‘ownership’ of portable ICT devices opens up possibilities for the use of ICT and access to educational materials across the curriculum, in the field, and in the home (BECTA, 2004). In this study, a total of 65 respondents (67.0 %) owned mobile phones. However, only 49 of them (50.5 %) had theirs being a smart phone. Meanwhile, only 7 respondents (7.2 %) had ownership of a tablet or iPad and only 15 respondents (15.5 %) possessed a personal computer. Table 7 summarizes the findings in terms of device ownership.

<table>
<thead>
<tr>
<th>Device</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>i Hand phone</td>
<td>65</td>
<td>67.0</td>
</tr>
<tr>
<td>ii Smart phone</td>
<td>49</td>
<td>50.5</td>
</tr>
<tr>
<td>iii Tablet / iPad</td>
<td>7</td>
<td>7.2</td>
</tr>
<tr>
<td>iv PC</td>
<td>15</td>
<td>15.5</td>
</tr>
</tbody>
</table>
b) Access to ICT Devices

The learners, who own a smartphone and/or a laptop, are encouraged to have access to and use their own devices in their studies. In this manner, they can have experiences of using their own devices for learning purposes. This is one way to encourage them to think creatively and in what ways their everyday devices can be useful for learning, too (Valtonen, Mäkitalo-Siegl, Kontkanen, Pöntinen, & Vartiainen, 2012). Hence, individuals’ access to ICT devices was ascertained.

In connection with access to ICT devices, the findings as depicted in Table 8 indicate that 57 of the respondents (58.8 %) could access smart phones (either their own phones or their family members’). However, only a few of them (n: 10 or 10.3 %) had access to a tablet or an iPad, while only 25 respondents (25.8 %) had access to a PC. In other words, majority of the respondents did not have access either to tablet/iPad (89.7 %) or PC (74.2 %) respectively.

<table>
<thead>
<tr>
<th>Device</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>i Smart phone</td>
<td>57</td>
<td>40</td>
</tr>
<tr>
<td>ii Tablet/iPad</td>
<td>10</td>
<td>87</td>
</tr>
<tr>
<td>iii PC</td>
<td>25</td>
<td>72</td>
</tr>
</tbody>
</table>

Table 8: Access to devices (n: 97)

In connection with access to ICT devices, the findings as depicted in Table 8 indicate that 57 of the respondents (58.8 %) could access smart phones (either their own phones or their family members’).

In connection with access to ICT devices, the findings as depicted in Table 8 indicate that 57 of the respondents (58.8 %) could access smart phones (either their own phones or their family members’). However, only a few of them (n: 10 or 10.3 %) had access to a tablet or an iPad, while only 25 respondents (25.8 %) had access to a PC. In other words, majority of the respondents did not have access either to tablet/iPad (89.7 %) or PC (74.2 %) respectively.

c) Access to Internet

Internet access is vital in online learning environment including MOOC. Thus, the respondents were questioned on whether they had access to this Internet technology. The findings indicated that 63 respondents (64.9 %) had access to the Internet, while the remaining 34 respondents did not have such access.

d) Location of Internet Access

Those who indicated having access to the Internet, were asked further about the location of access. The findings in Table 9 indicate that, majority of the respondents (n: 54, or 85.7 %) accessed the Internet from home, while only a few accessed it from their office (n: 6 or 9.52 %), Local Internet Centre (n: 3 or 4.76 %) and cybercafé (n: 2 or 3.17 %).
Table 9: Location of Internet access (n: 63)

<table>
<thead>
<tr>
<th>Location</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>i Home</td>
<td>54</td>
<td>85.7</td>
</tr>
<tr>
<td>ii Office</td>
<td>6</td>
<td>9.52</td>
</tr>
<tr>
<td>iii Local Internet Centre</td>
<td>3</td>
<td>4.76</td>
</tr>
<tr>
<td>iv Cyber cafe</td>
<td>2</td>
<td>3.17</td>
</tr>
</tbody>
</table>

e) Type of Internet Access

In addition, those who had access to Internet were inquired of the type of Internet access that they are current using. The findings showed that only 31 of them (49.2 %) used their home Internet access (example: Streamyx as lease line connection), while 44 of them (69.8 %) used their own data plan for Internet access. These findings also denoted that some of the respondents used both the home Internet access and mobile data plan for Internet usage.

f) Frequency of Internet Access

In the matter of Internet access frequency, the findings suggested that majority of them accessed the Internet on a daily basis (n: 47 or 74.6 %). This was followed by accessing it every alternate day or once a week (n: 6 respondents or 9.52 % respectively). The remaining respondents either accessed it once a fortnight (n: 2 or 3.14 %) and once a month (n: 1 or 1.59 %). In other words, majority accessed the Internet on a daily basis. Information obtained from respondents’ frequency of Internet access, is graphically presented in Figure 7 below.

![Figure 7: Frequency of Internet Access](image)
g) ICT Skills

Competence in ICT skills represents an important component in online learning. In view of this, respondents were asked about their competency levels of ICT skills. The findings, as indicated in Table 10, clearly showed that their computer skills vary. A total of 26 respondents (or 26.8 %) claimed to have moderate computer skills, while 22 respondents (22.7 %) indicated a low computer skills level. Meanwhile, majority of them (n: 45 or 46.4 %) expressed not having any computer skills.

<table>
<thead>
<tr>
<th>ICT Skill</th>
<th>High</th>
<th>Moderate</th>
<th>Low</th>
<th>No skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer skill level</td>
<td>4 (4.1 %)</td>
<td>26 (26.8 %)</td>
<td>22 (22.7 %)</td>
<td>45 (46.4 %)</td>
</tr>
</tbody>
</table>

Furthermore, respondents were asked about their usage of Internet browsers and search engines. The findings are summarized in Table 11 and depicted in Figure 8.

<table>
<thead>
<tr>
<th>Internet Usage</th>
<th>A</th>
<th>MA</th>
<th>NS</th>
<th>SDA</th>
<th>DA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using Internet browser</td>
<td>33</td>
<td>22</td>
<td>22</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>(34.0 %)</td>
<td>(22.7 %)</td>
<td>(22.7 %)</td>
<td>(4.1 %)</td>
<td>(16.5 %)</td>
</tr>
<tr>
<td>Using search engines</td>
<td>33</td>
<td>12</td>
<td>25</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>(34.0 %)</td>
<td>(12.4 %)</td>
<td>(25.8 %)</td>
<td>(7.2 %)</td>
<td>(20.6 %)</td>
</tr>
</tbody>
</table>

A; agree; MA: moderately agree, NS- unsure, SDA: slightly disagree, DA: Disagree

![Figure 8: Internet usage](image-url)
With reference to the ownership of personal email accounts, a total number of 42 respondents (43.3 %) own an email account, while 55 of them (56.7 %) had not. Next, only 29 respondents (29.9 %) agreed to often using email for communication purposes.

h) Purpose of Internet Usage

Furthermore the study was interested in unravelling the purpose for which respondents used the Internet. Responses from respondents are shown in Table 12 and Figure 9 respectively. The findings revealed that 52.6 % of them (51 respondents) used the Internet to search for information, and 49.5 % (n: 48) mainly for communication. However, only 26.8 % of the respondents (n: 26) utilized the Internet for learning purposes, with only 14.4 % (n: 14) employing it for entertainment purposes.

Table 12: Purposes of Internet use

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>i Search for information</td>
<td>51 (52.6 %)</td>
<td>46 (47.4 %)</td>
</tr>
<tr>
<td>ii Communication</td>
<td>48 (49.5 %)</td>
<td>49 (50.5 %)</td>
</tr>
<tr>
<td>iii Learning</td>
<td>26 (26.8 %)</td>
<td>71 (73.2 %)</td>
</tr>
<tr>
<td>iv Entertainment</td>
<td>14 (14.4 %)</td>
<td>83 (85.6 %)</td>
</tr>
</tbody>
</table>

Figure 9: Purpose of Internet usage

In addition to the purpose for using the Internet, the respondents were asked whether there were other people (e.g.: family members, kids, friends) who could assist them in using the Internet for learning purposes. A total of 75 respondents (77.3 %) agreed that they have other individuals who could help them in using the Internet, while 22 others (22.7 %) did not
agree with this statement. Among the 75 respondents who responded positively to having assistance in using the Internet for learning, some of them intimated that the following individuals could assist them:

- Own kids (all 75 respondents)
- Siblings (13 respondents or 13.4 %)
- Friends (25 respondents or 25.8 %)

i) Internet Access and Online Learning

For online learning to be effective, the complementary relationship between Internet access and online learning cannot be gainsaid. Against this backdrop, respondents were asked about their agreement on several statements regarding Internet access and learning through online (Table 13). The findings pointed out that, 46 respondents (47.4 %) agreed to the presence of 1Malaysia Internet Centre in their locality, while 36 respondents (37.1 %) were not sure about the existence such facility. In addition, 58 respondents (59.8 %) agreed to visit the 1Malaysia Internet Centre for online learning activities. A total of 60 respondents representing 61.9 %, had heard the term ‘online learning’ prior to this study. Moreover, majority of the respondents (n: 75 or 77.3 %) were ready to participate in free online courses. Interestingly, 46 respondents (47.4 %) were rather willing to spend some money to learn certain online courses.

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Agree</th>
<th>Rather Agree</th>
<th>Not Sure</th>
<th>Rather Disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>There is the 1Malaysia Internet Centre in my locality</td>
<td>42 (43.4 %)</td>
<td>4 (4.1 %)</td>
<td>36 (37.1 %)</td>
<td>1 (1.0 %)</td>
<td>14 (14.4 %)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>I am ready to visit the 1Malaysia Internet Centre near my locality</td>
<td>39 (40.2 %)</td>
<td>19 (19.6 %)</td>
<td>17 (17.5 %)</td>
<td>6 (6.2 %)</td>
<td>16 (16.5 %)</td>
</tr>
<tr>
<td></td>
<td>to learn specific skills through online</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii</td>
<td>I have heard the term ‘online learning’ previously</td>
<td>53 (54.6 %)</td>
<td>7 (7.2 %)</td>
<td>21 (21.6 %)</td>
<td>1 (1.0 %)</td>
<td>15 (15.5 %)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv</td>
<td>I am ready to participate in free online learning courses</td>
<td>66 (68.0 %)</td>
<td>9 (9.3 %)</td>
<td>12 (12.4 %)</td>
<td>1 (1.0 %)</td>
<td>9 (9.3 %)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>v</td>
<td>I am willing to spend some money to learn certain online courses</td>
<td>28 (28.9 %)</td>
<td>18 (18.6 %)</td>
<td>17 (17.5 %)</td>
<td>10 (10.3 %)</td>
<td>24 (24.7 %)</td>
</tr>
</tbody>
</table>
j) Problems in ICT Devices’ Usage

In our contemporary world, individuals have experienced challenges with devices and novel ICTs are no exception. The culture of ownership and working with and around ICT devices often is not only limited to tales of pleasure and leisure, but also of problems and uncertainties. Adequately, respondents were questioned about problems in using some ICT devices. While 68 respondents (70.1 %) agreed that they did not have problems in using smart phones, 67 of them (69.1 %) claimed that they had problems in using tablets. Moreover, a total of 57 and 78 respondents also agreed that they had problems in using home PC and office PC respectively. The results are summarized in Table 14 and Figure 10.

Table 14: Respondents’ feedback concerning problems in using devices

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Agree</th>
<th>Rather Agree</th>
<th>Not Sure</th>
<th>Rather Disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Smart phones</td>
<td>55 (56.7 %)</td>
<td>13 (13.4 %)</td>
<td>7 (7.2 %)</td>
<td>4 (4.1 %)</td>
<td>18 (18.6 %)</td>
</tr>
<tr>
<td>ii</td>
<td>Tab/tablet/iPad</td>
<td>17 (17.5 %)</td>
<td>7 (7.2 %)</td>
<td>6 (6.2 %)</td>
<td>12 (12.4 %)</td>
<td>55 (56.7 %)</td>
</tr>
<tr>
<td>iii</td>
<td>Home PC</td>
<td>26 (26.8 %)</td>
<td>9 (9.3 %)</td>
<td>5 (5.2 %)</td>
<td>9 (9.3 %)</td>
<td>48 (49.5 %)</td>
</tr>
<tr>
<td>iv</td>
<td>Office PC</td>
<td>12 (12.4 %)</td>
<td>1 (1.0 %)</td>
<td>6 (6.2 %)</td>
<td>11 (11.3 %)</td>
<td>67 (69.1 %)</td>
</tr>
</tbody>
</table>

Figure 10: Problems in using ICT devices

k) Readiness for Online learning Using ICT Devices

Daily usage of ICT devices for non conventional purposes could sharply differ from the tendency to utilize the same devices for formal online learning. Consequently, it was apt to ascertain respondents’ readiness to learn online using certain ICT devices and facilities. The findings are illustrated in Table 15 and graphically depicted in Figure 11. The results revealed that 78 respondents (80.4 %) were ready to learn online using smart phones, while
12 of them (12.4%) weren’t ready. Subsequently, the number of respondents who were ready to learn using tablet is 33 (34.0%), which is equal to those who were unsure, while 31 were not ready to use this device. Additionally, 43 respondents (44.4%) were ready to learn online using home PC, but 50 of them (51.5%) were not ready to use Office PC for this purpose. Interestingly, only 29 respondents (29.9%) indicated their readiness to go to the Internet Centre to learn online, while 33 of them were not ready to do so (34.0%). Lastly, similar pattern could be seen in terms of the number of respondents who were willing and ready to go the cyber café for online learning purposes. In this regard, only 19 respondents agreed (19.6%), while (45.4%) disagreed.

