

MOOC's Barriers and Enables

Yuwanuch Gulatee and Prachyanun Nilsook

Abstract—MOOCs (massive open online course) become a very popular way of learning these days. People could access MOOCs from anywhere at any time with a fraction of the cost. In this study, we have examined both barriers and enables of MOOCs, our finding shows that despite the huge benefits of MOOCs, such as cost saving, access quality material from experienced instructor and flexible location and timing; it is still not a solution for all. The barriers such as information overload, lack of language support and the support from the instructor due to huge amount of participates has stopped many people join or finishes MOOCs courses.

Index Terms—MOOCs, learning design, element of learning, MOOCs design.

I. INTRODUCTION

The development of wholly online distance education in Australia was well under way by 2000 and is a feature of the tertiary landscape in this country. However, this did not mean that all higher education institutions provided online courses and the use of online systems as an alternative delivery mode was slow to develop at both the secondary school and tertiary level in Australia due to costs, local expertise, increased workloads and the need for support for teachers and academics alike. While online delivery of courses has meant a teaching and learning paradigm shift [1], the advent of massive open online courses (MOOCs) presents an alternative category of online delivery. New web-based technologies have enabled the provision of online education to multiple participants across the globe, exemplified by the rise of MOOCs. These online courses have been developed for large-scale, interactive participation and are available as open access via the web. They are generally open to anyone who wishes to participate and most have a component that is free. MOOCs are also recognized as alternative education tools for working or low income students. They may encourage university growth and have the potential to influence global higher education. On the other hand, the use of MOOCs may be viewed as a giant marketing scam to attract students to take up university studies, which is a new trend that the education sector and universities around the world are trying to establish. More and more universities continue to explore the potential of MOOCs as their teaching platform. They could be made available to hundreds of thousands of

students at any one time anywhere in the world. However, universities and their staff need to evaluate thoroughly the teaching and learning aspects of MOOCs before migrating to them. MOOCs offer both benefits and disadvantages. Ref. [2] found issues such as fears that staff members may lose the intellectual property associated with course contents. However, supportive factors include cost effectiveness, the ability to offer student centred learning, opportunities for collaboration and potential growth for universities worldwide. This paper suggests some criteria for the evaluation of MOOCs.

II. LITERATURE REVIEW

Since the mid to late 1990s the World Wide Web has been used as a distributed learning mechanism, enhancing the digital learning environment to support distance and online students. Using this delivery mode, instructors can provide a range of resources such as discussion forums and chat, multimedia, videoconferencing, audio and electronic blackboards to communicate with and teach students [3]. These changes in distance education have evolved in an attempt to provide easier access to educational opportunities for students who are located remotely from universities, who are working or who have other constraints or commitments such as families or young children. As [4] said, educators have to prepare and know how to make 21st century skills and knowledge learnable and accessible through the design of digital technologies and their evaluation. Ref. [5] found that using testing for secondary students' evaluation was not suited to 21st century teaching. How teachers relate to their students, motivate them and give them pathways to unlock their potential, is more important. However, society has changed; people who are working now need to learn new skills and knowledge for the evolving labor market. Many private and public universities and academic institutions are responding with a tremendous diversity of offerings via online learning. As a result, this online learning may also be considered as offering opportunities for lifelong learning. However, [6] draw attention to the fact that, to be successful, MOOCs need to offer appropriate activities and rapid feedback. It is important to give feedback to students for all activities they complete. The speed of offering feedback also influences students' tendencies to remain in their courses. Nevertheless, to provide automatic system-based feedback is still very difficult, especially to make the feedback reliable and authentic [6]. Moreover, autonomous learning environments may present major issues for learners who have to resolve problems by themselves [7]. Issues such as isolation and frustration have been cited as barriers for successful online learning which will affect students continues the course [1].

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III. DATA ANALYSIS

MOOCs have become a very popular alternative during the last five years, but research reports are somewhat contradictory, with both the literature and the findings of this research pointing to both positive and negative learning outcomes. Therefore, it is important to recognize some criteria for MOOCs as a vehicle for enrichment and the enhancement of teaching and learning.

Moocs offering in South East Asia

	Country	Course Name	How long is the course
1	Australia	Exoplanets	10 week
2	Provide on all categories		Big data for Better Performance
3	Art&Humanity	Chinese Language and Culture	4 Weeks
4	Business	Mining Engineering	5 Weeks
5	Education & Traning	Basic Physics	4 Weeks
6	Finance	Principle of Project Management	4 Weeks
7	Health&Medicine	The Art of photography	4 Weeks
8	Management	Logic: Language and Information 1	5 Weeks
9	Marketing & Advertising	Understanding Dementia	9 Weeks
10	Science&Technology	Concept in Game Development	4 Weeks
11		Early Childhood Education	4 Weeks
12		Financial Literacy	5 Weeks
13		World Music	4 weeks
14		Create Coding	6 weeks
15		sport and Recreation Management	4 weeks
16		Astronomy	5 weeks
17		Edcution in a Chaning World	4 Weeks
18		Introduction to Nursing in Healthcare	4 Weeks
19	Sigapore	Unpredictable? Randomness, Chance and Free Will	8 weeks
20		Write Like Mozart: An Introduction to Classical Music	9 weeks
21		Reason and Persuasion: Thinking Through Three Dialogues	10 weeks
22	China	Classics of Chinese Humanities: Guided Readings	8 weeks
23		Law and Society	11 weeks
24	Newzeland	More Data Mining with Weka (Waikato)	5 weeks

Moocs offering in South East Asia (cont..)

