TOWARDS MOOC AND OER: THE CHALLENGES AHEAD

Jowati Juhary[1*], Mohd Sharil Salleh[2]

[1]Language Centre, National Defence University of Malaysia,
Sungai Besi Camp, 57000 Kuala Lumpur, Malaysia
jowati@upnm.edu.my
[2]Centre for Academic Development, National Defence University ofMalaysia,
Sungai Besi Camp, 57000 Kuala Lumpur, Malaysia
sharil@upnm.edu.my
[*]Corresponding Author

ABSTRACT

The recently launched Malaysia Education Blueprint (Higher Education) has seen bold steps to improve and strengthen higher education quality in the country. Particularly challenging for the youngest public university, the National Defence University of Malaysia (NDUM) is embracing all 10 shifts outlined in the blueprint. This paper aims at examining the roles of and challenges faced by academics in adopting technology for teaching and learning. Looking at the scenario at the NDUM today, it appears that the academics are still uncertain about adopting the current learning management system (LMS) for aiding their teaching processes. The methodology used in this paper is mainly content analysis of existing policy documents. A brief survey was also conducted among academics and the data was used to support the arguments and findings from the content analysis. Initial findings suggest that the academics themselves, who attended the training on using the LMS, were not confident to teach other colleagues. What can be discerned from this is perhaps the level of readiness or acceptance towards the use of technology in teaching and learning is still low. If this persists, Massive Open Online Course (MOOC) and Open Educational Resources (OER) may be a daunting objective to be achieved at the NDUM.

Keywords: LMS, MOOC, OER, teaching and learning

INTRODUCTION

The recently launched Malaysia Education Blueprint (Higher Education) has seen bold steps to improve and strengthen higher education quality in the country. Particularly challenging for the youngest public university, the National Defence University of Malaysia (NDUM) is embracing all 10 shifts outlined in the blueprint. For a start, all higher learning providers must have a platform to allow teaching *with* technology, thus the term LMS becomes significant. A Learning Management System (LMS) refers to the platform used to operate online content and courses. Bates and Sangra (2011) claimed that LMSs are the main driver of e-learning in tertiary education. This is because about 90% of tertiary providers in the United States have LMSs (Lokken & Womer, 2007). In Malaysia, LMSs are *obligatory* for public and private higher learning institutions. Some tertiary providers in Malaysia prefer to use open source platform of the LMS such as Moodle. Universiti Teknologi Malaysia and Universiti Malaysia Sarawak are two public universities that utilise Moodle. As for the National Defence University of Malaysia (NDUM), its LMS was purchased at the end of 2009 from a private vendor.

This paper aims at examining the roles of and challenges faced by academics in adopting technology for teaching and learning. The main objective is to investigate the readiness of academics to be involved in Massive Open Online Course (MOOC) as stipulated in the newly launched Malaysia Education Blueprint (Higher Education), which highlights the need for Malaysia to offer quality online courses through MOOC. In so doing, this paper is arranged into four main sections including this introduction. The second section reviews the literature on LMSs as well as MOOC and OER, and the third section analyses and discusses the findings. The last section concludes the discussion of this paper. Before moving further, the next sub sections look at the defence university and the methodology adopted in this paper.

The National Defence University of Malaysia (NDUM)

The NDUM was gazetted by the Malaysian Parliament in November 2006 to replace the Military Academy of Malaysia (MAM). The MAM was a smart partnership between the Ministry of Defence, Malaysia, which

provided military training, and Universiti Teknologi Malaysia, which provided academic support. The change of status marks the shift of focus from just producing *mere* engineers for the Malaysian Armed Forces (MAF) to producing 'intellectual leaders of character'. After nine years of existence, the most important aspect that *may be* of question is the teaching and learning component, especially on the adoption of new technologies. Much of this lack of adoption could be contributed to the lack of resources and lack of experience in using new technologies. Suffice to say at this point that in order to produce graduates for the MAF, students must be exposed to the use of technology, and they must be comfortable using it whenever necessary.