Table 15: Respondents’ readiness for learning online using devices

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Agree</th>
<th>Rather Agree</th>
<th>Not Sure</th>
<th>Rather Disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Smart phones</td>
<td>70</td>
<td>8</td>
<td>7</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(72.2%)</td>
<td>(8.2%)</td>
<td>(7.2%)</td>
<td>(4.1%)</td>
<td>(8.2%)</td>
</tr>
<tr>
<td>ii</td>
<td>Tab/tablet/iPad</td>
<td>25</td>
<td>8</td>
<td>33</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(25.8%)</td>
<td>(8.2%)</td>
<td>(34.0%)</td>
<td>(1.0%)</td>
<td>(30.9%)</td>
</tr>
<tr>
<td>iii</td>
<td>Home PC</td>
<td>34</td>
<td>9</td>
<td>26</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(35.1%)</td>
<td>(9.3%)</td>
<td>(26.8%)</td>
<td>(3.1%)</td>
<td>(25.8%)</td>
</tr>
<tr>
<td>iv</td>
<td>Office PC</td>
<td>14</td>
<td>2</td>
<td>30</td>
<td>4</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(14.4%)</td>
<td>(2.1%)</td>
<td>(30.9%)</td>
<td>(4.1%)</td>
<td>(47.4%)</td>
</tr>
<tr>
<td>v</td>
<td>1Malaysia Internet Centre</td>
<td>21</td>
<td>8</td>
<td>35</td>
<td>4</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(21.6%)</td>
<td>(8.2%)</td>
<td>(36.1%)</td>
<td>(4.1%)</td>
<td>(29.9%)</td>
</tr>
<tr>
<td>vi</td>
<td>Cyber cafe</td>
<td>15</td>
<td>4</td>
<td>34</td>
<td>4</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(15.5%)</td>
<td>(4.1%)</td>
<td>(35.1%)</td>
<td>(4.1%)</td>
<td>(41.2%)</td>
</tr>
</tbody>
</table>

Figure 11: Readiness for online learning using ICT devices
I) Frequency of Social Media Usage and Experience

Social media usage is a widespread phenomenon of the 21st century. Thus, it is intimately linked to individuals' willingness for online sharing and collaboration which are key elements in online learning. Based on this premise, information was elicited from respondents about their frequency of social media use. Table 16 provides the summary of their responses. Almost half of the respondents (n: 47 or 48.5%) used Whatsapp very frequently, 16 of them (16.5%) used it frequently, but 21 (21.6%) never had such an experience. In terms of Facebook usage, 30 respondents (30.9%) used it very frequently. However, majority of the respondents had never used Twitter (n: 89 or 91.8%), Instagram (n: 74 or 76.3%) or blog (n: 86 or 88.7%). Relatively, a majority of them (n: 61 or 62.9%) had never used YouTube, but 17 (17.5%) reported an occasional usage.

Table 16: Respondents' frequency in using social media

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Very frequent</th>
<th>Frequent</th>
<th>Quite frequent</th>
<th>Occasionally</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Whatsapp</td>
<td>47 (48.5%)</td>
<td>16 (16.5%)</td>
<td>5 (5.2%)</td>
<td>8 (8.2%)</td>
<td>21 (21.6%)</td>
</tr>
<tr>
<td>ii</td>
<td>Facebook</td>
<td>30 (30.9%)</td>
<td>8 (8.2%)</td>
<td>9 (9.3%)</td>
<td>14 (14.4%)</td>
<td>36 (37.1%)</td>
</tr>
<tr>
<td>iii</td>
<td>Twitter</td>
<td>1 (1.0%)</td>
<td>0 (0.0%)</td>
<td>2 (2.1%)</td>
<td>5 (5.3%)</td>
<td>89 (91.8%)</td>
</tr>
<tr>
<td>iv</td>
<td>Instagram</td>
<td>4 (4.1%)</td>
<td>1 (1.0%)</td>
<td>4 (4.1%)</td>
<td>14 (14.4%)</td>
<td>74 (76.3%)</td>
</tr>
<tr>
<td>v</td>
<td>Blog</td>
<td>2 (2.1%)</td>
<td>1 (1.0%)</td>
<td>4 (4.1%)</td>
<td>4 (4.1%)</td>
<td>86 (88.7%)</td>
</tr>
<tr>
<td>vi</td>
<td>YouTube</td>
<td>12 (12.4%)</td>
<td>3 (3.1%)</td>
<td>4 (4.1%)</td>
<td>17 (17.5%)</td>
<td>61 (62.9%)</td>
</tr>
</tbody>
</table>

Following respondents' responses concerning frequency in social media usage, it became necessary to come to terms with their individual experiences regarding such usage. In view of this, respondents were asked to indicate their experiences in using the social media. A total of 70 respondents (72.2%) agreed that they felt comfortable, with 57 of them (58.8%) agreeing to the fact that they felt motivated when using the social media. The results are shown in Table 17.
Table 17: Respondents’ experience in using social media

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Agree</th>
<th>Rather Agree</th>
<th>Not Sure</th>
<th>Rather Disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>I feel comfortable when using social media</td>
<td>53</td>
<td>(54.6 %)</td>
<td>17</td>
<td>(17.5 %)</td>
<td>14</td>
</tr>
<tr>
<td>ii</td>
<td>I feel motivated when using social media</td>
<td>35</td>
<td>(36.1 %)</td>
<td>22</td>
<td>(22.7 %)</td>
<td>24</td>
</tr>
</tbody>
</table>

m) Usage of MOOC Platform for Online Learning

The designers of online courses such as MOOC, have the onus to consider learners’ behaviour in order to ensure full participation in the MOOC learning approach (Mee, Sui, Jano & Husin, 2016). Thus it is necessary to solicit potential users’ knowledge and expectations in this regard. Consequently, respondents were asked about online learning using MOOC platform. The results in Table 18 showed that a total of 60 respondents (61.9 %) reported to have never had any experience in online learning. In addition, while only 17 respondents (17.5 %) had heard about MOOC, a majority of them (62 respondents or 63.9 %) disagreed on this statement. It was fascinating to know that only 11 respondents (11.3 %) had attended courses, training or learning using MOOC platform, while majority disagreed with such statement (n: 71 or 73.2 %). Although majority of them (61 respondents or 62.9 %) were willing to take free online courses using MOOC platform, another 26 respondents (26.8 %) were not willing to do so. In relation to that, majority of the respondents (n: 59 or 60.8 %) hoped to receive certification after completing MOOC courses.

Table 18: Knowledge and expectation of MOOCs

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Agree</th>
<th>Rather Agree</th>
<th>Not Sure</th>
<th>Rather Disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>I have experienced using online learning sessions previously</td>
<td>13</td>
<td>(13.4 %)</td>
<td>9</td>
<td>(9.3 %)</td>
<td>15</td>
</tr>
<tr>
<td>ii</td>
<td>I have heard about MOOC previously</td>
<td>9</td>
<td>(9.3 %)</td>
<td>8</td>
<td>(8.2 %)</td>
<td>18</td>
</tr>
<tr>
<td>iii</td>
<td>I have attended courses, training or learning using MOOC platform before this</td>
<td>6</td>
<td>(6.2 %)</td>
<td>5</td>
<td>(5.2 %)</td>
<td>15</td>
</tr>
<tr>
<td>iv</td>
<td>I would like to learn free online courses using MOOC platform</td>
<td>50</td>
<td>(51.5 %)</td>
<td>11</td>
<td>(11.3 %)</td>
<td>9</td>
</tr>
<tr>
<td>v</td>
<td>I hope to receive certification after completing MOOC courses</td>
<td>52</td>
<td>(53.6 %)</td>
<td>7</td>
<td>(7.2 %)</td>
<td>14</td>
</tr>
</tbody>
</table>
Individual's preference for a particular mode of online learning represents an important factor to consider in online learning design. For respondents in this study, a total of 23 respondents (23.7 %) preferred to have fully online learning, while 28 of them (28.9 %) chose to have a blended learning mode. However, another 46 respondents (47.4 %) were not sure about their preference.

n) Challenges/Barriers to Online Learning

The quest to provide online learning is often beset with challenges, be it at the pre or post implementation stage. However, it is always a safeguard to know before-hand what potential online learners view as barriers against their readiness. This helps minimize (if not completely solved) implementation problems. In relation to this, respondents were asked to identify the challenges or barriers that they might encounter if they were to participate in online learning courses and the findings are shown in Table 19. A total of 47 respondents (48.5 %) claimed that time constraint was an issue. In addition, 73 respondents (75.3 %) did not think that access to smartphones, tablets or PC was the constraint in taking online courses. Also, 83 respondents or 85.6 % did not consider accessing the Internet as a constraint. Moreover, about more than half of the respondents (53 or 54.6 %) agreed that lack of skills in using technology was a barrier in learning online. However, a majority of them (n: 85 or 87.6 %) did not consider that lack of support and motivation was a constraint or barrier in learning online. Figure 12 has a graphical impression of these results.

<table>
<thead>
<tr>
<th>Challenges / barriers</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time constraint</td>
<td>47</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>(48.5 %)</td>
<td>(51.5 %)</td>
</tr>
<tr>
<td>ii</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to smartphones, tablets or PC</td>
<td>24</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>(24.7 %)</td>
<td>(75.3 %)</td>
</tr>
<tr>
<td>iii</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to Internet</td>
<td>14</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>(14.4 %)</td>
<td>(85.6 %)</td>
</tr>
<tr>
<td>iv</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of skills in using technology</td>
<td>53</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>(54.6 %)</td>
<td>(45.4 %)</td>
</tr>
<tr>
<td>v</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of support and motivation</td>
<td>12</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>(12.4 %)</td>
<td>(87.6 %)</td>
</tr>
</tbody>
</table>
Section C: Entrepreneurship Readiness

Besides investigating the single mothers’ ICT and MOOC readiness, this study also attempts to measure their entrepreneurial skills readiness. It will measure whether they are currently running a business or are entrepreneurs, or have the intent to be involved in the near future, as well as to investigate how ready they are in embarking on business or entrepreneurship endeavours.

There are five items in this section, which include their current involvement (or intention to involve) in entrepreneurship, reasons of involvement (or intention), and some items on their knowledge in and practice of business/entrepreneurship.

a) Current Business/Entrepreneurship Involvement

Based on the analysis, it was found that only 37 respondents (38.1%) are currently involved in some kind of business or entrepreneurship, while the majority of them (n: 60 or 61.9%) had no involvement in this activity. Interestingly, for those who were yet to be involved, 35 respondents (36.1%) were interested to start venturing into the business world/entrepreneurial activities.

b) Reasons for Involvement in Business/Entrepreneurship

On their reasons for involving (or intent to involve) in business/entrepreneurship, respondents alluded varied reasons. The findings are shown in Table 20. The main reason they involved in entrepreneurship/business was to obtain some extra or additional income for the family (n: 48 or 49.5%). This was followed by their reason to have a main source of income (n: 46 or 47.6%), and to obtain economic assurance for their families (N: 39 or 40.2%). In addition, while some respondents claimed the reason for involving in business was to be self-employed (n: 30 or 30.9%), other 27 respondents (27.8%) indicated that they just had interest in business and entrepreneurship. However, very few respondents declared ‘friends and family as entrepreneurs’ (n: 14 or 14.4%), ‘to occupy their free time’ (n: 12 or 12.4%), and ‘receive support from family and friends’ (n: 12 or 12.4%) as their reasons for involvement in business/entrepreneurship.
Table 20: Reasons for involvement (or intent to involve) in business & entrepreneurship

<table>
<thead>
<tr>
<th>Reasons for involvement (or intention to involve) in business</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>i To have main source of income</td>
<td>46 (47.4 %)</td>
<td>51 (52.6 %)</td>
</tr>
<tr>
<td>ii To obtain some extra/additional income</td>
<td>48 (49.5 %)</td>
<td>49 (50.5 %)</td>
</tr>
<tr>
<td>iii To obtain economic assurance for my family</td>
<td>39 (40.2 %)</td>
<td>58 (59.8 %)</td>
</tr>
<tr>
<td>iv To occupy my free time</td>
<td>12 (12.4 %)</td>
<td>85 (87.6 %)</td>
</tr>
<tr>
<td>v Receive support from my family and friends</td>
<td>12 (12.4 %)</td>
<td>85 (87.6 %)</td>
</tr>
<tr>
<td>vi My interest is in entrepreneurship</td>
<td>27 (27.8 %)</td>
<td>70 (72.2 %)</td>
</tr>
<tr>
<td>vii My family and friends are entrepreneurs</td>
<td>14 (14.4 %)</td>
<td>83 (85.6 %)</td>
</tr>
<tr>
<td>viii Want to be self-employed</td>
<td>30 (30.9 %)</td>
<td>67 (69.1 %)</td>
</tr>
</tbody>
</table>

c) Knowledge, Skills, Attitude and Practice in Entrepreneurship

Additionally, the respondents were questioned on items pertaining to their knowledge, skills, attitude and practice in entrepreneurship. There were 13 items on this dimension. Table 21 summarizes the findings of this analysis.

The results suggested that majority of the respondents had participated in courses/seminar/workshop related to entrepreneurship (n: 49 or 50.5 %). However, only 29 respondents (29.9 %) agreed that they had sufficient experience in doing business or entrepreneurship, while 41 (42.3 %) of them disagreed on this statement. It was refreshing to note that, majority of them think that they will be successful in doing business or become entrepreneurs (n: 51 or 52.6 %).

A total of 50 respondents (51.5 %) admitted that they like to compete with others in entrepreneurship, and 70 of them (72.2 %) asserted that they had the will and discipline to be entrepreneurs.

Regarding family’s financial matters, a majority of them (n: 71 or 73.2 %) planned for their family budget. Concerning the issue of working commitment as entrepreneurs, majority of them (n: 69 or 71.1 %) were aware that running a business required a lot of their time.

Moreover, majority also agreed that running a business will require more working time (n: 69 or 71.1 %). In relation to this statement, it was also found that majority of the respondents had the physical stamina in running a business (n: 66 or 68.0 %), as well as emotional
strength (n: 59 or 60.8 %). Furthermore, about half of them (n: 53 or 54.6 %) were willing to take any business-related risk.

However, in terms of financial situation, 45 respondents (46.4 %) did not agree that they had enough financial resources to run their businesses. However, majority of the respondents (n: 53 or 54.6 %) agreed that they had social support to run their businesses. Finally, majority of the participants (n: 64 or 66.0 %) agreed that continuous education in entrepreneurship was important for them.

