MASSIVE OPEN ONLINE COURSES AS A COMMUNITY SERVICES PROGRAMME

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ABSTRACT

Universitas Terbuka, as a higher education institution adopting a distance learning system, has the experience in offering online learning or online courses. However, it was not until 2014 that the university conducted community services-related activities through Massive Open Online Courses. It was designed as free online courses for all levels of society, with a duration of 4-6 weeks, by utilising Learning Management System MOODLE 2.8. Since the concept of Massive Open Online Courses is still relatively new to most Indonesian people, the number of participants of Massive Open Online Courses-Universitas Terbuka is quite low, that is around 3,760 participants yearly, or 1880 participants each semester. This paper discusses various aspects of Massive Open Online Courses-Universitas Terbuka, ranging from its development, design and learning process, as well as participants access to Massive Open Online Courses-Universitas Terbuka. The survey consists of two parts targeted at obtaining characteristics of six Massive Open Online Courses participants and to identify Massive Open Online Courses relevance and competencies needed by the participant. The findings indicate that the quality expected by the participants focuses on the enrichment or Integrating of appropriate media and innovation of the learning process that can help the participants achieve the competence that could be immediately implemented in their work. The study also indicates that even though the participants were not necessarily interested in receiving formal certification but a recognition for enterence to degree programs would be beneficial.

Keywords: Massive Open Online Course, Community Services, Evaluation

INTRODUCTION

Massive Open Online Course (MOOC) was first offered by the University of Manitoba, Canada, in 2008. It was an online course which could be accessed for free aimed opening access to education for the global community. Currently, a number of world-class universities, such as Harvard, Massachusetts Institute of Technology (MIT), Stanford, and Yale, both directly and in collaboration with an association of educational provider, offer various open online courses. Figure 1 shows that by 2016, several large-scale MOOC providers were offering around 6,068 online courses (https://www.class-central.com/providers). As seen from Figure 1, Coursera and edX collectively offer more than 50% of MOOCs. Both Coursera and edX are the two biggest MOOCs platforms, offering MOOCs from various leading universities.

The Composition of MOOCs by Provider's Platforms
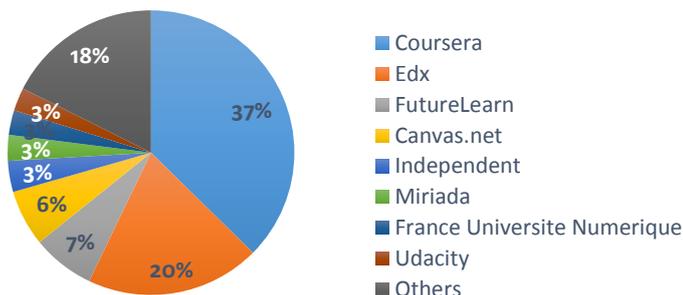
Source: retrieved from https://www.class-central.com/providers (2016)

Figure 1: The Composition of MOOCs by Provider's Platforms

The top five platforms in terms of the number of participants are Coursera, edX, Udacity, MiriadaX, and FutureLearn as seen in Table 1 (Shah, 2014). Apart from MiriadaX and FutureLearn, the three largest platform providers are based in the United States. Harvard Business Review even produced a report in 2015 saying that the number of participants of MOOCs offered by all the providers worldwide had reached 25 million people (Zhenghao, et al., 2015).

Table 1: Number of MOOCs Participants in 2014

Provider's Platforms	Number of Participants
Coursera	10,500,000
edX	3,000,000
Udacity	1,500,000
MiriadaX	1,000,000
FutureLearn	800,000
Total	16,800,000

Source: retrieved from https://www.edsurge.com/news/2014-12-26-moocs-in-2014-breaking-down-the-numbers (2014)

LITERATURE REVIEW

MOOC providers and participants continues to increase even though many people doubt its advantages for the democratisation of education. Data shows that many participants of MOOCs are those who have benefitted from conventional higher education, rather than those parts of the community who do not have access to non-MOOCs educational resources, or those MOOCS offered by many universities. However, the fact that offering MOOC-oriented models receive positive responses from the public, especially from those who do not seek a certificate and diploma cannot be denied.