METHODOLOGY

The methodology used in this paper is mainly content analysis of existing policy documents. These include the draft of the e-Learning policy, ICT policy as well as human recourses policies and guides. The researchers' opinion is that, as a brief paper, content analysis of documents is sufficient at this stage. Data from the Centre for Academic Development were also used to support the discussion in this paper. These data include the number of trainings conducted, the number of academics who attended the training and the number of academics who have uploaded their materials on the LMS. Furthermore, a brief survey was also conducted among academics and the data was used to support the arguments and findings from the content analysis. This survey was conducted after a Training of Trainers (ToT) session for using the LMS for e-Learning committee members at the NDUM. As a result, the number of respondents for the survey was small with only 14 respondents.

The items in the questionnaires were adopted from an online survey on the use of LMSs. For the purpose of this paper, there were six main questions that includes issues on the use of the LMS at NDUM and issues on the training for the use of the LMS. Two types of likert scale were used; for basic questions, a-two likert scale of "Yes" and "No" was used. For others, a-five point likert scale was used with 1 being "Strongly Disagree" and 5, "Strongly Agree." The data were then analysed using the Statistical Package for Social Sciences (SPSS) Version 18. The data analysis only includes frequency statistics, which will be reported in the third section of this paper.

LITERATURE REVIEW

LMSs allow education providers to incorporate important elements of teaching and learning (Dalsgaard, 2006). The main function of any LMS is to facilitate course management and give students the benefit of having supplementary tools for learning. During the early years of LMSs, many institutes of higher learning were sceptical about the use of any online platforms to assist teaching and learning. The issues involved governance, management and technical supports as well as professional development (Benson & Palaskas, 2006).

The Beginning of LMSs

The first two popular LMSs were WebCT and Blackboard. An instructor at the University of British Columbia created a "standard Web-based shell or learning management system" or what was then known as WebCT (Bates & Sangra, 2011). WebCT integrated spaces for learning objectives, for developing content, for uploading documents and for testing students using multiple choice questions. Universiti Teknologi Malaysia was once a user of WebCT. Nonetheless, the university opted for Moodle in 2004 for economic reasons.

WebCT was then bought by Blackboard. Blackboard was founded in 1997 by Pittinsky and Chasen. Blackboard is used by more than 70% of colleges in the United States (Bradford et al., 2007). In Malaysia, Universiti Tun Hussein Onn, a public university, is currently using Blackboard as its LMS (Embi, 2011). Sunway University College in Malaysia too is utilising Blackboard. Out of 20 public universities in Malaysia, it appears that only one university uses Blackboard and out of hundreds of private institutions in Malaysia, only one uses Blackboard. What this implies is that maybe Blackboard is too expensive, and thus it is not prevalent in Malaysia.

This scenario leads to the use of open source which is free such as Moodle. The next sub section examines this.

What Happened Next? – Open Source LMSs

Moodle is fast becoming a dynamic LMS in Malaysia. According to Embi (2011), out of 20 public universities, nine use Moodle as the LMS. In fact, Moodle is the leading open source in North American and European universities (Itmazi & Megias, nd). The factor that drives this is mainly because of the zero cost implication to these higher learning institutions. Other than its free nature, Moodle is attractive because of other aspects explained next. Beatty and Ulasewicz (2007) argued that Moodle is much more interactive than Blackboard. Additionally, most courses offered online use Moodle as a supplementary learning tool. This is supported by Martin-Blas and Serrano Fernandez (2009) who argued that Moodle as a LMS has helped to reinforce students' abilities and knowledge. They further concluded that Moodle is the best platform for educators to "organise, manage and deliver contents."

In addition, Moodle happens to be an effective tool for evaluation. Suchanska and Keczkowska (2007) further suggested that Moodle changes the roles of educators and students in classrooms. The teaching and learning becomes more enriched because various multimedia are used. Moodle too is perceived favourably by library officers in a study conducted in Italy (Fontanin, 2008). According to Fontanin (2008), the English course developed to train in service librarians was a success because the platform used to deliver the course is effective.

Given this constructive acceptance of Moodle, one may wonder whether it is suitable for all courses at all levels. The bigger question is whether all higher learning providers can really benefit from using Moodle as their LMS. While much has been argued about this, this paper focuses solely on a customised LMS purchased from a local vendor and now installed at the defence university. What is happening to this LMS after six years of existence at the NDUM? Should the defence university shift to Moodle? An even more critical question is, in the advent of MOOC in the Malaysian education landscape, what will happen to the existing LMS? Unfortunately, this paper is not able to answer all these critical questions. These could be the research questions in the next research. The focus now is on looking at the future of online learning. The next sub section discusses the birth of MOOC.

