

STUDENTS' READINESS AND COMPETENCE IN MOOCS IN HIGHER EDUCATION: A CASE STUDY

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Higher learning institutions are moving rapidly to reach out to universal learners by offering open education for all. In keeping with this global effort, Malaysia is committed to provide a holistic open access education that enables learners to access knowledge through internet facilities and will soon be the first country in the world to develop a national policy on credit recognition for the Massive Open Online Courses (MOOCs) platform. On that note, students must be ready and competent for this new form of education. However, very few studies have been conducted in relation to students' readiness and competence in utilizing of MOOCS. Hence, a descriptive-correlational research was employed to investigate students' readiness and competence in using MOOCs in higher education. A total of 26 students participated in this case study. The findings revealed that students' readiness and competence in using MOOCs was still at a moderate level. However, the study also revealed a positive, moderate and significant relationship between students' readiness and competence in using MOOCs. The findings indicated that awareness towards MOOCs among students in higher education institutions has to be further improved for the realization of Shift 9 of the "Globalised Online Learning" endeavour as outlined in the Malaysian Education Blueprint (Higher Education) 2015-2025.

Keywords: Students, Readiness, Competence, MOOCs, Higher education

I. INTRODUCTION

Instructional methods have evolved tremendously from attending classroom learning within the campus to online learning of out-campus in the early 21st century (Cole & Timmerman, 2015). The introduction of the concept of distance learning into our teaching systems is remarkable. Distance learning, sometimes called e-learning, is a formalized teaching and learning system specifically designed to be carried out remotely by using electronic communication. It is less expensive to support and is not constrained by geographic considerations as well as offers opportunities in situations where traditional education has difficulty operating. Students with scheduling or distance problems can benefit from distance education due to more flexible learning in terms of time and method. Advances in technology have made it possible to deliver education in an innovative manner. Based on this development, online learning or popularly known as e-learning has become a trend for long distance students, especially with the support of technology advancement. Nevertheless, long distance online learning requires expensive technology has its restrictions in reaching global participation. Thus, education institutions are looking for a new platform for online learning that can offer unlimited participation of

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students to increase the quality of learning. This new platform of online learning has been manifested as Massive Open Online Courses or shortly known as MOOCs to improve the quality of online education.

MOOC platforms provide institutions with cloud-based hosting capacity for delivering courses, offering scale and functionality while the institution provides the course material and reputational value. Studies from Allen *et al.* (2004) and Allen *et al.* (2013) have found online delivery offers various advantages over traditional instructional methods because it increases the effectiveness of distance learning and student satisfaction. Hence, MOOCs as an innovation in instruction are introduced and it is slightly different from traditional online courses. In fact, MOOCs play a significant role in improving the quality of education around the globe. This is evidenced by the high number of enrolment and the abundance of courses in various fields of study at practically no cost at all for the students. Hence, MOOCs have been widely acknowledged as an avalanche of transformation in learning in higher education (Selwyn *et al.*, 2015; Cole & Timmerman, 2015; Bates, 2014). In MOOCs, students can arrange their own time and pace in attending online classes. Students who attend MOOCs are engaged in a true self-instructional device compared to a course delivery format of traditional online course (Cole & Timmerman, 2015). A variety of media can be used to offer free sharing of learning among the participants. Thus, Bremer (2012) has found that MOOCs are capable of expanding students' motivation in learning.

However, MOOCs have been continuously discussed and criticised as not many studies have been done on how well students are ready to take up the MOOCs and increase their competence in attending online learning courses. It is unclear how well prepared tertiary students are in accepting MOOCs as a source of learning. Some earlier studies have even proved that high dropout rates among MOOC students in which completion rate has been reported to be as low as 10% (Pence, 2012; Hew & Cheung, 2014). Hence, this study has been conducted to uncover students' readiness and competence in using MOOCs at a higher learning institution in Malaysia.

II. LITERATURE REVIEW

Open learning is an online learning platform that goes beyond content delivery to focus on community, connectedness, and student engagement. It is seen as a new concept which compensates the deficiency of the former online learning system. Gearhart (2010) states that the expansion of the online access phenomenon has resulted in the demand for greater flexibility and a more open learning system for revenue generations. In 2013, the former President's Council of Advisors on Science and Technology (PCAST) released a report to the President of United States about the potential of recent advances in technology—with a focus on Massive Open Online Courses (MOOCs)—to expand access to higher education opportunities

and to address other challenges facing America's higher education system. Later in 2014, The White House has published its remarks on announcing free verified certificates given to learners who completed MOOCs from edX and Coursera – the top two MOOC providers. Over the past few years MOOCs have become more established as students and education systems around the world begin to realise the virtues of this new online platform in developing their higher education agenda.