Unlike in the case of developed countries where Internet access is no longer a problem, MOOCs in Indonesia is considered as a new learning mode that is limitedly offered and is not yet widely known. Learning activities and providers through MOOC are still sporadic in nature and MOOCs are only being offered by a few institutions. In Indonesia, the first MOOC was carried out by the Ciputra University in 2013 (http://ciputrauceo.com/) by offering free online courses in the areas of entrepreneurship, followed by the Universitas Terbuka (UT) in early 2014 (http://moocs.ut.ac.id/). Currently, several other universities belonging to

"Indonesian Open and Integrated Online Courses (IOIOC)" supported by The Ministry of Research, Technology & Higher Education has also begun to offer MOOCs. Nonetheless, there is still limited access to students of universities which are "IOIOC members, such as the University of Indonesia, Institute Technology of Bandung, University of Gajah Mada, Institut Teknologi Sepuluh November Surabaya, Bina Nusantara University, and Sekolah Tinggi Manajemen dan Ilmu Komputer AMIKOM Yogyakarta (Pannen, 2015). In other words, so far there have been only two institutions of higher education in Indonesia that truly implement the principles of new model of MOOCs, namely Ciputra University and UT.

RESEARCH OBJECTIVE

This paper discusses the experience UT in offering MOOCs (known as MOOCs-UT) as part of its services to the community, ranging from its development background, design and learning process, as well as participants' access.

METHODOLOGY

This paper has two sections: (i) Description of MOOCs Development at UT, and (ii) MOOCs-UT Evaluation Survey. The first part explains three main areas of the university's experience in developing MOOCs-UT, which cover preparation, learning process, assessment and certification. The second part is based on a survey instrument that was sent out to all 225 participants registered in seven courses between October and November 2015. A total of 49 participants completed the survey. In the survey, participants were asked for demographic data, such as gender, age, and participant location; devices used; prior education; purpose of enrolment in the course; and expected competencies. All participants registered in different courses received the same set of questions.

MASSIVE OPEN ONLINE COURSE AT UNIVERSITAS TERBUKA

UT online tutorial packages were delivered by utilising the Learning Management System (LMS) specially designed for e-learning. The online learning system has been used by hundreds of thousands of UT students for many years. Currently, there are at least 4,000 virtual classes running each semester using the Moodle-based LMS.

Like other universities, UT also has a duty to implement the *Tri Dharma* (Three Pillars) of Higher Education consisting of education and teaching, research, and community services. Since UT has been offering ICT-based education, the university also wishes to make use of ICT in providing community services. UT has a commitment to share knowledge to all levels of Indonesian society without the constraints of time and place. Therefore, when MIT began to offer open courseware in 2001 and UNESCO introduced Open Educational Resources (OER) for open dissemination of knowledge in 2002, UT also began to develop and openly distribute OER materials through its website. The efforts to disseminate knowledge with the concept of OER was officially announced by UT as *Sumber Pembelajaran Terbuka UT* (*SUAKA-UT*) by using the open publication license, Creative Commons licenses (www.creativecommons.com). As for further development of SUAKA, UT has been developing various online courses with MOOC open formats. And since the beginning of 2014, they have been offered through the website http://moocs.ut.ac.id