The Future of Online Learning – OER, OCW and MOOC

The democratisation of education has strengthened the need for education providers to expand their services to anyone regardless of their locations. Various movements are actively promoting equality in education. First coined in 2002, the Open Educational Resources (OER) movement allows those who are in quest of knowledge to benefit from learning materials and contents freely available online. The aim of OER is to provide more equal access to knowledge and educational opportunities (Lim, 2011). What OER offers are educational materials that are made "freely and legally available on the Internet for anyone to reuse, revise, remix and redistribute" (*White Paper: Open Educational Resources: Breaking the Lockbox on Education*, 2013). Some useful OER sites are Open Courseware Consortium, MIT; Carnegie Mellon Open Learning Initiative and OpenLearn, OUUK. Currently, there are nine OER initiatives by Malaysian public universities (Embi, 2013). According to Embi (2013), there are other institutional OER initiatives in Malaysia, including Wawasan Open University and Open University Malaysia.

Consequently, providers of contents and learning materials are not only disseminating knowledge but they are also offering free courses online to the general public. The free courses and materials can be used by other academics and students alike as academics can place the links of the OER in the LMS, and students can also explore various learning materials elsewhere.

There are various types of OER, and one of them is Open Courseware (OCW). OCW could be defined as learning materials that are organised as complete courses including the assessments. According to Caswell (2009), OCW has several institutional benefits such as showcasing the institution educational quality, connecting to students before, during and after enrolment and promoting the researchers and faculties' intellectual works.

The acceptance and usefulness of OER and OCW have led to another buzz concept, MOOC. MOOC emerged from OER movements. Since its inception in 2008, MOOC has become an alternative platform for online learning rapidly. This can be seen in many instances where tertiary education providers started to inaugurate their MOOC initiatives. For example, in 2013, Taylor's University, Malaysia began to offer courses through MOOC.

Recently, another university, Universiti Putra Malaysia has also launched its MOOC initiative called PutraMOOC in April 2014.

Regardless of the critiques on MOOC (see Delbanco, 2013; Gans, 2014), this latest development has sparked the interest and determination of the Ministry of Education, Malaysia in utilising MOOC. In their monthly speeches to the representatives of the universities, and during various meetings and gatherings at the ministerial level, the Minister of Education II, Malaysia and the Secretary General II of the Ministry have put a great emphasis on the involvement of Malaysian tertiary education providers in MOOC. For example, in 2014, the Ministry has initiated four pioneer MOOCs, developed by four public universities, including Universiti Putra Malaysia, Universiti Malaysia Sawarak, Universiti Kebangsaan Malaysia and Universiti Teknologi Mara. These MOOCs, which are TITAS, Introduction to Computing, Ethnic Relations and Entrepreneurship use Open Learning (https://openlearning.com) under Malaysia MOOC as the platform. In fact, by 2015, all public universities will need to upload the e-content of their courses to a yet to be identified online learning platform. What this means is that the government is adamant about the use of not only digital technologies but also the concept of resource sharing and content development.

FINDINGS AND DISCUSSION

This section presents the findings of the content analysis of policy documents as well as the data from the survey and the Centre for Academic Development. Simultaneously, discussion on relevant issues will also be made. As previously mentioned, three main documents were analysed in order to identify the roles of academics and challenges they face in teaching with technology. The first document is the e-Learning Policy of the defence university. The policy was recently presented to the Committee of Academic Development and Management, and was presented for further approval at the Senate of the defence university. The policy outlines critical aspects of using e-learning at the NDUM. The policy emphasises the roles and functions of different bodies in the university; particularly important for this paper is the roles of academics on adopting technology for teaching and learning. There are eight roles of academics on using e-learning as listed below:

1. All academics are responsible for increasing the use of and enhancing the quality of content. These contents must be uploaded to the LMS in stages depending on the needs or whenever necessary.