According to Malaysia's National ICT Initiative (MSC), a massive open online course (MOOC) is an online course aimed at unlimited participation and open access via the web. It provides interactive user forums to support community interactions among students, professors, and teaching assistants. In-line with the aspirations of the Malaysian Education Blueprint (Higher Education) 2015-2025, Globalized Online Learning is part of the 10 shifts proposed by the government in order to transform the higher education system so that it will offer exceptional quality of accessibility, content quality, equity, unity and efficiency to our students for a better education system (MOE, 2012). Hence, it is important for MOOCs to be assessed from the perspective of students as this concept is considered new in Malaysia Higher Education. Furthermore, there is little information available on how to adapt MOOCs in higher learning institutions. Ideally, this new online learning platform should have an impact on the quality of life and education; it should be able to improve the efficiency and effectiveness of various instructional process (Godoe & Johansen, 2012).

However, many technology-based products are found not fully used and some are rejected (Godoe & Johansen, 2012). Therefore, in any occasion, it is important to test and predict user acceptance to new technology-based learning before it can be implemented. As MOOCs will be implemented and used by the students in Malaysian universities, thus their readiness of using MOOCs should be assessed. Readiness means preparedness and according to Ayotola and Morenikeji (2011), awareness, knowledge of use, attitude and skills to use technology are associated with the preparedness as well. Considering that digital learning is pervasive, students in higher learning institutes are expected to be ready for MOOCs and prepare themselves to adopt this new technology in their learning. YB Datuk Seri Idris Jusoh, the Minister of Higher Education Malaysia, has urged all public institutions of higher learning to implement the usage of MOOCs as part of their pedagogy. The minister believes this initiative would reduce class time and increase online learning. Open Government Asia has published an article which states that The Education Ministry predicted that 30 percent of learning in IPTAs will be conducted through MOOCs by the year 2020.

Even though MOOCs have been generally accepted by many high ranking universities around the world as an educational innovation, there are little empirical studies about factors that may distract students from attending learning online. The growing attention has focussed on factors that may cause distractions and

problems students may have while engaging with MOOCs as it could affect MOOCs' low completion rate. Apparently, technology malfunction such as low bandwidth, server breakdowns, virus and malware attacks are the most common challenges faced in online courses (University of Washington, 2013). It is even worse, if the institutions are not providing enough administrative support and sufficient IT staff to take care of these problems. Besides that, internet coverage has been a critical issue for online courses as a stable internet connection is crucial for uninterrupted online learning to occur. Moreover, some potential online students have limited access to computers and internet, which would hinder them from attending online classes.

III. METHODOLOGY

This quantitative study was conducted among 26 master's degree students from an intact group in public tertiary institution located in Selangor, Malaysia. The research instrument was adapted from the University of North Carolina at Chapel Hill (2010). The Cronbach's alpha for this survey questionnaire was identified at .882 in a pilot study. The Cronbach's alpha obtained indicated that this instrument was reliable and can be used to garner information from students' readiness and factors that hinder online learning. The questionnaire used has three parts – Part A: respondents' profiles (7 questions), Part B: readiness to use online learning (12 questions) and Part C: Competence in overcoming online distractions/problems (7 questions). A 5-point Likert-scale survey was used to glean information from the respondents. The questionnaire also consists of six open-ended questions to gain an in depth understanding of the issues raised in this study. Other than the descriptive statistical analysis, inferential statistics such as correlation was also used to analyse students' responses in this study.

IV. FINDINGS AND DISCUSSION

The respondents in this study were 26 fulltime, masters degree students from a public university in Selangor. The respondents' profile analysis revealed that the majority of respondents were females (n=22, 84.6%) and only 3.8% were males (n=1). Three respondents failed to provide their gender. In terms of age, most respondents were 20-25 years old (n=14, 53.8%). 26.9% of the respondents were aged between 26-30 years old and 7.7% were aged between 31-35 years old. A total of 11.5% (n=3) of respondents did not state their age. Malay respondents were the majority group who made up of 80.8% while Bidayuh (7.7%, n=2) were the smallest ethnic group found in this study. However, 11.5% (n=3) did not provide their ethnicity. Most of the respondents had obtained a CGPA between 3.5-4.00 (57.7%, n=15). Another 23.1% were students who had obtained a CGPA of 3.01-3.49 and 19.2% (n=5) of the respondents failed to state their CGPA.