MOOCs-UT was specially designed by UT to perform its social responsibilities in terms of community services that can reach all levels of the community, no matter where they are. MOOCs-UT is a free online course which is accessible to the public without any

requirements so that all levels of society can get high quality knowledge for free. In addition, by offering MOOCs, UT wishes to encourage members of the community to become lifelong learners by utilising ICT and online learning. The registration of MOOCs-UT is also done online. Through the MOOCs' homepage in the UT's website, prospective participants can select any course they want to take. Each course offered is accompanied by a brief description (Figure 2) to help potential participants understand the courses being offered.
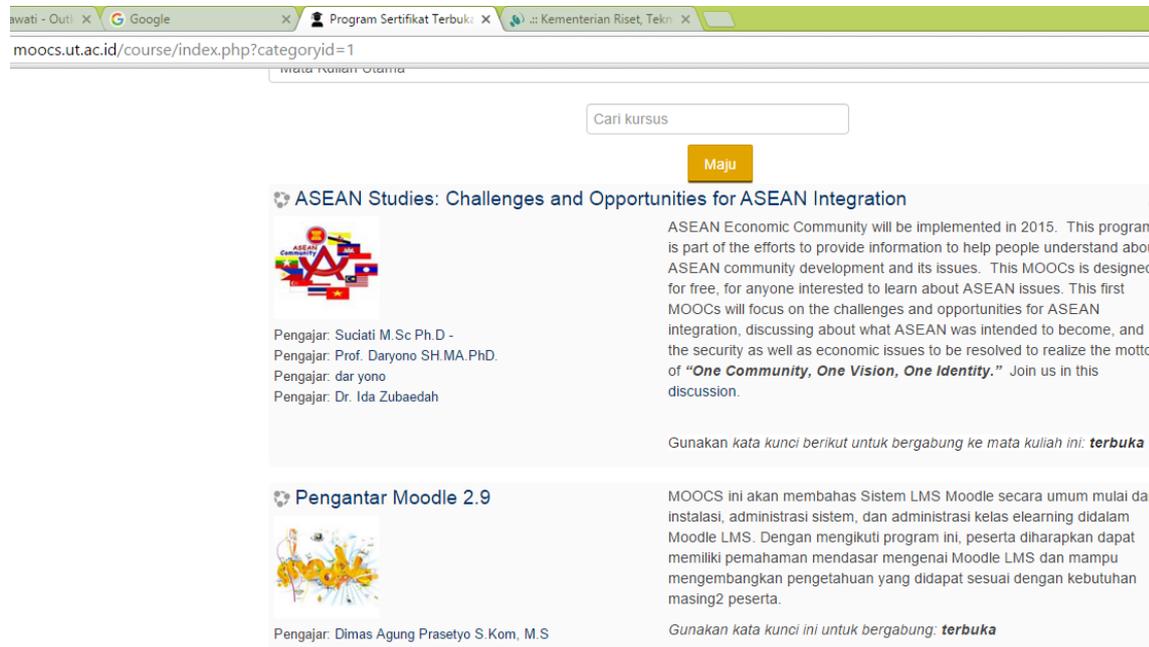

Figure 2: Sample of Course Description of MOOCs-UT

The Design of MOOCs-UT

MOOCs-UT learning materials are designed to be delivered within 4 to 6 weeks period of instruction. Since MOOCs are massive in nature, the LMS platform i.e., MOODLE 2.8 was chosen to accommodate large number of participants. The reason for selecting the MOODLE 2.8 version is that UT has actually been using the LMS for the purpose of online tutorials, so the tutors in charge are familiar with operating the LMS.

Learning Materials Development

The selection of both courses and topics for the MOOCs is carried out by the Dean and the head of the study programme on the basis of courses that are taken by many students as an indicator that those courses will be popular among the general community. Having selected certain courses, the topics are then determined in order to develop the learning materials by considering the availability of tutors, as well as the attractiveness of the topics, into account. The materials provided largely depend on the target competencies to be achieved. The use of audio visual media is very important in the learning process of MOOCs as most of the given materials are not only concept-based but also more skills-oriented.