2. All lecturers are responsible for the materials uploaded to the LMS.

3. All lecturers must ensure that the materials uploaded are relevant to the course and are of high quality.

4. All lecturers must ensure that the materials uploaded to the LMS are not in violation of any copyrights, intellectual properties and must be free of plagiarism.

5. All lecturers must provide appropriate feedback to students on the online forum.

6. All lecturers are responsible to safeguard students' work.

7. All lecturers must evaluate and assess students based on the postings/ assignments/forum/emails on the LMS.

8. All lecturers must go through the training and workshops relevant to the use of the LMS, or its tools organised by the Centre for Academic Development, Centre for Information Technology and Communication and/or any other agencies.

What can be discerned from this document is that the NDUM is serious about making technology part of teaching and learning since the roles of academics are clearly outlined in the policy.

The second document analysed, nonetheless, fails to support the significance of teaching with technology. The Information and Communication Technology (ICT) Policy was presented and approved by the University's EXCO (Executive Committee) on 14th January 2015. This policy mainly outlines the importance of ICT on the running of the defence university especially on the data security and management and development of ICT. The search for the key word 'teaching' only resulted twice. The same goes to the word 'learning,' which only appears two times too. What

this suggests is that there is an inconsistency of accepting the importance of technology in the teaching and learning process. This inconsistency also appears in the documents on human resources (academics) on the utilisation of technology. The most obvious loophole is the fact that there is no indication of e-learning or teaching with technology in the annual appraisal form; this suggests that no marks will be awarded to those who are actively developing e-content for the LMS. Further, the promotion exercise too has no marks awarded for using the LMS. It can be argued that this may be one of the factors that hinder academics from using technology in their teaching, or from utilising the LMS.

Table 1 below summarises the data from the survey. The respondents were asked four basic questions. Based on the table, it appears that all respondents were first timers to the LMS training. A few of the respondents felt that the LMS was quite difficult to be used (mean = 1.21), and a handful of the respondents were not going to use the LMS in the coming semester (mean = 1.15). When asked whether the respondents are able to coach other academics, most of them answered "No" (mean = 1.64). What can be concluded from the table is that these respondents are in need of more training on the use of the LMS, despite their roles as the e-learning committee members or champions at their respective faculties.

Table 1: Data on the Survey (Basic Questions)

		First time attending training	Easy to Use the LMS	Use the LMS next semester	Can coach others to use the LMS
N	Valid	14	14	13	14
Mean		1.00	1.21	1.15	1.64
Std. Deviation		.000	.426	.376	.497

Table 2 below illustrates the responses about issues on the LMS. Most respondents opted for likert scales of 2, 3, 4 and 5 for Item 1, 2, 3, 4 (the means range from 3.29 to 3.71). For Item 5, 6, 7 and 8, the respondents opted for all scales including 1 (the means range from 1.93 to 2.79). In considering Item 5, for example, it is understood why some respondents chose "Disagree" or "Strongly Disagree" (*I have some technical problems with the LMS*). This shows that some were having technical problems with

the LMS, and some were not. The same goes for Item 6 (mean = 1.93) which suggests that the respondents were not worried about logging in to the LMS. The most important finding from this table is that most respondents were confident that the training has allowed them to perform functions such as uploading material and creating assessments on the LMS (mean = 3.71 for both Items 3 and 4). As academics, these two are of the utmost importance because the roles of academics, as stipulated in the e-Learning Policy, also emphasise these, amongst others.

Table 2: Data on the Survey (Issues regarding the LMS)

		1	2	3	4	5	6	7	8
N	**Valid**	14	14	14	14	14	14	14	14
Mean		3.50	3.29	3.71	3.71	2.79	1.93	2.50	2.57
Std. Deviation		.760	.914	.611	.726	1.251	.917	.941	.852
Minimum		2	2	3	2	1	1	1	1
Maximum		5	4	5	5	5	4	4	4

1. Can use the LMS independently after the training
2. The LMS is user-friendly
3. The training is sufficient to allow for uploading of materials
4. The training is sufficient to allow for creating of assessments
5. Technical problems with the LMS
6. Problems logging into the LMS
7. Problems uploading materials
8. Will be able to trouble shoot should there be problems with the LMS

Table 3 below summarises the findings on the training of the LMS. It appears that the respondents were interested in learning about utilising the LMS when most of them opted for scales between 3 and 5 for Items 3, 4 and 8. The researchers argue that the level of competency for each academic is different, resulting in some respondents, who felt that it is not necessary to spend more time on some of the modules in the LMS. The highest mean is for "More time for Assessment Manager," 4.14, which indicates that this is the area in the LMS that the academics are not confident of using. The Assessment Manager, in actual fact, has two layers of management. The first is the Quiz Bank layer, where all questions will be stored, based on topics or weeks. The second layer is where the academics need to assign the questions in the Quiz Bank to their appropriate test sequence.