As depicted in Table 1, there were many student respondents who agreed that they can learn online easily ($M=4.08$, $SD=.63$), read something to learn it best ($M=4.04$, $SD=.60$), like to learn in a group even though they can work on their own ($M=4.16$, $SD=.37$), and they also agreed that they can learn from various instructional formats ($M=4.15$ $SD=.54$). However, most of the respondents agreed that they are - “good at setting goals and deadlines, have a good reason for taking online course, finish online projects, will not quit even things get tougher, keeping on track, learn things from audio recordings or podcast, remain motivated and complete online assignments even there were online distractions”.

TABLE I: READINESS FOR ONLINE LEARNING

<i>Variables</i>	<i>Mean</i>	<i>Std. Deviation</i>
I am good at setting goals and deadlines for myself	3.73	.72
I have a really good reason for taking an online course	3.85	.92
I finish the online projects I start	3.81	.63
I do not quit just because things get difficult	3.92	.69
I can keep myself on track and on time	3.85	.67
I learn things online easily	4.08	.63
I can learn from things I hear like lectures, audio recordings or podcasts	3.92	.56
I have to read something to learn it best	4.04	.59
I like to learn in a group, but I can learn on my own as well	4.15	.37
I remain motivated even though the instructor is not online at all times	3.62	.80
I can complete my online works/assignments even when there are online distractions	3.73	1.00
I can learn from various instructional formats	4.15	.54

^a 1=Strongly disagree 2=Disagree 3=Almost agree 4=Agree 5=Strongly agree

Further analysis of the data revealed that most of respondents agreed that they have developed certain competencies to solve problem and ignore distractions when studying online. They also agreed that they could stay focused on online learning even there were distractions from people in the surrounding and they can find someone to help if they had problems with their computer. The findings also revealed that some of the respondents agreed that they can learn best when they figure out things by themselves ($M=4.23$, $SD=.59$), study in a place where they can read and work with internet facilities ($M=4.38$, $SD=.57$) and they have also installed virus protection software on their laptop ($M=4.04$, $SD=.99$) as depicted in Table 2.

Furthermore, Pearson Product Moment Correlation analysis between students' readiness and competence to overcome online distractions revealed a positive, substantial and very significant relationship ($r=.623$, $p<.01$) between these two variables (Table 3). This result implies that students of higher education are ready for online courses if they know how to handle the online distractions and problems.

TABLE II: COMPETENCE TO OVERCOME ONLINE DISTRACTIONS

<i>Variables</i>	<i>Mean</i>	<i>Std. Deviation</i>
I have developed good ways to solve problems I run into	3.92	.56
I learn best when I figure things out for myself	4.23	.59
I can ignore distractions around me when I study	3.65	1.02
I usually study in a place where I can read and work on assignments with internet facilities	4.38	.57
I keep focus to online learning even there are people try to distract me	3.54	.91
I know someone who can help me if I have computer problems	3.92	1.06
I have virus protection software running on my computer/laptop	4.04	.99

^b 1=Strongly disagree 2=Disagree 3=Almost agree 4=Agree 5 = Strongly agree

TABLE III: CORRELATION BETWEEN STUDENTS' READINESS AND COMPETENCE TO OVERCOME ONLINE DISTRACTIONS

		<i>Readiness for Online Learning</i>	<i>Competence to Overcome Online Distractions</i>
Readiness for Online Learning	Pearson Correlation	1	.623**
	Sig. (2-tailed)		.001
	N	26	26

** . Correlation is significant at the 0.01 level (2-tailed).

Although many of the respondents reported to be able to learn from various educational formats, their readiness to enrol in MOOCs was still at a moderate level. Nevertheless, the findings of student readiness indicated that they did have some good reasons for taking online courses, because they admitted that they will set learning goals, keep learning on track and complete the course. This showed that online students do set learning goals, completing assignments, engaging with peers and going through certain evaluation just like any other learning platforms (University of Washington, 2013). Moreover, Zheng *et al.* (2014) found that MOOCs can increase student motivation in learning. The present study also found that students remained motivated even with the absence of the online instructors. Zhang *et al.* (2014) found that highly motivated students were reported to have a higher level of curiosity and were always interested in learning more. Therefore, MOOCs are deemed to be able to offer quality education to students as they can provide access to more valuable education resources worldwide.