The learning materials of MOOCs are developed from existing courses by selecting interesting concepts which are then supported by enriched materials. The process of materials development is conducted by a team of lecturers from each Faculty, assisted by both media and IT specialists. The lecturers who are content experts are actually the course managers who master learning pedagogies. Since MOOCs are entirely delivered online, the involvement of IT and media specialists is very important to help select the appropriate

media in order to add illustrations or explanations to various subject-matter concepts. The media can take the form of text, PowerPoint slides, images, photos, or audio video materials. All types of media are taken from the OER materials developed by UT and other institutions that are available on the Internet.

Learning Process

The interactive activities using features available in the LMS MOODLE 2.8, start from uploading the materials in various formats (i.e., video, audio, images, animation, text, etc.), giving comments to each posting, up to conducting the discussion. The interaction is asynchronous which means that the interactions between participants and tutors do not take place at the same time (real time). To encourage and stimulate the discussion, each tutor is required to provide learning materials at least twice a week. Time spent in one session of learning depends very much on the target objectives. It is recommended that they spend around 1 to 2 hours to do the learning activities under each initiation. The discussion forum is the determining factor in whether the participants will stay until the end of the programme, in addition to how interesting the delivered materials are as well as the expected competencies that the participants wish to achieve.

Each MOOC is generally managed by two or three lecturers acting as a Team of Tutors, who are responsible for the MOOC. The roles of the lecturers in the MOOC learning process largely determine the overall quality of MOOCs, ranging from writing course descriptions, identifying target competencies, developing materials of initiation, selecting types and content of the media, conducting discussions and interaction with the participants, as well as identifying types of assignments and administering a final test during the learning process.

Assessment and Certification

Participating in MOOCs is voluntary and there is no obligation for the participants to attend MOOCs until the end of the programme. However, if the participants wish to receive a certificate, then they must meet graduation requirements, such as actively participating in the discussion forum and completing all the given tasks. Assignments which are in line with the target competencies are given at the end of each initiation. In some MOOCs, a final assignment or exam is also given, apart from the assignment given at the end of each session. The types of MOOCs-UT assignments and exams offered are dependent of the respective developers, who also act as a tutor. Courses with skilled-based competencies, such as *Marketing Management*, *MOODLE* 2.9, and *Public Speaking,* would generally have essay tests, or assessment in the form of portfolios. The final grade comprises both participation (30%) and assignment/exam (70%). A combination of the two should be at least 50% of the maximum grade in order for the student to earn a certificate.

The Implementation of MOOCs-UT

MOOCs-UT was first offered in Semester 2 of 2014 (i.e., 2014.2) consisting of five courses which represented four faculties across UT, namely *Public Speaking* (Faculty of Political and Social Sciences), *Marketing Management* (Faculty of Economics), *English for Children* (Faculty of Teacher Training and Education), and *Food Processing* (Faculty of Mathematics and Natural Sciences). The first offer of MOOCs-UT managed to attract the public interest. As seen in Table 2, there were 3,476 participants enrolled since its introduction in May until August of 2014. Public interest towards the new programme, supported by fairly intensive publicity on different platforms, significantly contributed to a higher number of registered participants.

Table 2: The Number of MOOC-UT Participants and Graduates in 2014.2

NO	MOOC Topics	Number of Participants		
		Participants	Received Certificates	%
	Public Speaking	965	107	11.1
	Manajemen Pemasaran (Marketing Management)	907	53	5.9
	English for Children	648	82	12.7
	Pendidikan Jarak Jauh (Distance Education)	488	64	13.1
	Aneka Pengolahan Pangan (Food Processing)	468	118	25.2
TOTAL		3.476	424	12.2

Table 2 shows that among the 3,476 participants from the five courses, there were only 424 participants who persisted and received certificates accordingly. The *Food Processing* programme had the highest number of graduates, which was 25.2%, whereas the *Marketing Management* programme had the lowest number of graduates, which was slightly below 6%. On average, the level of completion of MOOCs-UT was just 12%. This figure is relatively good compared to the experience of other MOOCs providers in many parts of the world, which was only around 5% (Belawati, 2014).