Table 21: Respondents’ knowledge, skills, attitude and practice in entrepreneurship

<table>
<thead>
<tr>
<th>Statement</th>
<th>Agree</th>
<th>Rather Agree</th>
<th>Not Sure</th>
<th>Rather Disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>i I have experienced in joining courses/seminar/workshop related to entrepreneurship</td>
<td>36 (37.1 %)</td>
<td>13 (13.4 %)</td>
<td>19 (19.6 %)</td>
<td>5 (5.2 %)</td>
<td>24 (24.7 %)</td>
</tr>
<tr>
<td>ii I have sufficient experience in entrepreneurship</td>
<td>13 (13.4 %)</td>
<td>16 (16.5 %)</td>
<td>27 (27.8 %)</td>
<td>12 (12.4 %)</td>
<td>29 (29.9 %)</td>
</tr>
<tr>
<td>iii I think that I can be successful in entrepreneurship / business</td>
<td>31 (32.0 %)</td>
<td>20 (20.6 %)</td>
<td>30 (30.9 %)</td>
<td>4 (4.1 %)</td>
<td>12 (12.4 %)</td>
</tr>
<tr>
<td>iv I like to compete with others in business / entrepreneurship</td>
<td>34 (35.1 %)</td>
<td>16 (16.5 %)</td>
<td>26 (26.8 %)</td>
<td>2 (2.1 %)</td>
<td>19 (19.5 %)</td>
</tr>
<tr>
<td>v I have the will and discipline to be an entrepreneur / businessman</td>
<td>44 (45.5 %)</td>
<td>26 (26.8 %)</td>
<td>12 (12.4 %)</td>
<td>6 (6.2 %)</td>
<td>9 (9.3 %)</td>
</tr>
<tr>
<td>vi I plan my family budget</td>
<td>51 (52.6 %)</td>
<td>20 (20.6 %)</td>
<td>15 (15.5 %)</td>
<td>3 (3.1 %)</td>
<td>8 (8.2 %)</td>
</tr>
<tr>
<td>vii I am aware that running a business will require more working time</td>
<td>48 (49.5 %)</td>
<td>21 (21.6 %)</td>
<td>13 (13.4 %)</td>
<td>8 (8.2 %)</td>
<td>7 (7.2 %)</td>
</tr>
<tr>
<td>viii I have a physical stamina to go through the workload and business schedule</td>
<td>42 (43.3 %)</td>
<td>24 (24.7 %)</td>
<td>11 (11.3 %)</td>
<td>10 (10.3 %)</td>
<td>10 (10.3 %)</td>
</tr>
</tbody>
</table>
d) Perceived Importance of Main Entrepreneurial and Business Skills

In connection with the importance attributed to some main entrepreneurial and business skills, respondents’ perceptions were sought. The findings can be found in Table 22.

Overall, for each skill, it was found that more than 75% of the respondents perceived it as important (combination of ‘very important’ and ‘important’ results) in running a business or involved in entrepreneurship. For example, 85.6% of them (n: 83) perceived that identifying potential clients is important in business, while only 76.3% (n: 74) perceived the importance of possessing business communication skill as well as understanding business rules and regulation.

Majority of the respondents felt that making a financial plan was the utmost important skill in entrepreneurship (53.6% agreement), followed by preparing a simple business account (50.5%). Then, the next important skills were: identifying potential clients and seeking advice from relevant parties (both 49.5%), making a business plan (48.5%), as well as understanding business rules and regulations (47.4%). Meanwhile, studying business opportunity, potential competitors, and possessing business communication skills were the three least skills identified as very important among the respondents, with each skill recording 45.4% agreement.

In addition, almost all 97 respondents disagreed that these nine skills were not important for them (‘Not important’ or ‘Not important at all’). Based on the findings, the number of respondents who disagreed were only between two to six individuals for all the nine skills. However, some of them are not sure about the importance of those entrepreneurial skills. For example, 21.6% (n: 20) were not sure whether possessing business communication skills was an important aspect, while 19.6% (n: 19) were not sure about the importance of seeking advice from relevant parties.

<table>
<thead>
<tr>
<th></th>
<th>I have the emotional strength to deal effectively with business</th>
<th>38 (39.2%)</th>
<th>21 (21.6%)</th>
<th>18 (18.6%)</th>
<th>12 (12.4%)</th>
<th>8 (8.2%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>x</td>
<td>I am willing to take any business-related risk</td>
<td>38 (39.2%)</td>
<td>15 (15.5%)</td>
<td>20 (20.6%)</td>
<td>10 (10.3%)</td>
<td>14 (14.4%)</td>
</tr>
<tr>
<td>xi</td>
<td>I have enough financial resources to run my business</td>
<td>11 (11.3%)</td>
<td>7 (7.2%)</td>
<td>34 (35.1%)</td>
<td>19 (19.6%)</td>
<td>26 (26.8%)</td>
</tr>
<tr>
<td>xii</td>
<td>I have social support (from my family, society, friends) to run a business</td>
<td>34 (35.1%)</td>
<td>19 (19.6%)</td>
<td>25 (25.8%)</td>
<td>8 (8.2%)</td>
<td>11 (11.3%)</td>
</tr>
<tr>
<td>xiii</td>
<td>Continuous education in entrepreneurship is important for me</td>
<td>46 (47.4%)</td>
<td>18 (18.6%)</td>
<td>19 (19.6%)</td>
<td>4 (4.1%)</td>
<td>10 (10.3%)</td>
</tr>
</tbody>
</table>
Table 22: Respondents' perceived importance of entrepreneurial skills

<table>
<thead>
<tr>
<th>Skill</th>
<th>Very Important</th>
<th>Important</th>
<th>Not Sure</th>
<th>Not Important</th>
<th>Not Important At All</th>
</tr>
</thead>
<tbody>
<tr>
<td>i Study business opportunity</td>
<td>44 (45.4 %)</td>
<td>37 (38.2 %)</td>
<td>13 (13.4 %)</td>
<td>1 (1.0 %)</td>
<td>2 (2.1 %)</td>
</tr>
<tr>
<td>ii Identify potential clients</td>
<td>48 (49.5 %)</td>
<td>35 (36.1 %)</td>
<td>12 (12.4 %)</td>
<td>1 (1.0 %)</td>
<td>1 (1.0 %)</td>
</tr>
<tr>
<td>iii Study potential competitors</td>
<td>44 (45.4 %)</td>
<td>32 (33.0 %)</td>
<td>16 (16.5 %)</td>
<td>3 (3.1 %)</td>
<td>2 (2.1 %)</td>
</tr>
<tr>
<td>iv Make a business plan</td>
<td>47 (48.5 %)</td>
<td>33 (34.0 %)</td>
<td>13 (13.4 %)</td>
<td>2 (2.1 %)</td>
<td>2 (2.1 %)</td>
</tr>
<tr>
<td>v Make a financial plan</td>
<td>52 (53.6 %)</td>
<td>31 (32.0 %)</td>
<td>8 (8.2 %)</td>
<td>4 (4.1 %)</td>
<td>2 (2.1 %)</td>
</tr>
<tr>
<td>vi Prepare simple business account</td>
<td>49 (50.5 %)</td>
<td>31 (32.0 %)</td>
<td>13 (13.4 %)</td>
<td>0 (0.0 %)</td>
<td>4 (4.1 %)</td>
</tr>
<tr>
<td>vii Possess business communication skills</td>
<td>44 (45.4 %)</td>
<td>30 (30.9 %)</td>
<td>20 (20.6 %)</td>
<td>0 (0.0 %)</td>
<td>3 (3.1 %)</td>
</tr>
<tr>
<td>viii Understand business rules and regulations</td>
<td>46 (47.4 %)</td>
<td>28 (28.9 %)</td>
<td>21 (2 %)</td>
<td>0 (0.0 %)</td>
<td>2 (2.1 %)</td>
</tr>
<tr>
<td>ix Seek business advice from relevant parties</td>
<td>48 (49.5 %)</td>
<td>27 (27.8 %)</td>
<td>19 (19.6 %)</td>
<td>1 (1.0 %)</td>
<td>2 (2.1 %)</td>
</tr>
</tbody>
</table>
The graphical illustration of individual perception of important entrepreneurial and business skills is shown in Figure 13.

![Figure 13: Respondents' perceived importance of entrepreneurial skills](image)

**Note:**

A: Study business opportunity  
B: Identify potential clients  
C: Study potential competitors  
D: Make a business plan  
E: Make a financial plan  
F: Prepare simple business account  
G: Possess business communication skills  
H: Understand business rules and regulations  
I: Seek advice on business from relevant parties

Finally, the respondents were also asked to name any skills that they possess, that could potentially be turned into a business venture. The findings were:

I. catering (21 respondents);  
II. sewing (19 respondents);  
III. baking cake, cookies and delicacies (12 respondents);  
IV. operating a spa (2 respondents);  
V. decorating flowers (2 respondents); and  
VI. running cosmetic business (2 respondents).

### 4.1.3.2 Qualitative Data Findings

In addition to the quantitative data, the study was also conducted to collect a qualitative data component, which was done through focus group discussion (FGD). In this study, two FGDs were conducted to obtain data in order to support the quantitative findings. Similar to the quantitative approach, these FGDs were carried out to obtain the single mothers’ MOOC readiness as well as their online entrepreneurial skills’ training readiness.

Four respondents from a public higher learning institution in Malaysia and five others from Penang’s Single Mothers’ Association volunteered to participate in the FGD. The summary of their demographics are shown in Appendix C and Appendix D respectively.
4.1.3.2.1 MOOC Readiness

The first aspect which participants were questioned on was about their MOOC readiness. Aspects of MOOC readiness inquired from them included: technology and Internet access, ICT skills, online skills, motivation, and MOOC awareness.

**Technology Access and Internet Access**

For the single mothers from USM, all of them had access to computers as their workplaces have provided computers and all of them owned personal email accounts. However, only two of them had access to mobile devices such as smartphones while the other two had only mobile phones. In terms of access to the Internet, none have Internet connection at home. For those who did not have smartphones, they accessed the Internet from their offices. Although, there are cyber-cafes around their residence, they never used those services.

**ICT Skills**

In general, majority of the respondents from FGD groups had basic knowledge and skill in using computers such as using email and search engine (Google). Except two respondents from USM, the rest of the respondents owned smartphones and were more advanced in terms of using basic computer applications such as MSWord and Excel and other simple software. They basically had sufficient knowledge about computer as most of them were connected to social media such as Facebook, Whatsapp and had their own email account. Among the three social media platforms, Facebook seemed to be the most popular choice. They used Facebook mostly for business purposes - marketing and business promotion.

**Online Skills**

The two respondents from USM who had access to Internet data plan, were also keen users of social media particularly Whatsapp, Facebook and sometimes blog. They were very familiar with search engine such as Google to look for information. In fact, ‘Google’ was the main important thing in their lives as they were aware that information could be easily retrieved from ‘googling’. The other two respondents, who did not have data plan, sometimes sought assistance from their children to find information for them. Faz, one of the respondents from USM said, ‘...I am more comfortable to get knowledge/information from my mobile phone’.

**Motivation**

Based on the discussion, those respondents who had data plan admitted that they were motivated in using computer and mobile devices in their daily life, particularly to update their business activities. Facebook is considered to be the most practical and easiest way to upload information about their business activities and to market their products while Whatsapp is used to build network with other entrepreneurs and to share important information. According to Normah, 55, she is not young but she needs to keep up with the technology as well. She said, ‘...I am not young but if I have to learn (to get the skills) then I will learn and get new smartphone’.

All of the respondents showed high degrees of motivation and were determined about their future lives as they have gone through years of challenges and struggles in their marriage lives. Only one respondent from USM seemed to have lack of confidence - as she was seen to be scared of using technology.

**MOOC awareness, Experience and Expectation**

All of the respondents from USM were fully aware about online learning but never heard of MOOC. However, when explained about the proposed MOOC project, most of the
respondents were motivated and excited on the potential of being selected to participate in this MOOC project. All of them were quite confident that the participation in MOOC project will boost not only their entrepreneurial skills, but also to be able to polish their other skills and also to be able to expand their business networking and join the support group. One respondent who is an active online business entrepreneur, Faz, 33, preferred online learning rather than attending classes. She narrated,

…I think we need to search for knowledge and now what you need is just one click away, to obtain information that you want. I think it is okay (to participate in online learning). I am not that keen to attend classes as I have time constraint..I have to leave the kids with my mum who is staying on the mainland…pity her as my son is quite active.

Another respondent, Ina, 34 years old also agreed to the fact that,

...(online learning) is good as we can enhance our knowledge. We are living in an IT world and we need to know the function of Facebook etc. This online learning is like our own PJJ (School of Distance Education) that we don’t need to attend class but I can access anywhere, anytime.

As an experienced business woman, Amy stressed the importance of knowledge and she was of the opinion that online learning would be a new option for single mothers. She said,

…Without knowledge, we can never be a successful entrepreneur. But, as a woman entrepreneur, we don’t have time to attend classes. Online learning is convenient [for us] as we can take our own sweet time [to] be online. When we free, we’ll do it.

As for Mila who owns a publishing company, she admitted that she often goes online to watch tutorial on how to design online,

…the technology grows so fast and I have to keep myself updated. Searching knowledge online is the easiest way to learn new technology.

All respondents shared the same view that the best time to access online learning is during weekends or at night after their children were already in bed.

Asked about their opinions on the type of learning, all of the respondents seemed to agree that it should be 'blended' learning instead of fully online. Although it is online learning, the respondents argued that single mothers have different levels of motivation and different experiences in terms of life experiences and business experiences. Therefore, having one or two sessions that involved ‘face-to-face’ interaction throughout the learning will create a sense of belonging and will act as support for each other. Support group needs to be established before the program starts and it was suggested that someone (an officer from the organizers) should be in charged in monitoring the performance of the students. The person could also act as a mentor to the group. They suggested that, the group could be connected through Whatsapp. All respondents had the view that the participants should not be left alone to do the online learning as this could lead to cases of dropout. The support will act as a buffer zone and at the same time will be able to reduce the dropout rate. Respondents from Single Mothers’ Association seem to have more experience in online learning since many of them had taken short courses that related to their businesses.
4.1.3.2.2 Entrepreneurship Readiness

General

Almost all of the respondents had basic entrepreneurship skills and were currently running their own businesses with a few of them being 'starters' in small business activities. Different methods of marketing has been used - from word of mouth, to their circle of colleagues, relatives and friends and then using technological devices and applications such as Whatsapp, Instagram and Facebook. In general, all respondents interviewed, expressed high levels of readiness to embark on online business or to expand their existing online businesses. Respondents from Single Mothers' Association seemed to have more experience in businesses as some of them produced their own products and owned registered companies. Two of the respondents had registered companies that sold health products and homemade coffee and tea powder.