Obviously, MOOCs have impacted society in several ways. The MOOC platform has expanded and enhanced teaching practices, offered a distinctive instructional method by providing a new pedagogy in the classroom. Thus, students learn better with MOOCs, especially with the availability of varied teaching techniques. However, the students involved in this study reported that they were hardly engaged in any online courses because of limited internet connection. Thus,

they suggested higher learning institutions should provide better access to the internet so that the students can participate in online courses anytime, anywhere. Inevitably, a larger bandwidth and wider Wi-Fi coverage is crucial when offering online courses. On this note, most students agreed that internet facilities must be provided so that they can read and do online assignments smoothly. However, distractions such as operating systems crashing, virus attacks and file corruption were some of common problems faced by online students (University of Washington, 2013). These problems have presented challenges not only to instructors, but also to the students. However, these are not really the problems plaguing the respondents in this study as they do have some knowledge to fix these problems.

On the other hand, findings from the open-ended questions revealed that most of student respondents were aware of MOOCs and recognised them as an online platform for learning. As a new way of learning, the respondents stated that they would like to participate in online courses when and where it is available and they also like to make new friends while online. This finding verified that MOOCs are able to attract student involvement in online classes (Liyanagunawardena *et al.*, 2013; Bate, 2014) and allow them to meet new people (Zheng *et al.*, 2014). Pertaining to the benefits of MOOCs, the students reported that "it is easier to arrange learning time especially for working and married learners". Generally, more than half of respondents stated that MOOCs are flexible, save time and cost, and very convenient for them to study anywhere and anytime. Some of the statements made by the student respondents are as follow: "Students can learn about the topic many times because there are video lectures and multimedia PowerPoints" (Respondent A); "I can learn anywhere, anytime and save the information in my laptop" (Respondent B); and "(It) has a variety of courses, convenient and flexible" (Respondent C).

Besides that, Respondent D stated that, "it helps students as well as instructors to experience effective learning and teaching process". Regarding the obstacles that they might face in online learning, most of them raised the issue of the existing weak internet connection at the faculty. The following are some of their comments. "The network line is always busy. Sometimes, it's too difficult to upload or download any (files)" (Respondent E). "Poor internet connection and poor facilities management are the culprits" (Respondent F). "Obviously, it is due to the distraction of the internet, sometimes, the wi-fi can be accessed and sometimes it cannot" (Respondent G). Other students have responded to online distractions as follow: "there are many distractions from the websites such as face book and twitter when students go online" (Respondent G). Besides that, "low self-regulation of a student will definitely contribute to the distraction of learning" (Respondent H).

Surprisingly, some students have reported that limited interaction with instructors would affect their learning. According Respondent I in the open-ended

questions, “most of them will not have chance to interact with their instructor to ensure successful teaching and learning”. Respondent J has pointed out that “face-to-face interaction with the instructor is actually the best way to gain knowledge”. Probably, these students are concerned with less communication between the instructor and students in online learning, hence, this issue should be addressed by the higher learning institutions before implementing any online courses.

Overall, most of the student respondents in this study have suggested the implementation of high speed and stable internet connection to facilitate student engagement in MOOCs and online learning. Most of the respondents also agreed that it should be made compulsory at all higher learning institutions to use MOOCs. Moreover, one of the student respondents has suggested “to provide interactive material, internet access and a reliable system” to further improve the online learning (Respondent N). As emphasized by Miligan *et al.* (2013), a higher education institution should study students’ perception on MOOCs to ensure better participation of students to complete the courses, and design MOOCs into modularised resources. This means that the faculty or higher learning institutions should provide MOOCs based on students’ needs and not lecturers’ need (Zheng *et al.*, 2014).

V. CONCLUSION

Higher learning institutions should highlight the colossal concerns of online instructional methods among potential students so that this new delivery method could be effectively optimized. Besides that, higher learning institutions should further investigate the initiatives to increase students’ readiness in using this new technology as well as giving out a deep understanding on technology itself that can convince students to accept MOOCs as a new instructional format. In addition, upon completion of MOOCs, the faculty involved should consider issuing certificates as online learners apart from the completion certificates generated through MOOC’s as official document to enhance student’s resume. Last but not least, this hybrid learning concept should be further enhanced and the concept of using MOOCs as edutainment strategy should be further promoted to uphold the aspiration of Malaysian Education Blueprint (Higher Education).

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