	Offering certificate	University	Uni Location	Student took the course	Video watched
1	Free or paid cer	ANUx	Australia		
2	Free or paid cer	Swinburne University of Technology	Australia	10,215	25,652
3	Free or paid cer	South China University of Technology (SCUT)	Australia	4,410	14,068
4	Free or paid cer	The University of Newcastle	Australia	2,182	9,391
5	Free or paid cer	Swinburne University of Technology	Australia	6,253	19,548
6	Free or paid cer	Polytechnic West	Australia	22,348	75,754
7	Free or paid cer	RMIT	Australia	15,233	57,413
8	Free or paid cer	Melbourne U	Australia		
9	Free or paid cer	University of Tasmania	Australia		
10	Free or paid cer	Swinburne University of Technology	Australia	10,238	36,920
11	Free or paid cer	Open2Study	Australia	12,672	48,316
12	Free or paid cer	Macquarie University	Australia	9,995	28,025
13	Free or paid cer	James Cook University	Australia	2,025	5,443
14	Free or paid cer	Monah University	Australia		
15	Free or paid cer	Tafe NSW	Australia	2,405	5,176
16	Free or paid cer	Curtin University	Australia	7,633	22,573
17	Free or paid cer	Open2Study	Australia	4,491	14,854
18	Free or paid cer	Open2Study	Australia	3,969	8,216
19	Free or paid cer	NSU	Sigapore		
20	Free or paid cer	NSU	Sigapore		
21	Free or paid cer	NSU	Sigapore		
22	No certificate	The Chinese University of Hong Kong	China		
23	No certificate	Shanghai Jiao Tong University	China		
24	Free cer	University of Waikato	Newzeland		

Fig. 1. Moocs offering in South East Asia.

As Fig. 1 shows, MOOCs are popular in many countries, but the main language provided is still English. As MOOCs are aiming to reach worldwide participants, especially in the developing countries, providers must not forget that some developing countries still lack broadband, tools and literacy in English. Language is one of the most important concerns because almost all MOOCs are provided in the English language [8]. However, there are some organizations [9] addressing this problem by providing translations. However, the range of languages offered is not particularly wide and only the lists of headings are translated. Although MOOCs provide wide ranges of courses, the durations of the course are mostly around 4 to 5 weeks. It seems too short to learn much within that time. Mostly, the units available on MOOCs are at an introductory level for beginners, but some offer students the ability to learn or revisit the basic concepts before starting

the real course ("MOOC Spurs Higher Education Reform," 2014). In addition, Fig. 1 shows that all of the MOOCs courses are provided by using video technology [1] have shown that students have significantly different learning styles and maintains that "learning style is mentioned frequently as a possible factor in student performance and attitudes in online courses." If the instructor identifies learning styles and takes them into account when designing curriculum, student attrition rates, attitudes and performance should improve. Ref. [1] demonstrated that different kinds of learning style demand different appropriate strategies, tools, and resources. Deep learning in an online environment can be facilitated by using representational media. However, teaching in the field of complex problem-solving can be very difficult even if instructors can provide opportunities for learners to practice developing those skills in a virtual environment. Questions about media appropriateness from purely cognitive perspectives are likely to be mitigated by visual and experience quality metrics. More than 20 years of empirical evidence underscores the fact that there is no such thing as a "one-size-fits-all" technology solution for learning [1].

As shown in Fig. 1, most of the units have very high student enrolments. Conversely, in Fig. 2 many researchers into MOOCs report that the drop-out numbers from MOOCs is also very high. Ref. [10] found that students chose to study online because traditional classrooms did not suit their timetables. The study by [11] also found that study online is more independent, especially for learners whose chronotypes determine their preference for online study. However, the instructional design of the content and the delivery format must cater for online learners' needs [11]. Ref. [10] also explained that most online students need four keys for motivation: attention, relevance, confidence, and satisfaction. Providing content that is relevant to students' lives and which includes learning activities that simulate real-world situations and hands-on activities that engage them is essential to foster their learning. Using technologies to assure their learning involves the incorporation of multimedia presentations to stimulate interest. Ref. [12] is the keys to successful online education. Especially encouraging self-directed and selfregulated learning will help the students to finish their online study. Conversely, an online learning environment requires more than simple usage tracking to understand its cognitive aspects. They are very difficult to deduce from the log files which are normally provided on MOOCs. Engagement with friends on MOOCs and in the class room environment might affect such numbers, as found by [1]. Ref. [1] also found most students felt studying online was very isolating due to the lack of support from their instructors and lack of personal interaction. Online instructors also felt isolated and pressured because they lacked sufficient time for their teaching. Moreover, Fig. 2 shows that many researchers mention that there are many students to reach on MOOCs. How can an instructor help 10,000 students who enrol in a unit on a MOOC? Ref. [13] research confirms that the workload of dealing with students' discussions was taking up all the instructors' time. They found online discussion extremely time-consuming and requiring more effort from instructors to encourage students to communicate with other