Two of the respondents were already in the small scale businesses while one indicated she will continue generating income through teaching Quran. Another respondent needed to hold her business desire as she was trying to complete her undergraduate study soon. In terms of support, all of the respondents agreed to the fact that family and friends were their strong supporters in realizing their business dreams. The most important things; majority of them were fully aware of the basic skills that are needed to guarantee their success in their business venture although they were yet to acquire those skills. For them, their main focus in life now is to generate more income for the family. When asked what would be their main needs now, all of them mentioned, '... more RM (money)'. They narrated how money is everything in their lives at the moment, as they needed to pay for their children's education, medical bill and household expenditure. They could not depend solely on their salary and the easiest avenue to generate additional income was through small businesses. Majority of the respondents claimed that they did not get any support from their former husbands. Some did get a small amount of maintenance money (nafkah) but majority of them said, '...not a single cent from him (former husband) and he doesn't even care, either to call or to give money to their children.'

Personal Characteristics

During the first year after divorce or after being abandoned by their husbands, all of the respondents described themselves as 'so so down', lack of willpower even to live and they could not even make a rational decision. There was no one to turn to for advice or help. It took more than two years for them to be finally able to pull themselves up and to start thinking about their future lives. Now, majority expressed their lives as more peaceful, more confident and have more strength to start or to expand their businesses. During the FGD, they expressed their blessings for being called to participate in this interview and suggested that this group should be formed to create a single mother's group of USM staff. Meeting with other single mothers and shared life struggles, made them realized that they were not alone in facing the challenges ahead. They expressed their excitement to participate in this MOOC project organized by KANITA.

Personal Conditions

When asked about the long hours of work required to run a business throughout the week, the respondents admitted that being single mothers will require them to be ‘fast, alert and multitask’. However, majority of them shared the same view that their main challenges were to balance between taking care of children, doing business and to work full time (for USM single mothers). They said that exhaustion is a normal thing and therefore they know that they have to master the skill to effectively deal with their emotional pressure. Majority of
them viewed themselves as strong persons because, as they argued, the constant challenges and struggles that they had to face right after their divorce until today had turned them into what they are today.

4.1.3.3 Summary

This mixed method study on the single mothers’ readiness on MOOC and entrepreneurial skills have revealed interesting and encouraging findings.

1. The single mothers who are interested to participate in the proposed MOOCs program are non-professionals and non-degree holders, with a monthly income of less than USD920.
2. More than half of them own or could access smartphones, indicating a possibility for them to participate in online learning. Another 35% of them have access to other form of ICT devices including tablet and PC (home and office) which also indicated the possible access to the Internet for online learning. The majority also did not have problem in using smartphones.
3. Home was identified as the most common location to access the Internet, and followed by their office. In addition, about half of them accessed the Internet on a daily basis, which again indicates the positive possibility for them to participate in online learning.
4. More than half of the participants knew how to use the Internet browsers, however, slightly less than half knew how to use search engines, and owned email accounts. In addition, majority of them used the Internet to seek information and to communicate. However, only a quarter used it for learning purposes.
5. About 80% of the respondents claimed that they have other individuals whom they can ask for help in using the Internet, and these include their own kids and friends.
6. About 80% of the respondents admitted to be ready to participate in free online courses, while almost 50% are willing to spend some money to learn certain online courses. More than 80% are ready to learn online using smartphones, while about 45% are ready to use home PC for similar purpose.
7. The frequency of social media use among the respondents varied. About 65% often used whatsapp, and about 30% used Facebook frequently. In addition, majority of them (72%) felt comfortable in using social media, and were motivated by it.
8. More than 60% of the respondents never had any experience in online learning. Furthermore, they had no previous knowledge about MOOC prior to this study. In addition, majority of them (60%) are willing to learn online courses using MOOC platform, and the same percentage of respondents hope to receive some certification after completing these MOOC courses. From the interview, the participants are motivated to be involved in online learning, especially in learning about business or entrepreneurial skills.
9. The respondents had mixed preference for the learning approaches. A quarter of them preferring fully online learning, while about 30% choosen blended learning and the rest were unsure. However, based on the interview, the interviewees preferred a blended learning approach, as the face-to-face sessions will provide a sense of belonging and support among themselves.
10. The respondents claimed that lack of skills in using technology and time constraints were two main barriers for them to participate in online learning. From the interview, it is obvious that balancing between work, taking care of children and doing business is the main challenge for them.
11. About 40% of the respondents are currently involved in some kind of business, and 36% of those who are not involved, are interested to venture in business. The main
reasons for their involvement are to obtain some additional income and economic assurance as they are the sole breadwinners for the family. From the interviews, they claim to venture into business – albeit small scale – to generate income for the family.

12. In terms of attitude, half of the respondents think that they will be successful in doing business, and they like to compete with others. About three quarters of them reported to have the will and discipline to be entrepreneurs.

13. Although they may have social support, majority lamented that they did not have enough financial resources to run a business. Interestingly, majority agreed that continuous education in entrepreneurship was important. As such, they appreciate the idea of offering entrepreneurship courses through MOOC platform.

14. More than three quarters of the respondents agreed that business skills such as making financial plan, preparing business account, identifying clients and potential competitors, as well as business communication skills are important skills in doing business.

4.1.4 References


4.2 Indonesia

4.2.1 Introduction
The target group for the project involves people living in these two locations:

- Remote areas in North Sulawesi province
- Coastal communities in the southern part of East Java Province

Individuals from each communities have been selected as the target learners to learn about entrepreneurship using a MOOC platform. A study has been conducted to better understand the characteristics of these coastal communities.

4.2.2 Research Methodology
The target community for the study are local residents at Tambakrejo, Sumbermanjing Wetan District, Malang Regency. Out of the 100 respondents surveyed, nearly 60% are in the productive age, predominantly from 21-40 years old. All of them reside in the village and only one respondent reside in the city area.

4.2.3 Findings

4.2.3.1 Demographic Information
The education background of this community is up to Senior High School, with 40% of the respondents having completed only Junior High School education. Most of the community are fishermen who are heavily dependent on the weather and conditions of the sea to fulfill their daily catches.

The monthly income of the respondents ranges from 1 to 3 million Rupiah, while the average is about 1.5 million Rupiah.

4.2.3.2 Computer Skills, Internet Usage, and Online Skills

4.2.3.2.1 Device Ownership
Almost 100% of the respondents have mobile phones. About 65% of them have smartphone-type devices. However, a majority of 85% do not have tablets and computers and do not have access to such equipment. Nonetheless many of them are able to use computer rental services if they need access to a computer.

4.2.3.2.2 Internet Usage
Fortunately, they are still able to access the internet. More than 50% have internet access from their home. This indicated that the access is obtained from local providers, via mobile data packets (a prepaid data service).

Most of them access the internet daily, while less than 3% of them access it once a week. Most of the Internet usage involve accessing social media and keeping up with the daily news. They admitted that the level of their skill in accessing and using the Internet was poor. A majority use the Internet to search for information by just opening a search engine application such as Google or another search engine. Email accounts are owned by only 40 respondents but they rarely access their email accounts.
4.2.3.2.3 Online Skills

About 50% of them encounter difficulty in accessing the menus on their smartphones. Fortunately, respondents who own tablets or phones with larger screen sizes are able to navigate the menus reasonably well.

Most of the respondents acquire their technology and Internet skills from their sons and daughters. Hence, they are able to handle devices with moderate complexity such as using computers, handphones, and tablets.

4.2.3.3 Awareness of and Experience in Taking Massive Open Online Courses

The study revealed that the respondents are eager to acquire new knowledge to increase their quality of life via online courses or online training. Smartphones are their choice platform for accessing online content. Only a few people choose tablet as the preferred tool for taking online courses. Moreover, computers are not an option for most of them since computer ownership is extremely low and they are not keen to use computer rental services.

In term of accessing the course modules, they don't want to use their metered mobile data services. The respondents mostly use their metered mobile data for accessing social media services such as Facebook and Whatsapp, while Youtube is their second preferred service option.

For most respondents, online courses are not unknown for them. Even though they refused to take non-free courses, they are still willing to learn new skills and will consider free online courses. They also expect to get a certificate after attending an online course. Consequently, freely accessible MOOC modules are the best approach for engaging the target learners.

4.2.3.4 Learner readiness

Most respondents are fishermen who are not running a formal business. They are temporary workers who would usually be termed as self-employed. Therefore more than 75% of them are keen to follow any courses which have the potential to help them run their businesses better, for the possibility of generating new income and for improving their family welfare. Hence, they are keen to enroll in any course or training modules related to entrepreneurship. They also claim to have high spirits, discipline and good emotional quality in order to be successful in their business.

If the course will be provided, they will choose the course materials related to business opportunities, business planning, customer recognition, competitor recognition, and communication skills.
4.3 Philippines

4.3.1 Introduction

This section discusses the results of the Philippine Survey on Learners’ Readiness for Massive Open Online Courses (MOOCs) conducted among the target stakeholders and beneficiaries of the Philippine Team for the Competen-SEA Project—the rural health workers of Pangasinan.

By way of a background, the Philippine Team—comprising the Ateneo de Manila University and the University of the Philippines—entered into a partnership with the Pangasinan Provincial Health Office (PHO) for the co-creation and co-management of a MOOC on Local Health Systems, with employees of the Pangasinan PHO as the intended participants and beneficiaries. For this, a Memorandum of Understanding (MOU) was executed among the Ateneo de Manila, the University of the Philippines, and the Pangasinan PHO.

To be able to design a MOOC that would be responsive to the realities and needs of the Pangasinan rural health workers, the Philippine Team, in consultation with the leadership of the Pangasinan PHO, developed a Survey Questionnaire on Learners’ Readiness for Massive Open Online Courses.

4.3.2 Research Methodology

4.3.2.1 Population and sampling

An estimated 20,000 rural health workers in the province of Pangasinan serving in some 48 local government units (LGUs) comprised the target population for the Survey on Learners’ Readiness for Massive Open Online Courses (MOOCs) conducted by the Ateneo de Manila University and the University of the Philippines, in collaboration with the Pangasinan Provincial Health Office.

A total of 114 rural health workers from Pangasinan—or almost 6 percent of the target population of 2,000—answered the survey questionnaire. A combination of purposive sampling and convenience sampling was used: Hard copies of the self-administered survey questionnaire were given by the Philippine Competen-SEA Team to the Office of the Provincial Health Officer of Pangasinan, with the request that these questionnaires be distributed among the different types of health workers of the province—doctors, nurses, midwives, administrative aides, barangay health workers, barangay nutrition scholars, among others. For its part, the Office of the Provincial Health Officer of Pangasinan distributed the questionnaires to those who were available and willing to answer the questionnaire; in so doing, it did its best to ensure that the various types of health workers were included in the survey sample.

The duration of the survey research was almost two weeks (12 days), from September 11 to September 22, 2017. Forty-five (45) self-administered questionnaires were accomplished and returned to the Philippine Competen-SEA team on September 11 when it went to Pangasinan on that day for a meeting with the Provincial Health Officer of Pangasinan and her team. An additional 72 accomplished questionnaires were retrieved by the Pangasinan PHO and sent by postal mail to the Competen-SEA team in Manila on September 22. Of the 72 questionnaires mailed, three questionnaires did not have answers for the sections on Internet use and MOOCs and therefore were not included in the survey’s base of
respondents. Thus, the final total number of respondents or sample size is 114 (45 initial respondents plus 69 additional respondents).

4.3.2.2 Research Instruments

The self-administered survey questionnaire had three main sections to elicit respondent data on the following:

A. Demographic Information (6 questions)
B. Computer Skills, Internet Usage, and Online Skills (6 questions)
C. Awareness of and Experience in Taking Massive Open Online Courses (12 questions)

In addition to the 24 questions distributed across the three main sections, a final and optional question asked the name and contact details of the respondent in case s/he would be interested to participate in the MOOC on Local Health Systems.

The following sources were consulted in the formulation of the self-administered survey questionnaire: (1) The Advancing MOOCs for Development Initiative: An Examination of MOOC Usage for Professional Workforce Development Outcomes in Colombia, the Philippines, and South Africa by Maria Garrido and Lucas Koepke et al. (2016); (2) “The MOOC Phenomenon: Who Takes Massive Open Online Courses and Why? Working Paper” by G. Christensen and A. Steinmetz et al. (2013); and (3) MOOC Readiness Survey Questionnaire for undergraduate and graduate students of Malaysian universities (n.d.).

4.3.3 Findings

4.3.3.1 Demographic Information

Based on the replies of 114 survey respondents, a typical or average rural health worker in Pangasinan who answered the Philippine Competen-SEA Team’s Survey on Learners’ Readiness for massive open online courses (MOOCs) was likely to be female, 39 years old, married, and with a baccalaureate (college) degree.

Four in five of the respondents (82%; n=94) are female, and one in five (18%; n=20) is male. Their ages range from 22 to 62, with the mean/average age at 39, and the median age at 38. Nearly one in two respondents (48%; n=55) is currently married, two in five (39%; n=45) are single/have never married, and 7 percent (n=8) are widowed (see Table 23).

<table>
<thead>
<tr>
<th>Civil Status</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently married</td>
<td>55</td>
<td>48 %</td>
</tr>
<tr>
<td>Single/Never married</td>
<td>45</td>
<td>39 %</td>
</tr>
<tr>
<td>Widowed</td>
<td>8</td>
<td>7 %</td>
</tr>
<tr>
<td>Separated/Annulled/Divorced</td>
<td>3</td>
<td>3 %</td>
</tr>
<tr>
<td>Other (not specified)</td>
<td>1</td>
<td>1 %</td>
</tr>
<tr>
<td>Did not indicate civil status</td>
<td>2</td>
<td>2 %</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>114</strong></td>
<td><strong>100 %</strong></td>
</tr>
</tbody>
</table>

Base: 114 Pangasinan rural health workers who answered the September 2017 Survey on Learners’ Readiness for MOOCs
The majority of the respondents (56 %; n=65) indicated, as their highest educational attainment, the completion of a baccalaureate (college) degree such as Bachelor of Science in Nursing. For 15 percent (n=17) of the respondents who include barangay health workers, their highest educational attainment is the completion of secondary/high School (see Table 24).