Table 3: Survey Data (Training of the LMS)

		1	2	3	4	5	6	7	8
N	**Valid**	14	14	14	14	14	14	14	14
Mean		3.79	3.50	4.14	3.93	3.21	3.14	3.21	3.93
Std. Deviation		.699	.855	.663	.616	1.051	.864	.893	.730
Minimum		2	2	3	3	2	2	2	3
Maximum		5	5	5	5	5	4	4	5

1. The module is easy to understand
2. Time for training is adequate
3. More time needed for the Assessment Manager
4. More time needed for the Assignment Manager
5. More time needed for the Notes Manager
6. More time needed for the Document Manager
7. More time needed for the Forum Manager
8. More time needed to explore the LMS during training

Supporting all the findings from the tables above are some data generated by the Centre for Academic Development on the number/ percentage of academics who have started to use the LMS for Semester 2, Academic Session 2014/2015 and the frequency of training together with the number of academics who attended the LMS training. The first set of data shows the percentage of academics (excluding those from the Medical faculty; Foundation centre and on sabbatical/post-doctoral/study leave) who have at least 30% of the teaching materials uploaded on the LMS as of April 23, 2015, which amounts to only 21% (40 of 191 academics). The researchers argue that this percentage will increase in due time since most of the academics are uploading their materials based on topics, themes and weeks. This is because at the time this paper was being written, it was only the 7th week of the semester. Thus, it is foreseeable that more academics will be uploading the required materials on the LMS as time goes by.

The second set of data is illustrated in Table 4 below. The series of training were conducted according to faculties. This, supposedly, would open up more opportunities for the academics to share ideas and notes on developing their materials to be uploaded. These training sessions were held twice (Levels 1 and 2) for all faculties except for the Engineering faculty. Based on the table, it appears that *not all* academics were able to attend the

LMS training sessions due to factors that cannot be explained in this paper. Nonetheless, it shows to some extent that there is some resistance to using the LMS. More research is needed to look into this matter.

Table 4: Data on LMS Training Sessions

Year/Number of Academics*	2013**	2014**	2015
First Level	17	92	0
Second Level	0	63	18
Total	17	155	18
Grand Total		190	

* These academics may have attended both Levels 1 and 2

** The numbers include those from all faculties and academic centres except for Foundation centre

CONCLUSION

This paper aims at examining the roles of and challenges faced by academics at the NDUM to adopt the LMS as part of their teaching and learning repertoire. The researchers opine that the academics have mixed opinions and feelings about using the LMS. The resistance may be contributed to various factors. One of them is the fact that albeit the university's e-Learning Policy that promotes the use of technology, the ICT Policy and the Human Resources documents have not taken into consideration the efforts to utilise technology in the teaching and learning process. If measures are not taken to address this issue, the vision of the Ministry of Education, Malaysia to see the NDUM produce MOOCs and OER may not materialise. Even if there are some academics who are keen to develop MOOCs and OER at the NDUM, without appropriate support from the top management, middle management as well as peers, it would be a daunting task to accomplish, and yet, a rewarding one once the original contents and materials are ready and complete to meet and satisfy the needs of the students.

To conclude, clearly the roles of the academics at the NDUM must be spelled out not only in the e-Learning Policy, but all relevant policies that involve teaching and learning. Without proper guidance, it will be a

massive challenge for the academics to determine and achieve their Key Performance Indexes (KPIs). Perhaps, this is one of the many factors that stops the academics from using the LMS; neither the policies nor documents clearly stipulate the terms and conditions except for extracts from minutes of meetings that direct the academics to utilise the LMS.

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