Based on the community's fairly high interest, in the semester 1 registration period (i.e., 2015.1), UT offered eight new courses: *English for Translation*, *Research Methods*, *Business Administration*, *Archives*, *Public Administration*, *Governance Studies*, *Taxation*, and *Law*. The reason for adding more courses was to provide the community with various choices of courses. In fact, diversifying and increasing the number of MOOCs offered does not correlate with increased number of participations. The number of participants of each course was very small, around 11 to 69 participants. Moreover, six out of thirteen courses offered had a relatively small number of participants who managed to complete the courses, which was between 3% and 41%. The other seven courses, nonetheless, had no participants who managed to complete their course. (Table 3). The decrease in the number of participants of MOOCs-UT is due to the fact that the time allocated for publicising the programme was rather short (from the offering date until the registration deadline) as opposed to the time allocated in the previous semester. Based on the experience in the first two semesters, in the following semester (i.e., semester 2 of 2015), UT reduced the number of MOOC offered to only seven courses; six courses were those of existing programmes and one course was part of the new ASEAN Studies programme, with English as the language of instruction.

Table 3: The Number of MOOC-UT Participants and Graduates in 2015.1

No	MOOC Topics	Number of Participants		
		Participants	Received Certificates	%
	Public Speaking	69	28	40.6
	Manajemen Pemasaran(Marketing Management)	47	4	8.5
	Pendidikan Jarak Jauh(Distance Education)	33	3	9.1
	English for Children	30	1	3.3
	Aneka Pengolahan Pangan (Food Processing)	24	4	16.7
	Ilmu Hukum (Law)	12	4	33.3
	English for Translation	10	0	-
	Metode Penelitian(Research Methods)	9	0	-
	Administrasi Bisnis(Business Administration)	8	0	-
	Kearsipan (Archives)	9	0	-
	Administrasi Negara(Public Administration)	9	0	-
	Ilmu Pemerintahan(Government Studies)	12	0	-
	Perpajakan (Taxation)	11	0	-
TOTAL		283	44	15.5

The success of attracting public interest in MOOCs seems to be affected by several factors, such as the interesting topics available in the MOOCS and also sufficient amount of time devoted to the programme publicity prior to their implementation. The majority of participants of MOOCs-UT are employees whose purpose in taking the online programme is to increase their knowledge in areas that might be useful in their workplace. Enriching relevant concepts and the learning materials with interactive videos to upgrade the participants' skills seem to be a very important aspect of developing MOOCs materials. Promotion and publicity announcements should have been made as early as possible so that members of the community have plenty of time to access and utilise the programme. The survey shows that the promotion of MOOCs through the UT website proves to be fairly effective. Around 49% of the participants obtained information about MOOCs from the UT website, while the other 39% of them received the information from the Google search engine, and only 12% found out the information from their friends (Refer Figure 3). However, the promotion through the national television station (TVRI), which is capable of reaching those participants in remote areas, is considered as an effective way since this can reach a wider range of the community.
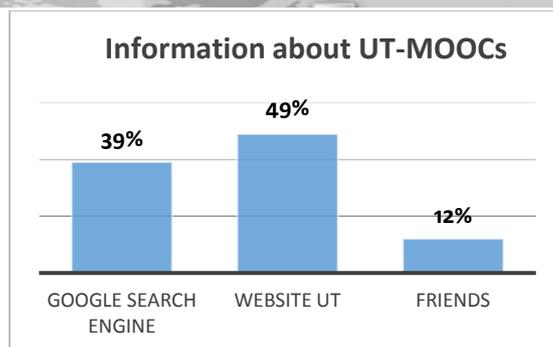
Information about UT-MOOCs

Figure 3: MOOCs-UT Website

MOOCs-UT EVALUATION SURVEY

To understand the characteristics of MOOCs participants and their expectations, an online survey was conducted involving MOOCs participant in the second semester of 2015.