Table 24: Distribution of respondents by highest educational attainment

<table>
<thead>
<tr>
<th>Highest educational attainment</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed a baccalaureate (college) degree</td>
<td>64</td>
<td>56 %</td>
</tr>
<tr>
<td>Completed secondary/high school</td>
<td>17</td>
<td>15%</td>
</tr>
<tr>
<td>Completed a master’s degree (MA, MS)</td>
<td>5</td>
<td>4%</td>
</tr>
<tr>
<td>Some years in a vocational/technical course</td>
<td>5</td>
<td>4%</td>
</tr>
<tr>
<td>Some units leading to a master’s degree (w MA or MS units)</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Completed a vocational/technical course</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Some years in college</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Some years in secondary/high school</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Completed a medical degree (MD)</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Completed primary/elementary school</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Some years in a medical degree (no medical licensure exam/license)</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Some years in primary/elementary school</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Some units leading to a doctoral degree (w/ PhD units)</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Completed a doctoral (PhD) degree</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>No answer / Did not indicate highest educational attainment</td>
<td>5</td>
<td>4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>114</strong></td>
<td><strong>101%</strong></td>
</tr>
</tbody>
</table>

Base: 114 Pangasinan rural health workers who answered the September 2017 Survey on Learners’ Readiness for MOOCs

In terms of occupation, one in three respondents is a nurse (32 %; 37 of 114), one in four is a barangay health worker (26 %; 30 of 114), and one in five is an administrative aide (19 %; 22 of 114). These three occupations comprised 78 percent (n=89) of the occupations of the 114 respondents. Others reported being doctors, midwives, barangay nutrition scholars, among other occupations.
In terms of the rural health worker-respondents’ number of years of service with the Pangasinan Provincial Health Office, the range is very wide, at six months to 40 years.

4.3.3.2 Computer Skills, Internet Usage, and Online Skills

To the question “Do you know how to use computers?”, 72 percent (n=82) of the 114 survey respondents answered, “yes” whereas the remaining 28 percent (n=32) said “no” (see Table 25).

Table 25: Distribution of respondents by knowledge of how to use computers

<table>
<thead>
<tr>
<th>Knowledge of how to use computers</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>82</td>
<td>72 %</td>
</tr>
<tr>
<td>No</td>
<td>32</td>
<td>28 %</td>
</tr>
<tr>
<td>Total</td>
<td>114</td>
<td>100 %</td>
</tr>
</tbody>
</table>

Base: 114 Pangasinan rural health workers who answered the September 2017 Survey on Learners’ Readiness for MOOCs

4.3.3.2.1 Profile of respondents who do not know how to use computers

The mean/average age of respondents who do not know how to use computers is 49, with the median age at 50. Comparing these figures with the mean/average age and the median age of those who know how to use computers—at 34 and 30, respectively—it is evident that those who do not know how to use computers tend to be much older (by at least 15 years) than those who do.

Table 26 below shows that of the 32 who reported that they do not know how to use computers, 72 percent (n = 23) are barangay health workers (BHWs). It is important to note that even though three out of four (77%; 23 of 30) BHW-respondents do not know how to use computers, they undertake many vital health care functions for communities. According to Republic Act 7883 (the “Barangay Health Workers’ Benefits and Incentives Act of 1995”), a barangay health worker is a “person who has undergone training programs under any accredited government and non-government organization and who voluntarily render primarily health care services in the community….” A category of health care workers in the Philippines, barangay health workers (BHWs) perform crucial roles for communities in the areas of family planning and reproductive health; and maternal, newborn and child health. They do household visits to provide health information to families, motivate couples to attend family planning seminars, remind pregnant women to attend their prenatal checkups, administer immunizations and weigh children, among other services.
Table 26: Distribution of respondents who do not know how to use computers by occupation

**Question:** Do you know how to use computers?

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barangay health workers</td>
<td>23</td>
<td>72 %</td>
</tr>
<tr>
<td>Barangay nutrition scholars</td>
<td>2</td>
<td>6.25 %</td>
</tr>
<tr>
<td>Rural health midwives</td>
<td>2</td>
<td>6.25 %</td>
</tr>
<tr>
<td>Administrative aides</td>
<td>2</td>
<td>6.25 %</td>
</tr>
<tr>
<td>Nurse</td>
<td>1</td>
<td>3 %</td>
</tr>
<tr>
<td>No answer / Did not mention occupation</td>
<td>2</td>
<td>6.25 %</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32</strong></td>
<td><strong>100 %</strong></td>
</tr>
</tbody>
</table>

*Base:* 32 respondents who do not know how to use computers

*Source:* September 2017 Survey on Learners’ Readiness for MOOCs answered by Pangasinan rural health workers

The remaining nine (28 %) of the 32 survey respondents who do not know how to use computers are 2 rural health midwives (6 %), 2 barangay nutrition scholars (6 %), 2 administrative aides (6 %), and one nurse (3 %). Two respondents (6 %) who mentioned that they do not know how to use computers did not indicate their occupation in the Provincial Health Office of Pangasinan (see Table 26 above).

**Corollary,** all 32 respondents who do not know how to use computers also do not know how to use Microsoft (MS) Office applications such as MS Word, MS Excel, and MS PowerPoint (n=0).

Notwithstanding the above, 14 of the 32 respondents (44 %) who do not know how to use computers are able to engage in some activity/activities on the Internet, by using either their smart phone (n=8) or their tablet (n=2) that has mobile data. Table 27 below indicates the Internet activities of respondents who do not know how to use computers but who are nevertheless able to: use social media sites like Facebook (9 of 32; 28 %); use the Internet to make phone calls (4 of 32; 12.5 %); post messages to chat rooms, newsgroups, or online discussions (3 of 32; 9 %); use a search engine like Google to find information (1 of 32; 3 %); or upload self-created content (text, photo, music, videos, software, etc.) – because they have mobile data on either their smart phone or tablet. For the rest of the 32 respondents who do not know how to use computers—numbering 18, or 56 percent—they do not engage in any Internet activity (see Table 27).
Table 27: Distribution of respondents who do not know how to use computers by what they are able to do using the Internet

**Question:** Which of the following are you able to do using the Internet? *(Choose all that apply)*

<table>
<thead>
<tr>
<th>What a respondent is able to do using the Internet</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>None / Does not use the Internet</td>
<td>18</td>
<td>56 %</td>
</tr>
<tr>
<td>Use social media sites (Facebook, Twitter, Instagram, Flickr, etc.)</td>
<td>9</td>
<td>28 %</td>
</tr>
<tr>
<td>Use the Internet to make telephone calls</td>
<td>4</td>
<td>12.5 %</td>
</tr>
<tr>
<td>Post messages to chat rooms, newsgroups, or online discussions</td>
<td>3</td>
<td>9 %</td>
</tr>
<tr>
<td>Use a search engine to find information (e.g., Google)</td>
<td>1</td>
<td>3 %</td>
</tr>
<tr>
<td>Upload self-created content (text, photo, music, videos, software, etc.)</td>
<td>1</td>
<td>3 %</td>
</tr>
<tr>
<td>Send e-mails and attached files (documents, pictures, etc.)</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>Create a webpage</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>Search and shop for goods and services online</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>Use Internet banking</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>Use e-government services</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>Use services related to travel or travel-related accommodation</td>
<td>0</td>
<td>0 %</td>
</tr>
</tbody>
</table>

**Base:** 32 respondents who do not know how to use computers

**Note:** Multiple responses were allowed for the 14 respondents who are able to use the Internet for some purpose(s) despite their not knowing how to use computers. Thus, the sum of their frequency distribution exceeds 14, and the sum of their percentage distribution exceeds 100 percent.

**Source:** September 2017 Survey on Learners’ Readiness for MOOCs answered by Pangasinan rural health workers

### 4.3.3.2.2 Profile of respondents who know how to use computers

Seven in ten (72 %; 82 of 114) Pangasinan rural health workers who answered the Learners’ Readiness for MOOCs Survey said that they know how to use computers. Rural health worker-respondents who are millennials—or who were born between 1982 and 2004—were more likely to mention that they know how to use computers. As reported earlier, the mean/average age of respondents who know how to use computers is 34 (born in 1983), with the median age at 30 (born in 1987). In contrast, the respondents who said that they do not know how to use computers belong to an earlier generation born in the mid-1960s to the early 1980s, and referred to as generation X. To recall, the mean/average age of respondents who do not know how to use computers is 49 (born in 1968), with the median age at 50 (born in 1967).
Aside from age, one’s highest educational attainment is also positively associated with knowing how to use computers. Of the 82 survey respondents who answered that they know how to use computers, the highest educational attainment for 90 percent of them (n=74) is either a baccalaureate (college) degree (76 %; n=62), or having some units leading to a master’s degree (6 %; n=5), or completing a master’s degree (5 %; n=4), or having some years in a medical degree but with no medical licensure exam and no medical license (1 %; n=1), or completing a medical degree or MD (2 %; n=2). Only 10 percent (8 of 82) of the survey respondents who know how to use computers did not obtain a baccalaureate (college) degree (Table 28).

Table 28: Distribution of respondents who know how to use computers by highest educational attainment

<table>
<thead>
<tr>
<th>Highest educational attainment</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed a baccalaureate (college) degree</td>
<td>62</td>
<td>76 %</td>
</tr>
<tr>
<td>Some units leading to a master’s degree (with MA / MS units)</td>
<td>5</td>
<td>6 %</td>
</tr>
<tr>
<td>Completed a master’s degree (MA, MS)</td>
<td>4</td>
<td>5 %</td>
</tr>
<tr>
<td>Completed a vocational/technical course</td>
<td>3</td>
<td>4 %</td>
</tr>
<tr>
<td>Completed secondary/high school</td>
<td>3</td>
<td>4 %</td>
</tr>
<tr>
<td>Completed a medical degree (MD)</td>
<td>2</td>
<td>2 %</td>
</tr>
<tr>
<td>Some years in college</td>
<td>2</td>
<td>2 %</td>
</tr>
<tr>
<td>Some years in a medical degree (no medical licensure exam/license)</td>
<td>1</td>
<td>1 %</td>
</tr>
<tr>
<td>Some years in primary/elementary school</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>Completed primary/elementary school</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>Some years in secondary/high school</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>Some years in a vocational/technical course</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>Some units leading to a doctoral degree (w/ PhD units)</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>Completed a doctoral (PhD) degree</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>82</strong></td>
<td><strong>100 %</strong></td>
</tr>
</tbody>
</table>

Base: 82 respondents who do know how to use computers
Source: September 2017 Survey on Learners’ Readiness for MOOCs answered by Pangasinan rural health workers

The largest share based on occupation of the survey respondents who know how to use computers is comprised of nurses, at 44 percent (36 of 82).
Of the 82 respondents who know how to use computers, 82 percent (n=67) generally have access to the Internet at home, whereas 18 percent (n=15) generally have no access to the Internet at home.

To the question “Where do you access the Internet?”, the top five responses of the 82 respondents who know how to use computers are: work (85%; n=70), home (82%; n=67), free wifi zones (44%; n=36), a relative’s/friend’s/neighbor’s house (17%; n=14), and a cyber cafe/Internet cafe (15%; n=15%) (see Table 29).

Table 29: Distribution of respondents who know how to use computers by where they access the Internet

<table>
<thead>
<tr>
<th>Where the Internet is accessed</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work</td>
<td>70</td>
<td>85 %</td>
</tr>
<tr>
<td>Home</td>
<td>67</td>
<td>82 %</td>
</tr>
<tr>
<td>Free wifi zones</td>
<td>36</td>
<td>44 %</td>
</tr>
<tr>
<td>Relative’s/Friend’s/Neighbor’s house</td>
<td>14</td>
<td>17 %</td>
</tr>
<tr>
<td>Cyber café/Internet café</td>
<td>12</td>
<td>15 %</td>
</tr>
<tr>
<td>School/University</td>
<td>6</td>
<td>7 %</td>
</tr>
<tr>
<td>Public library</td>
<td>5</td>
<td>6 %</td>
</tr>
<tr>
<td>Other: Mobile data on gadget</td>
<td>3</td>
<td>4 %</td>
</tr>
<tr>
<td>Telescenter</td>
<td>1</td>
<td>1 %</td>
</tr>
</tbody>
</table>

Base: 82 respondents who know how to use computers
Note: Multiple responses were allowed for the 82 respondents who know how to use computers. Thus, the sum of their frequency distribution exceeds 82, and the sum of the percentage distribution exceeds 100 percent.
Source: September 2017 Survey on Learners’ Readiness for MOOCs answered by Pangasinan rural health workers

Of the 82 respondents who know how to use computers, three in five or 60 percent (n=49) know how to use three Microsoft Office (MS) applications (MS Word, MS Excel, and MS PowerPoint). Eight percent (7 of 82) are knowledgeable about two MS applications, with five able to use MS Word and MS Excel, and two able to use MS Word and MS PowerPoint. One in five respondents or 20 percent (n=16) can use only one MS Office application, with 15 of them knowing only MS Word, and 1 of whom knowing only MS Excel. Ten out of 82 respondents who know how to use computers, or 12 percent, do not know how to use any of the three MS applications (MS Word, MS Excel, MS PowerPoint).

The total proportion of rural health worker-respondents who do not know how to apply any of the three MS Word applications is 37 percent (42 of 114 total respondents), of whom 28 percent (32 of 114) do not know how to use computers, and 12 percent (10 of 114) know how to use computers.

From the foregoing, it is evident that MS Word is the MS application that is used by the most number of survey respondents who can use computers, at 86 percent (71 of 82);
followed by **MS Excel**, used by **67 percent** (n=55); and finally, **MS PowerPoint**, used by **45 percent** (n=51) of the 82 respondents who can use computers (see Table 30).

Table 30. Distribution of respondents who know how to use computers by the Microsoft Office (MS) application that they know how to use

**Question:** Which of these computer applications do you know how to use?  
*(Choose all that apply)*

<table>
<thead>
<tr>
<th>Application</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Office WORD</td>
<td>71</td>
<td>86 %</td>
</tr>
<tr>
<td>Microsoft Office EXCEL</td>
<td>55</td>
<td>67 %</td>
</tr>
<tr>
<td>Microsoft Office POWERPOINT</td>
<td>45</td>
<td>45 %</td>
</tr>
</tbody>
</table>

*Base: 82 respondents who know how to use computers*  
*Note: Multiple responses were allowed for the 82 respondents who know how to use computers. Thus, the sum of their frequency distribution exceeds 82, and the sum of the percentage distribution exceeds 100 percent.*  
*Source: September 2017 Survey on Learners’ Readiness for MOOCs answered by Pangasinan rural health workers*

4.3.4 References


PART FIVE

STAKEHOLDER READINESS STUDY
5.1 Malaysia

5.1.1 Introduction

As with any studies that attempt to introduce new learning or training technology to a group of participants, the stakeholders should also be involved during the feasibility study. The purpose of involving these groups of stakeholders are mainly to obtain their input and feedback, especially with regards to the participants’ readiness on the technology, and whether these groups themselves are supportive to the proposed initiative for the targeted learners. In this study, the institutions, organizations or associations related to the well being of the single mothers will be involved. There are several identified stakeholders, including the Ministry of Women, Family and Community Development, National Single Mothers’ Association, the state government agency, as well as the non-government organizations which look after these single mothers.

In Malaysia, a ministry was established in 2001 in which its mission is ‘to integrate the perspectives of women and society into the mainstream of national development and strengthen the family institution towards improving social welfare’ (Ministry of Women, Family and Community Development, n.d.). There are four agencies under its direct jurisdiction, involving Department for Women Development, Social Welfare Department of Malaysia, National Population and Family Development Board and Social Institute of Malaysia. Of these four agencies, the Department for Women Development is responsible to carry out programmes and activities for the development of women consistent with the vision and mission of the ministry. The ministry – through this department – is also responsible to provide assistance to the single mothers, including welfare assistance (children assistance, general assistance and start up grant), assistance to increase skills and income (single mother skills incubator program, NGO cooperation, Jejak Bestari), and assistance to improve emotional well-being (counselling).

In addition, there are various organizations and non-governmental organizations, NGOs, established to assist single mothers. For example, in 2012, the National Single Association for Single Mothers (PIKM) was established, and followed by the launching of the Network for Single Mothers of Malaysia (JUWITA) which is considered to be the patron of all Single Mothers’ Association (SMA) in the country. Several SMAs at the state levels were also formed, such as Pahang Single Mothers’ Association, Terengganu Single Mothers’ Association, Penang Single Mothers’ Association, etc. Moreover, the state of Penang has its own Penang Women Development Corporation - funded by the state government - which also aims to help the transformation of Penang into an advanced and progressive society through the promotion of equality among all women and men in the state.

Furthermore, as this initiative attempts to develop a MOOC course on lifelong learning domain for the single mothers, it is also important to obtain initial reaction and feedback from those who are currently offering a similar domain. Through the interview with such individual, some general ideas on the potential benefits, main motivations and expectations from the target learners, as well as problems or challenges in offering a lifelong learning course through MOOC platform can be identified.

Therefore, this study attempts to obtain input and feedback from these departments, associations and organizations regarding the single mothers’ level of MOOC readiness and whether these groups are supportive in this MOOC initiative. In addition, feedback from the
existing MOOC instructor and administrator on the potential benefits and challenges on implementing a MOOC course for lifelong learning domain – in this case involves training entrepreneurship for single mothers – will also be gathered. The findings of this study will also used to triangulate the data gathered from the survey and interview from the single mothers, as reported in Part Four of this report.

5.1.2 Research Methodology

5.1.2.1 Sarawak

With our human centered perspective intact we assess the capacity to organize massive public education opportunities in SEA universities under following stages. First we conduct requirements analysis and feasibility study where we formulate social problems to be addressed and identify stakeholders and perform socio-economic profiling of communicates and their localized learning needs. Second we design overall MOOC strategy including scalability considerations by formulation of MOOC strategy and learning management methodology and design of tailor made technology solutions for the purpose. Finally we pilot our MOOC designs in specific areas such as design of body of knowledge (BoK), build community of facilitators/infomediaries, build networked community of learners, and learner and facilitators profiling. Refer to Fig 1

This feasibility study addresses the need of the specific target group (single mothers) through systematic profiling. We match their expectations and aspirations (readiness) taking into consideration the assets and potentials. In doing so we cannot overlook the belief systems which affect values systems (e.g. how they view education)

5.1.2.2 Penang

This feasibility study attempts to investigate the stakeholders’ readiness and the single mothers’ readiness (from the stakeholders’ perspectives) on the proposed MOOC initiative. A qualitative research method was applied for this purpose through interviews with the
relevant parties. In specific, three interviews were conducted with the representatives of each organization, department and association as previously mentioned.

Furthermore, another interview was conducted with an expert who is currently teaching in a MOOC platform as well as administering a MOOC initiative in a public university in Malaysia. This interview was conducted to obtain his input on the current practice of MOOC, the motivation and expectations from the learners, as well as the challenges in MOOC.

5.1.2.3 Sampling

5.1.2.4 Sarawak

Fifteen community leaders, councillors, NGO representatives, and Telecenter Coordinators from the Miri, Ba’Kelalan and Bario areas were involved in the stakeholders discussions for initial requirement elicitation and learning scenario modeling.

A total of 64 Single Mothers - 24 from Ba’Kelalan and 40 from Bario - were identified as participants to help us decide on lifelong-learning strategy.

From this initial list of contacts, a follow up visit was conducted on 8 Feb. 2018 with 13 single mothers in Ba’Kelalan. The in depth interviews were conducted in Lun Bawang language with the assistance of a translator. The summarized responses from the participants are as follows:

- The main area of interest among the single mothers is health, followed by commerce and telecommunications and lastly trainings and education
- They are not familiar with ICTs, their only exposure is to their phones. Only one participant had a Facebook account and could use WhatsApp.
- They are more interested in sharing information about everyday life (e.g. cooking, farming), spiritual news
- They enjoy sharing information amongst one another, but their method of sharing is mostly face to face and usually they will learn from one person and practice together (expert - novice learning)
- Language is a barrier for them to access information as they are only familiar with Bahasa Lun Bawang and Bahasa Malaysia
- They view themselves as a mentor/ teacher to their peers
- Knowledge sharing to them is something that they do because it makes them feel good, and not something that they view as an opportunity for them to earn money from
- They want to learn how to preserve their knowledge more efficiently (e.g. through video documentation)
- They are satisfied with the infrastructure in their village, however they would like to see further improvements being made (e.g. electricity supply)
- They believe that ICT is important as it makes life a lot more convenient
- There should be more learning tools facilities/ infrastructure in the village, not only for them but also for the future generations
- They learn from people around them, such as from their interactions with the doctors and teachers
- They believe that knowledge is important and empowering and that the more knowledgeable you are, the higher value is placed on you
- They are also keen in giving training to others, on matters concerning daily lives
- They would prefer locals to train them and they want face-to-face interaction
- They feel ready for MOOC and are eager to start participating
Interview sessions were scheduled with other local community members on 9 Feb., 2018. The respondents highlighted the following:

- There is a need for more infrastructure in the village to facilitate learning
- It would be good to have activities or learning sessions with regards to healthcare
- Other interests/ needs of the community include:
  - Mechanics
  - Cooking/ baking
  - Livelihood
- There is also a keen interest in local knowledge preservation for the benefit of the younger generation
- They want to learn how to document knowledge in a digital format
- One way of disseminating knowledge could be through video recordings and showing it to the community using DVDs as the internet connection is not stable/ available

An interview session with the Ketua Kampung (Village Head) was held in the morning on 10 Feb. 2018, with the following observations:

- The content of the learning should be relevant to the community, including youths and elders
- More activities should be held so that the community will feel more committed towards participating
- There should be a proper place to show and disseminate knowledge/ information
- Should look for a way to overcome challenges such as electricity and internet, maybe an offline approach would be better

5.1.2.5 Penang

In this study, four groups of respondents were identified to be interviewed for data collection purposes:

(a) Penang State Women Development Corporation representative

An interview was conducted with the Chief Executive Officer, Penang Women Development Corporation (PWDC). This corporation which receives funding from the state government, works ‘towards the transformation of Penang into an advanced and progressive society through the promotion of equality among all women and men, girls and boys, regardless of ethnicity, religion, gender or socioeconomic background’ (PWDC, 2016).

(b) Penang Single Mothers’ Association representative

Each state in Malaysia has its own Single Mothers’ Association (SMA), and every single mother is invited to register and become its member. The role of these SMAs is mainly to provide assistance, support and advice to the single mothers. Through such association, the single mothers will be able to share knowledge and skills, as well as take part in the relevant activities for their self-improvement. They will also be able to exchange ideas and receive the necessary advice to improve themselves, especially in the aspect of economy, so as to avoid them being left behind and marginalized due to the financial instability. In this study, the Chairperson of Penang Single Mothers’ Association was identified to be interviewed. Not only PSMA serves as the coordinator for several income-generation activities to improve the life quality of the single mothers in the state, but also conduct workshops, trainings and courses for their capacity building.
(c) Non-governmental organization (NGO) which deals with single mothers

In this study, an interview was carried out with the Founder of House of Hope (House of Hope, n.d.) as a non-profit organization that provides physical aid to the underprivileged families living in one housing area in Penang, Malaysia. House of Hope intends to impact the community – irrespective to race, gender, religion or politics - through feeding, clothing, educational programs, temporary financial relief and medical assistance (House of Hope, 2013).

(d) MOOC instructors and administrators of a public university

In this study, an expert in e-learning and who is a task force member of the country’s MOOC initiative was interviewed. Besides being directly involved in the nation’s MOOC program, he also has three MOOC courses offered in the Malaysia MOOC platform, which are developed for lifelong learning. He is currently the director of a centre for academic excellence in a public university. In this study, not only was he invited to share his experience in conducting MOOC courses and promoting MOOC initiative, but also his input on the benefits and challenges faced by the target learners, administrators and the institutions in general.

5.1.2.6 Research Instrument

In this study, a set of interview questions was developed to obtain the informants’ feedback regarding the intention to offer the MOOC initiative for the single mothers in the country. Similar to the questions asked to the single mothers (Part Three of this report), there are two main categories of questions posed to these stakeholders during the interview, and they involve items on ICT readiness and online business readiness. The instrument is shown in Appendix A.

In addition, another set of interview questions for the MOOC instructor and administrator of an academic centre for teaching and learning was developed. This interview attempts to obtain the instructor’s feedback regarding the motivation and expectations from the learners and instructor, the problem and challenges faced and ways to improve them, as well as administrative items on the planning and development of the MOOC initiative in his higher learning institution. The questions are shown in Appendix B.

5.1.3 Sarawak Findings

5.1.3.1 Need for Support Groups

From the interview all respondents suggested that the establishment of support group is an important step to provide motivation to MOOC participants. The concern is how to support learners as mother child teams from vulnerable groups to external influences. This network is important for single mother to let them know that they are not alone, because single mother often have to struggle everyday to care for the children, to work and therefore find it impossible to socialize and networking. They need “the peer group pleasure, not peer group pressure”.

5.1.3.2 MOOC Content

As the focus of the study will be on linking educational possibilities that takes into consideration the socio-cultural setting of learners, it will serve as a platform for lifelong-learning in context. There is a need to develop a broad range of contents to serve
the diverse needs. In the design of body of knowledge (BoK) we are suggested to target at least three key areas:

- **Education:** to enhance single mother’s potential through education opportunities.
- **Well-being:** to cover aspects of single mother and their children’s livelihood (e.g. food security, nutrition/cooking skills, healthcare)
- **Financial Sustainability:** to create opportunities to increase their financial capability while sustaining their livelihoods.

5.1.3.3 Recommendations

It is suggested to apply layered approach with different roles assigned for learners as facilitators, mentors, activists in addition to being a learner. A support system for networking community champions is also shown as very essential to build community bonding. To make learning more fun and engaging it is also suggested to consider game-like approach and use web-form for instructors.

A concern is also for a need to re-look at the design quality of the MOOC environment and possibility revamp to suit to the locale needs. The appointment of MOOC Managers at the university level who will look into the operational aspect, training, QA and assessment of MOOC is also suggested managerial aspects. A special focus is also on certification one that is, recognized by government and industries.

The issue of preservation of indigenous knowledge for future generations was raised as a concern by the community leaders. While this is tangential to the focus of the Competen-SEA project, it is an issue that is worth pursuing as a follow up to the development of MOOCs targeting the rural communities.

5.1.3.4 Challenges

Some of the challenges in learning management that we should overcome to apply MOOCs are the need to address high-dropout rate and yet address literacy levels and lack of motivation in attending academic-approach. There is also a need for non-traditional learning approach to deal with diverse groups of learners and literacy gaps. We also need to sustain the motivation to learn via MOOC to reduce drop out cases. Most importantly for lecturers, the recognition of their contribution in delivering MOOCs needs to be devised.

To motivate learners there is a need to study technology suitability for purpose, design intervention, study different types of MOOCs that may be appropriate. There is also the need to reconcile the ability of SEA institutions to run MOOCs and the ability to actually address social problems. We also need to study MOOC delivery in three phases: pre-engagement, engagement, post-engagement.

5.1.4 Penang Findings

5.1.4.1 ICT Readiness

Based on the interviews, all respondents shared the same view that online learning that used MOOC as a platform would not be the main options for those single mothers who have none or little knowledge in ICT. This is referring to group of single mothers who are still struggling to get access to basic needs such as daily food, shelter and medical health bill. The interview with the founder of House of Hope revealed that **majority of the members does not have access to the very basic needs** of lives such as food, shelter and clothes. House of Hope is a non-profit organization that provides physical aid to the underprivileged
families living in the Rifle Range area in Ayer Itam, Penang. It is founded by Madam Khoo. There are about 1 006 families registered under this organization. The majority of them are still struggling to make ends meet. Obviously, they have almost no skills and have access to neither computer nor mobile devices. According to her, all of the members have no access to Internet and none of them can afford to have mobile phone. For that reason, she argued that the single mothers would not be willing and would not be able to learn independently. She said that the centre also does not have the technology and technical expertise to support such online learning process.