Figure 4: MOOC-UT Participants

Figure 4 shows the characteristic of MOOCs-UT participants in regards to where and how they accessed the programme. The survey shows that 74% of participants were located in district areas and 26% in a province. This fact indicates that the internet connection and facilities of internet access has become more and more accessible across the country, especially in the district areas. However, the survey results do not show the exact location or island of the participants. The question on participant location would have to be more specific for future use. Most of our participants accessed MOOCs from home (66%), followed by from the office 18%, and from internet kiosks (14%).

The survey also focused on the background and characteristics of the participants. As seen in Figure 5, most participants of MOOCs-UT are those employed in various sectors, such as being private employees (51%), employers (25%), and government employees (12%), while 12% of them are unemployed. In addition, Figure 5 also reveals that participants have different educational backgrounds; 74% of them are high school graduates while the other 24% are both Bachelor's and Master's degree holders. This is a very interesting figure in comparison with the characteristics of MOOCs participants from other parts of the world, where the participants are mostly degree holders (Ho et al., 2014; McKenzie, 2014). Figure 5 also shows that 74% of the participants are those aged between 25 and 40. It can be concluded that MOOCs-UT participants are mostly working adults who may have limited time to find MOOCs materials and would need a simple way to access our MOOCs.
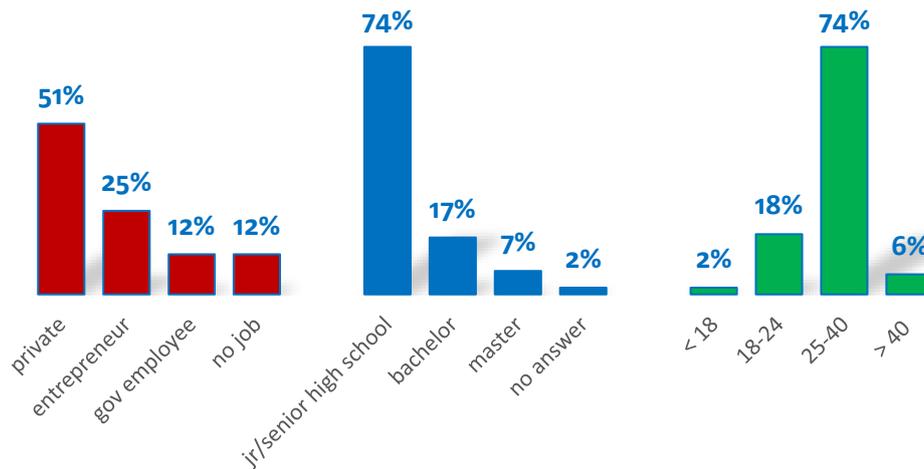
Figure 5: MOOC-UT Participant by Sector, Prior Education, and Age

Since the majority of MOOC participants are employees, the results also indicate that 65% of MOOCs-UT participants are taking the course to upgrade their knowledge, whereas only 35% of them have the aim of obtaining a certificate. As for the suitability of the materials and the expected competencies of MOOCs, 71% of the respondents stated that the materials are in line with the expected learning outcomes. Conversely, 27% of respondents stated that only some parts of the materials are appropriate, while another 2% of participants stated that the materials presented do not match their own expectations (Figure 6). These results, of course, pose challenges for UT to improve the quality of the materials, the process of learning, as well as the interactions in order to achieve the expected results.
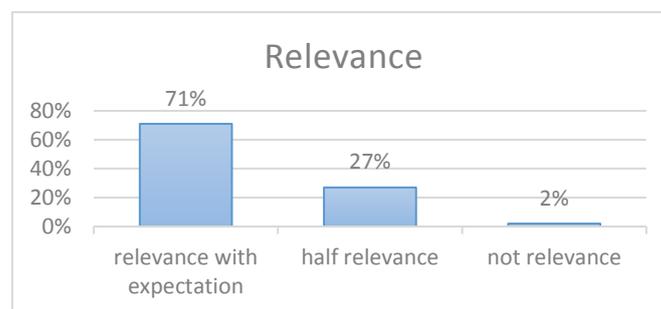