Motivation and Face-to-Face Interaction

Online courses require discipline and the discipline must come with a clear reason as to why someone need to do it. This is the opinion that has been expressed by the CEO of PWDC. According to her,

...there must be not a WANT, but a NEED. So, the NEED must be very strong for single mothers, only then they will continue and not dropping out. So the NEED must be CREATED. And this must be so strong that they will persistently go in and do it. So there must be some measures or some motivations along the way.

Based on the interviews, respondents agree that motivation can be created through face to face session. They argue that the meeting can include sharing session that will finally lead to bonding creation. According to them, ‘...human touch [is important], even when you go online’.

Networking and Support Group

All respondents suggested that the establishment of support group is an important step to provide motivation to MOOC participants. According to Ong, it is a network to remind them that they are not alone, because single mother often have to struggle everyday to care for the children, to work and therefore find it impossible to find time to socialize and network. They need ‘the peer group PLEASURE, not peer group pressure’.

Protocols and System in Place to facilitate Collaboration and Communication

As mentioned earlier, the organization such as House of Hope does not have technology and technological expertise to support online learning. This is admitted by Madam Khoo as their main priority is to provide basic needs such as food. In a simple word, she said, ‘...we want to make sure that they are not dying of starvation’. As a state agency, Ms Bee Ling admitted that PWDC may not be able to provide asset and physical space but they will give full support to work together to get sponsorship. PWDC has various contact with various level of people and therefore PWDC might be able to work with sponsors to provide mobile devices and to organize motivational talk. Similar to that, the Chairperson of Single mothers' Association said that they can help in identifying the suitable candidate for the project but not able to provide physical or financial support.

5.1.4.2 Online Business Readiness

All of the respondents perceived MOOC as beneficial to marginal people who are planning to embark into business, not only for women but also for single parents. However, as mentioned by CEO of PWDC, language could be another issue. She suggested that other than Bahasa Melayu, it would be good to look into two other vernacular languages because the project should reach to those people who are marginalized. Marginalized also means that they are not accessible to any of this. Respondents also argue that large number of single mothers in local associations are needed to learn the entrepreneurial skills for their
preparation to start their online business. All respondents are strongly confident that participants of MOOC project would be able to run an online business independently. However, they also admitted that financial issue would be one of their main challenges particularly to get access to computer, Internet data plan, Internet connection and smartphones – all the devices needed for this online learning. Therefore, financial support is needed so that single mothers would be able to participate in this online learning.

5.1.4.3 Interview with MOOC instructor and administrator

The MOOC instructor is currently offering three MOOC courses, namely (a) Flipped Classroom, (b) Copyright for Educators, and (c) Managing Information Overload. These courses are not part of formal courses offered in higher learning institutions, rather they are mainly for educators who wish to enhance their teaching skills and knowledge. His first course – Flipped Classroom - managed to attract more than 2 000 participants world-wide, and is run on OpenLearning platform.

Motivation for the learners and the instructor

According to him, the main motivations among the participants are:

I. They see the topic as very relevant to their needs. Flipped classroom is the latest approach or ‘in-thing’ in teaching and learning, and all participants are very much interested to learn more about the topic.

II. As they are passionate about this topic, their intrinsic motivation is high, resulting in more participation and involvement among those participants.

In other words, in order for any MOOC courses to be accepted by the target audience, it needs to be relevant, updated and interesting to them. Once the participants develop their intrinsic motivation, their involvement and participation in the MOOC environment will probably last longer than expected.

Moreover, for any MOOC courses to be sustained, the instructors also need to have their own motivation. These instructors should put the effort and show interest in conducting the course so that it can attract and sustain the learners’ interest. It is especially important if the instructor of the MOOC course is a practitioner of the topic delivered, and be able to share their skills and experience in the MOOC environment.

Challenges

The MOOC instructor (the interviewee) has identified several challenges faced by him and the department that oversee the running of the MOOC initiative in the institution. The challenges are:

I. **Awareness and support:** lack of awareness among the university members including the faculty members and the support staff. In addition, strong support from the top management is also very much needed to ensure MOOC initiative can be implemented accordingly. Unfortunately, the MOOC culture is not really practiced yet, and the ecosystem needs to be ready for it.

II. **Copyright:** faculty members are concern with copyright issues; many are not willing to share their course content with others except with their students.

III. **Attrition rate:** The very high rate of attrition could be due to several factors including commitment and involvement from the participants.

IV. **Course design quality:** the use of conventional or traditional way of ‘transferring the knowledge’ from the instructor to the course participants affect the quality of the MOOC course design.
V. Recognition and reward for the instructors: Preparing and delivering MOOC is time consuming, and some instructors are questioning the lack of recognition and reward for their involvement in preparing and delivering the MOOC courses.

Expectations
Several expectations were also identified by the interviewee. The expectations are:

I. for students, they want to know the value for learning. If the lecturers inform them to use MOOC effectively and integrate as part of blended learning activities (instead of just for viewing purposes), they will value its importance. Thus, proper design and instructional strategies/plan of MOOC delivery is required.

II. for the lecturers, those who are motivated, extrinsic motivation (recognition or reward) is not an issue. But for those who are not really motivated, recognition and reward is their concern, as commitment is really needed to prepare and deliver MOOC courses.

Ways to improve current MOOC readiness
Based on the current scenario and problems mentioned earlier, the interviewee has proposed several feedbacks:

I. the whole ecosystem needs to be improved so that MOOC can be accepted. This include the need to increase awareness among the community members about the MOOC agenda by having seminar, workshop and briefing to the target audience and its departments or organizations.

II. the MOOC initiative has to be driven by the top management (top-down initiative). The blueprints for higher education and lifelong learning are clear, for example, Shift 9 (Globalized Online Learning) focusing on MOOC and Shift 3 Nation of Lifelong learners.

III. recognition for those using MOOC – promotion exercise needs to consider rewarding those who deliver their teaching and learning using MOOC platform

IV. the appointment of MOOC Managers at the university level who will look into the operational aspect of OOC. Also as think tank on how to improve MOOC course. They will also look for quality assurance and assessment, as well as training for the faculty members who are interested to participate in offering courses in MOOC

V. promotion of MOOC through various channels to ensure that the courses are visible to the people outside there

VI. an MOOC team is needed specifically dedicated for MOOC projects and initiatives.

VII. a need to re-look at the design quality of the MOOC environment.

Certification and accreditation issues
The interviewee was also asked questions pertaining to certification and accreditation issues. His feedback includes:

I. In general, certification on MOOC participation is yet to be implemented at the national level, however, some courses have started to award certificate of participation. But accreditation needs to be done first

II. in terms of accreditation – a panel/technical committee will be established to look into all the MOOC courses offered in the Malaysia MOOC initiative so that the can go through the quality assurance process. If the university wants its courses to be accredited, they have to make sure that these courses meet the criteria before accreditation can be done.
5.1.5 Meetings with Government Ministries

As part of the stakeholder engagement process, two meetings were held with government ministries and agencies on 9th Nov 2017 by a delegation comprising of Competen-SEA European partners and the Universiti Sains Malaysia project team members:

- Ministry of Women Family and Community Development Malaysia (MWFCD)
- Malaysian Communications And Multimedia Commission (MCMC)

5.1.5.1 Ministry of Women Family and Community Development Malaysia (MWFCD)

The meeting with the MWFCD was attended by consortium members and MWFCD officers. Prior to this meeting, the Secretary of the Policy and Strategic Planning Division of the ministry was briefed regarding the Competen-SEA project and to plan for the stakeholders' meeting. The stakeholders' meeting chaired by the Deputy Secretary of the Policy and Strategic Planning Division included representatives of the Gender Policy Unit and Women’s Development Department of the Ministry.

The meeting concluded with a general agreement on these points:

- The Ministry generally lauds the project and agrees about its potential benefits to single mothers in Malaysia.
- The Ministry is willing to assist the project in getting access to groups of single mothers in Malaysia who are beneficiaries of programmes under the Ministry. The assistance may be in various ways that are within the capacity and terms of reference of the Ministry’s agencies.
- The Ministry is willing to share information about other links that the project can pursue in developing MOOC for single mothers.

5.1.5.2 Malaysian Communications And Multimedia Commission (MCMC)

MCMC is the regulator for the converging communications and multimedia industry in Malaysia. The discussion at MCMC was chaired by the Head of the Department of Content Applications Industry Development at MCMC. According to 2013 data, MCMC has set up 500 internet centres, called Pusat Internet 1 Malaysia (PI1M), in the rural areas all over Malaysia. PI1M’s objective is to help rural communities improve their social and economic status as well as to enjoy the benefits of surfing the Internet as it is felt by the urban community, thus closing the digital divide between the rural population and the city.

The discussion explored the possibility of leveraging PI1M as learning centres for the marginalized community that we are dealing with in our project (the single mothers). It was interesting to note that MOOC for Entrepreneurship, Early Childhood Education and Islamic Studies has been rolled out for communities in the state of Terengganu in 2015. Hence the consortium's work in developing MOOC for single mothers can complement the efforts started by MCMC.

5.1.6 Summary

This qualitative study consists of Focus Group Discussion (FGD) with single mothers and in-depth interviews with Single Mothers Association, NGOs and state agency, Penang Women Development Corporation (PWDC). The findings from the in-depth interviews with stakeholders reveal that they perceived MOOC as beneficial to marginalized group who are planning to embark into business, not only for women but also for single parents.
Nevertheless, financial would be one of their main challenges in order to get access to computer, Internet data plan, Internet connection and smart phones – all the devices needed for this online learning. Therefore, financial support is needed so that single mothers would be able to participate in this online learning. The establishment of support group is also an important step to provide motivation and technical support to MOOC participants. Although, majority of single mothers interviewed have access to social media, there are a group of single mothers who do not own hand phone, let alone smart phone and data plan/Internet. This group is referring to those single mothers who are still struggling to meet the very basic needs of lives such as food, shelter and clothes. Therefore, online learning that used MOOC as a platform would not yet be the main options for these single mothers.

The major findings from this qualitative study shows that majority of single mothers have basic knowledge and skill in using computers such as using email and search engine. Although, they have never heard of MOOC, majority of single mothers are fully aware about online learning and they seem to be very motivated to participate in the MOOCs program. They also expressed high level of readiness to embark on online business or to expand their existing online businesses. All of them were quite confident that the participation in MOOC project will boost their entrepreneurial skills, expand their business networking and eventually generate income for their families.

Moreover, based on the feedback from the current MOOC instructor and administrator, several aspects need to be looked into if a new MOOC initiative is to be proposed. These include the need to have the ecosystem (e.g.: facilities, management, instructors, students) ready, the significance and value for learning among the students, the recognition and reward especially for the MOOC instructors, accreditation and certification of the MOOC courses as well as the design quality of the MOOC courses. Any MOOC initiative will probably be a failure if these concerns are not addressed accordingly.

5.2 Indonesia

In Indonesia, two different groups of stakeholders were approached to discuss the issues related to this feasibility and the rollout of the proposed MOOC project based on the regional location of the Indonesian Competen-SEA project members.

The first group of stakeholders is located in North Sulawesi Province. The first stakeholder involved the Communication and Informatics Office of Sangihe Islands District in North Sulawesi Province. Meanwhile, the Industrial and Trades Office of North Sulawesi Province was identified as the second stakeholder in North Sulawesi.

Two meetings were conducted by Universitas Sam Ratulangi with different stakeholders on the following dates to discuss the issues related to the feasibility study and rollout of the project:

- 8-9 March 2017: Dinas Komunikasi & Informatika Kabupaten Kep. Sangihe – Provinsi Sulawesi Utara (Communication and Informatics Office of Sangihe Islands District, North Sulawesi Province) [KOMINFO]
- 10 April 2017: Dinas Perindustrian & Perdagangan Provinsi Sulawesi Utara (Industrial and Trades Office of North Sulawesi Province)

The response from the various stakeholders were encouraging, and various suggestions for how to proceed with the implementation and delivery of the MOOC courses were provided by the stakeholders, such as the involvement of volunteers from various religious and youth
organizations. Nonetheless, more detailed study of the telecommunications infrastructure readiness of the target group is needed.

In addition, the Industrial and Trades Office of North Sulawesi Province were keen to assist with providing content and materials for the MOOC development.

The second group of stakeholders is located in East Java. The Department of Marine and Fisheries, East Java Province was selected as the leading stakeholder based on the existing collaboration between Institute of Research and Community Services of Faculty of Fisheries and Marine Science at Universitas Brawijaya, Malang. A meeting was conducted by Universitas Brawijaya with the Department of Marine and Fisheries, East Java Province in November 2017.

5.2.1 Feedback from meeting with KOMINFO

The meeting was attended by two people from UNSRAT and four people from KOMINFO.

- The Official Secretary of KOMINFO said that the project is very advantageous for the society of Sangihe Islands district and could be worked hand-in-hand with the government programs. Then he described about other offices/parties in the district government that could be involved to support this project. He also suggested some dissemination strategies to distribute the module to the society and how to encourage them to use it effectively.
- The KOMINFO Sector Head suggested to involve non-governmental organizations in the society such as religious organizations (churches and mosques) and youth groups in the implementation of the project.
- The Official Secretary of KOMINFO described the general condition of the Sangihe Islands District based on the data reported in the “Kepulauan Sangihe Regency in Figures 2016”, which is an official report published by the Government of Sangihe Islands Regency each year. The interpretation of the data in the report and how it was relevant to the project requirement was further discussed.
- Mr. Arie Lumenta (UNSRAT) described other required data needed for the feasibility study, especially about the telecommunication infrastructure readiness to support the e-learning content distribution to the society. KOMINFO requested UNSRAT to contact telecommunication providers such as Telkom and Indosat to obtain the more complete data. Other data that can be supplied by the KOMINFO Office will be provided later.

5.2.2 Feedback from meeting with Industrial and Trades Office

The meeting was attended by two people from UNSRAT and two from the Industrial and Trades Office.

- Mr. Steven Sentinuwo (UNSRAT) described the MOOC course that will be produced by the project, which is an e-learning module regarding the entrepreneurship of sea-based products for the people in the islands of North Sulawesi province.
- The Industrial and Trades Office Sector Head described briefly the mission of the Industrial and Trades Office of North Sulawesi Province, and also highlighted the programs in the current financial year, such as the “Rumah Kemasan” (Packaging House) that can cooperate with the Competen-SEA project.
5.2.3 Feedback from meeting with Department of Marine and Fisheries

The discussion with the Department of Marine and Fisheries were initiated to coordinate with stakeholders who have an interest in the welfare of coastal communities. The outcome of the discussion is summarized in several points:

- More concrete activities is needed to encourage the entrepreneurial spirit of society.
- Community development should be based on local wisdom in the surrounding environment.
- Mangrove and beach are the two important natural resources for South Malang area which may be optimized to increase the incomes of coastal people.
- Educational background of the people need to be improve.
- The Department of Marine and fisheries, East Java province will support any actions to increase the life quality of the coastal communities.

5.3 Philippines

The Philippine implementation strategy for the Competen-SEA project was decided by the Philippine partners to be province-focused and co-managed with the partner province. The partner province will be the Province of Pangasinan, a province in the northern part of the island of Luzon. As such, part of the engagement process and stakeholder readiness study will be focused on the Province of Pangasinan, specifically the Provincial Health Office of the said province.

The Competen-SEA project will also be closely coordinated with another eHealth project of the Ateneo de Manila University-Institute of Philippine Culture, the eHealth TABLET for Informed Decision-making of Local Government Units or eHATID LGU. Pangasinan Province is already a partner of the eHATID LGU project and the capacity-building component of the said project will be closely coordinated with the Competen-SEA project.

5.3.1 Consultations with possible MOOC providers and Province of Pangasinan

The following consultations and discussions were conducted by the Philippine partners to assess the readiness of possible MOOC providers for the MOOC to be developed for rural health workers

Provincial Health Office (PHO), Province of Pangasinan. There were four meetings already held with the PHO of Pangasinan since January 2017 to explore the possibility of the PHO co-managing the MOOC course for the rural health workers in the Province. A draft memorandum of understanding (MOU) was drafted as a result of these consultations and is now in the review and approval process.

With the PHO of the Province of Pangasinan, a Competen-SEA orientation with possible university partners in the province will be conducted on 11 September 2017. At least four universities will be invited to the said orientation to be hosted by the Pangasinan Provincial Health Office.
The Department of Science and Technology (DOST), Philippine Council for Health Research and Development (PCHRD). DOST PCRHD provides technical and financial support to the eHATID LGU project and was informed of the Competen-SEA collaboration last May 25 2017. A formal letter regarding the collaboration with eHATID LGU was also sent to DOST PCRHD.

Department of Interior and Local Government (DILG), Local Government Academy (LGA). The DILG LGA regularly conduct the Orientation for Newly Elected (ONE) LGU officials and uses their website to conduct webinars and other online courses. The possibility of having the DILG LGA website for the MOOC course to be developed was discussed with DILG LGA on two occasions, the most of which was in 27 March 2017.

Department of Health (DOH), Health Human Resource Development Bureau (HHRDB), Learning and Development Division (LDD) which handles the DOH e-learning Platform. The possibility of the DOH, HHRDB, LDD hosting the MOOC was also discussed in two meetings and a MOU is now being drafted for a proposed collaboration between the Competen-SEA Philippine project partners and the DOH HHRDB.

The Competen-SEA project was also introduced formally to the following agencies and follow up meetings will be scheduled to explore possible project collaboration: Philippine Health Insurance Corporation, Civil Service Commission, Technical Education and Skills Development Authority and Science Education Institute of the Department of Science and Technology.

5.3.2 Preliminary discussions with possible MOOC participants

The eHATID LGU project had conducted a series of trainings for rural health workers in various parts of the country from 2015 to 2016. We reviewed the number of Rural Health Unit (RHU), City Health Officers (CHO) and Provincial Health Officers (PHO) who attended the eHATID LGU trainings since April 2015. The total number of participants was 1013 with the following breakdown: 395 participants from the Luzon Regions, 209 participants from Visayas Regions and 409 participants from the Mindanao Regions.

A small group discussion was conducted with rural health workers who were attending an eHATID LGU re-training session last 10 February 2017. The rural health workers came from the LGUs of Abra de Ilog, Oriental Mindoro and Rosales Pangasinan. Please find below a summary of their responses in relation to online distance learning.

A. Preferred Course Topics:

- International Classification of Diseases (ICD) codes (3)
- Troubleshooting (2)
- Downloading topics
- Basic computer course to understand computer jargon
- Encoders’ certification
- eHATID and Global Health

B. Preferred course format

- Downloadable PDFs and other readings (3)
- Audio-visual presentation (2)
- Short quizzes / mini-evaluations (2)
- Video type
C. Session length

- At least 1 hour
- 30 minutes to 2 hours daily, 2 to 3 times a week
- 30 minutes to 1 hour
- 1 hour

D. Other comments and suggestions

- Enrollees should take mini-evaluations / short quizzes in between course modules (pass module first before moving on to the next module). These exams can be taken at the enrollees’ convenience (own pace and time).
- Course should have a personal tracker
- Videos should be available for downloading, since not everyone has 24/7 Internet connections
- 12-week course max with new content every two weeks

Another group discussion with rural health workers was conducted last 30 March 2017 with the rural health workers of the Municipality of Paombong in the Province of Bulacan, also in Luzon Island. The two nurses in charge of the Paombong Rural Health Units health information system participated in the group discussion. None of them has taken any online course but if given the chance would like to have courses that are related to their tasks of patient data management and health insurance claims with the Philippine Health Insurance Corporation (PhilHealth). As for the type of learning material that would be more interesting for them, the response was ‘video’ and for the amount of time they can spare for an online course, both said ‘around thirty minutes’ everyday.

5.4 References


PART SIX
CONCLUSION
A feasibility study has been carried out in each of the Competen-SEA partner countries, in which several important aspects were investigated. Four main areas of feasibility study were conducted, namely Regulations, Policy and Initiatives, Learner Readiness, Resource Readiness and Stakeholder Readiness. In general, there are several main differences observed among these three countries in terms of Regulations and Policies, as well as their MOOC initiatives. These indicate that e-learning (and MOOC) is important and the guidelines, policies, and regulations were proposed and enacted to ensure that the relevant programs and initiatives benefit the society and the country. In terms of learner readiness, in general, the targeted participants in each country are ready for the MOOC initiative. They also provided some input on the aspects or topics to be covered in the proposed initiative. However, this study indicates one important finding in that these targeted learners do need some kind of support for their learning and participation. As online learning is relatively new to them, peer support as well as technical support are required to assist their learning.

Meanwhile, the findings also reported about the resource readiness in terms of infrastructure, instructional and support staff. It discussed about the infrastructure including the Internet accessibility, MOOC architecture as well as content storage and delivery platforms for the MOOC initiative. It also reported about the human resources required in the initiative, involving the instructional staff to develop and conduct the MOOC courses, and support staff to manage the technical matters. Finally, based on the findings from the aspect of stakeholder readiness, they have provided positive feedback on the proposed MOOC initiative in each country. They have also proposed some input on how to assist the implementation of those initiatives. Moreover, some stakeholders are willing to participate, collaborate and contribute to the initiative so that the participants will benefit in the long run and the project will accomplish its goals.

Overall, the feasibility study indicates some important findings pertaining to the MOOC initiative. This initiative is very much welcomed by the intended learners and the relevant stakeholders, however, some concerns need to be addressed prior to its implementation. Further guidelines and recommendations for rolling out MOOCs to support the learning needs of underserved communities are documented in “WP1.2 MOOCs Recommendations Report.”
APPENDIX A: ASSOCIATION / ORGANIZATION MOOC READINESS

<table>
<thead>
<tr>
<th>NO</th>
<th>ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Do you have a large number of members who need to learn ICT skills?</td>
</tr>
<tr>
<td>2</td>
<td>Do all of your potential interested members have access to computers and/or mobile devices?</td>
</tr>
<tr>
<td>3</td>
<td>Are they willing and able to learn independently?</td>
</tr>
<tr>
<td>4</td>
<td>Do you have a way to access or produce effective online learning content?</td>
</tr>
<tr>
<td>5</td>
<td>Do you have the technology and the technological expertise to support a MOOC?</td>
</tr>
<tr>
<td>6</td>
<td>Do you have protocols and systems in place to facilitate collaboration and communication?</td>
</tr>
<tr>
<td>7</td>
<td>Have you clearly defined the goals of the training and how the trainees will be assessed?</td>
</tr>
<tr>
<td>8</td>
<td>Do you have a large number of members who need to learn the entrepreneurial skills?</td>
</tr>
<tr>
<td>9</td>
<td>Do you think the potential participants are able to run an online business?</td>
</tr>
<tr>
<td>10</td>
<td>Do you think the participants need financial support?</td>
</tr>
<tr>
<td>11</td>
<td>Do you have buy-in at all levels of your association?</td>
</tr>
<tr>
<td>12</td>
<td>Do you have buy-in among the potential participants?</td>
</tr>
</tbody>
</table>

Adapted from Nielson (2014).

URL: www.yourtrainingedge.com/assessing-your-companys-mooc-readiness/
APPENDIX B: INTERVIEW WITH CURRENT MOOC INITIATIVE TEAM
(TEACHING AND LEARNING CENTRE)

Objectives:

a. to understand the informants’ experience and perception about MOOCs
b. to identify enablers, barriers and expectations in implementing MOOC

Questions:

1. What are the main motivations for the instructors and the students?
2. What are the challenges and barriers in implementing MOOC in your institution?
3. What are the expectations from the instructors and the students themselves?
4. What can be improved in the implementation of current MOOC initiative?
5. How are the MOOC designed, developed and managed at the institution level?
6. How about accreditation and certification issues for the courses?
7. Other issues:
### APPENDIX C: DEMOGRAPHIC PROFILE OF FGD GROUP 1
### SINGLE MOTHERS IN USM

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Age</th>
<th>No of children</th>
<th>Marital Status</th>
<th>Type of business/skills</th>
<th>Mobility</th>
<th>Access to Tech. Devices &amp; Social Media</th>
<th>Short Courses Attended</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 – Zaf</td>
<td>33</td>
<td>2 boys (5 and 1 ½ y.o.)</td>
<td>Divorced (married at 31 y.o.)</td>
<td>Headscarf, bag, simcard (tone excel), cakes</td>
<td>Car</td>
<td>Facebook, email, WA, IG</td>
<td>None</td>
</tr>
<tr>
<td>#2 – Fah</td>
<td>48</td>
<td>2 (4 and 8 y.o.)</td>
<td>Widow (Married at 35 y.o.)</td>
<td>Cookies, frozen curry puff (based on order)</td>
<td>Highly dependent on father in law</td>
<td>Facebook, email, no WA</td>
<td>None</td>
</tr>
<tr>
<td>#3 – Mah</td>
<td>55</td>
<td>3 girls (studying and working)</td>
<td>Divorced at 40 (married at 26 y.o.)</td>
<td>MLM and quran teacher</td>
<td>car</td>
<td>Facebook, no WA, twitter, no smartphone</td>
<td>Online business workshop</td>
</tr>
<tr>
<td>#4 – Na</td>
<td>34</td>
<td>2 girls (9 and 10 y.o.)</td>
<td>Divorced for 3rd time with same husband (Married at 24 y.o.)</td>
<td>Tailoring but stopped to focus on her studies (degree)</td>
<td>car</td>
<td>Facebook, email, WA, IG</td>
<td>None</td>
</tr>
</tbody>
</table>

WA: WhatsApp  IG: Instagram
## APPENDIX D: DEMOGRAPHIC PROFILE OF FGD GROUP 2
SINGLE MOTHERS FROM PENANG (SINGLE MOTHERS’ ASSOCIATION)

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Age</th>
<th>No of children</th>
<th>Marital Status</th>
<th>Type of business</th>
<th>Mobility</th>
<th>Access to Tech. Devices &amp; Social Media</th>
<th>Short Courses Attended</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 – Mimi</td>
<td>45</td>
<td>5 children</td>
<td>Divorced (1/1/2)</td>
<td>Cosmetic, herbal medicine, health products, massage (own registered company), several product dealers</td>
<td>Car</td>
<td>Facebook (to promote business), email, WA (to form group of 10 companies), IG</td>
<td>Participated in various exhibitions, expos organized by FAMA, attended short courses organized by Single Mother’s Association, three days Entrepreneurship course at PISA, Penang</td>
</tr>
<tr>
<td>#2 – Shik</td>
<td>46</td>
<td>2 children</td>
<td>Married (de facto single mother)</td>
<td>Night market seller (food)</td>
<td>Car</td>
<td>Facebook, email, no WA</td>
<td>None</td>
</tr>
<tr>
<td>#3 – Mila</td>
<td>53</td>
<td>1 child (univ. graduate)</td>
<td>Divorced at 29 (married at 23 y.o.)</td>
<td>Experienced business women. Desktop Publishing (design and printing)</td>
<td>Car</td>
<td>Facebook, WA</td>
<td>An expert in Corel Draw and Design</td>
</tr>
<tr>
<td>#4 – Ita</td>
<td>40</td>
<td>8 children</td>
<td>Divorced (Married at 19 y.o.)</td>
<td>Tailoring, handmade soap</td>
<td>Car</td>
<td>Facebook, email, WA, IG</td>
<td>None</td>
</tr>
<tr>
<td>#5 – Amy</td>
<td>54</td>
<td>4 children (between 27–21 y.o.)</td>
<td>Divorced</td>
<td>Ex-Floor Manager at Park Royal Hotel. Resigned after accident. Sells different products: handmade coffee &amp; tea powder, clothes, handmade soap &amp; scrub</td>
<td>Car</td>
<td>Facebook, email, WA, IG</td>
<td>Diploma in Hotel and Tourism (two years in UUM – sponsored by Park Royal Hotel. Taking online course on business (maybank) – three months</td>
</tr>
</tbody>
</table>

WA: WhatsApp, IG: Instagram