Figure 6: Relevance of MOOCs materials with participants' expectation

Apart from the efforts made to improve the quality of MOOCs, UT also collaborates with other institutions, including with UNESCO and IndonesiaX, in order to extend the outreach of MOOCs-UT. In addition, UT also has a collaboration with IndonesiaX starting from August 2015. IndonesiaX is a non-profit organisation which manages and runs MOOCs offered by several universities and institutions, such as the University of Indonesia (UI), Institute Technology of Bandung (ITB), Universitas Terbuka (UT), Rumah Perubahan, PT Bursa Efek Indonesia, and PT Net Mediatama Televisi. UT offers a MOOC in *Public Speaking* through the IndonesiaX, which is one of the most popular MOOCs offered by UT. Intensive promotion of IndonesiaX, through various kinds of media, including TVRI, which can reach those who live in remote areas across Indonesia, has been able to attract more than 20,000 participants; of whom around 2,200 were *Public Speaking* participants. Until 2015, IndonesiaX has offered nine MOOCs, namely:

(1) Information Security: Protecting your Information in the Digital Age (Institute Technology of Bandung)
(2) Introduction to Engineering and Design (University of Indonesia)
(3) Economic Integration: Case of ASEAN (University of Indonesia)

    (4)   Cyber Law: Rights and Obligations (University of Indonesia)
    (5)   Public Speaking (Universitas Terbuka)
    (6)   Change Management (Rumah Perubahan)
    (7)   Self-Driving: Are you a driver or a passenger (Rumah Perubahan)
    (8)   Introduction to Broadcasting for Television (Mediatama Televisi)
    (9)   Introduction to Stock Exchange (Bursa Efek Indonesia)

The collaboration with UNESCO is intended to promote UT's Master's degree programme in ASEAN Studies through the UNESCO website, as well as in association with the implementation of the ASEAN Economic Community commencing early 2016. The Master's degree Program in ASEAN Studies was developed in conjunction with five open universities in the ASEAN member countries (i.e., Malaysia, Thailand, Philippines, Cambodia, and Indonesia). Five open universities collaborated and developed a shared curriculum and learning materials for all the courses offered in the Master's degree Programme in ASEAN Studies. While waiting for the permission from the appointing higher education authority for opening up the Master's degree programme in Government Studies, UT offers the ASEAN Studies programme as an *Advanced Course Programme,* in which courses can be taken separately by the participants. These courses are promoted in the UNESCO website in pdf format as *open courseware* that can be accessed by the public for free. The ASEAN Studies MOOC on the UNESCO website is officially offered around mid-2016 using the Open Edx platform.

CONCLUSION

Universitas Terbuka is one of the first universities in Indonesia to offer MOOCs for the community. The offered MOOCs are basically a breakthrough conducted by UT with regard to its community services. The experience in offering and running the MOOCs model over the last three semesters suggest MOOCs-UT still needs improvement in terms of both the quality of the materials and also the learning process. In order to increase the retention rate and the number of graduates, factors such as the quality of tutors and interactions become important. Learning activities should be more interesting and the participants can be encouraged to be interactive if tutors provide immediate feedback. The tutors need to be more responsive and quicker in giving accurate answers so that the participants will be more interested in the topics of discussion. Intensified learning process to achieve the target competencies can partly be done by utilising videos. UT needs to develop video-based materials of MOOCs by using video format by making use of the Open Edx platform. In order to increase the participants' motivation to actively participate in the learning process and receive the certificates in the end, UT also needs to consider a recognition scheme for the Certificates of Graduation of MOOCs in the form of a credit transfer to the degree programmes available at UT.

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