group members. These additional issues associated with the online delivery mode are also problematic for students studying on MOOCs. On the other hand, [14] and [15] proved that online communication and feedback from instructors are vital and effective strategies for successful online learning and teaching. This seems to be a controversial issue for MOOCs. Using automatic feedback to help instructors to handle their workloads is not effective. Ref. [6] found that automatic feedback cannot answer each student's questions, which should be explicable about each requirement. If there is insufficient support available, learners' motivation may lapse due to the need to keep struggling with each and every activity on different learning spaces, leading to disengagement [16]. As shown in Fig. 2, the literature review found students on MOOCs felt a lack of support for their study on MOOCs. However, Gulatee and Nilsook [17] instructors using MOOCs try to encourage a the development of a connectivist style for the students, so that students may learn from each other and incorporate new ideas with their existing knowledge and personal experience. However, if the students are all novices how can they help each other? Research by [18] found that providing an abundance of resources and tools, learning

activities, and network engagements helped students to develop professional connections. Connectivist MOOCs require "engaging in a variety of activities through social media and online networking tools to keep up with the course objectives. Such engagement needs a certain level of technological competency and an open attitude to actively create and share knowledge in learning networks" [18]. The study by [9] agreed that successful online learning is facilitated by providing the students with massive collaboration experience by using social media services. However, MOOCs still have the problem that initial high enrolments decline and the interaction in forums lessens. It rapidly drops after the students begin their courses. Also there is the problem of information overload because, as MOOCs were launched for a large number of students worldwide, often the forums are overloaded. Thus, it becomes impossible for anyone to navigate the discussion to find significant information [19], [20]. Instructors also consistently report that teaching online is frustrating and higher levels of preparation time and contact time with individual students via email are major issues.

No.	Review	Title	Barriers	
			information overload	massive amount of discussion
1		Textbooks for MOOCs		
2		Who Has Time?	✓	✓
3		MOOC Spurs Higher Education Reform		
4	DeBoer, J. et al (2014)	Changing "Course": Reconceptualizing Educational Variables for Massive Open Online Courses		
5	Jon Baggaley (2013)	MOOC rampant		✓
6	Brinton, C. G. et al.(2013)	Earning about social learning in MOOCs: From statistical analysis to generative model	✓	✓
7	Liyanagunawardena, T. R. (2013).	MOOC Experience: A Participant's Reflection	✓	✓
8	Hu, H. (2013).	MOOC migration		
9	Dennis, M. (2012).	The impact of MOOCs on higher education.		
10	Simonson, M. (2012)	MOOC madness		
11	Fomin, E. (2013).	"MOOCs: Tips for Enrollment Professionals		
12	Fournier, H., R. Kop, et al. (2014).	Challenges to research in MOOCs		
13	Joachim, G. (2014).	"Students as Teachers in MOOCs?"		
14	ohnson, D. H. (2013).	Teaching a "mooc:" Experiences from the front line		
15	Chamberlin, L. and T. Parish (2011).	MOOCs: Massive Open Online Courses or Massive and Often Obtuse Courses?	✓	✓

No.	Barriers (Cont.)												
	drop out	time consuming	lack of support	introduction level	language barrier	isolation	too many students to reach	inter active	evaluation	learner motivation	Self directed learning	engagement	cognitive
1													
2	✓	✓	✓	✓									
3	✓	✓	✓		✓	✓	✓	✓					
4	✓	✓		✓			✓		✓				
5	✓	✓	✓			✓	✓	✓					
6	✓		✓				✓	✓		✓	✓	✓	✓
7	✓	✓	✓			✓	✓			✓		✓	
8	✓		✓							✓			
9													
10			✓			✓		✓					
11													
12			✓		✓		✓	✓		✓	✓	✓	✓
13				✓					✓	✓	✓		✓
14													
15													

Fig. 2. Moocs' barriers.

From the literature review shown in Fig. 3, it may be seen that students are taking MOOCs' courses because increasing universities fees make it harder to get a higher education. With the feared increases to university fees proposed in the recent Australian federal budget, many students may not be

able to afford university education [20]. "Most of us man feel that, if the finances allow it, attending a residential four –year school is preferable, as students benefit from the social atmosphere and face-to-face instruction". Moreover research by [21] emphasized that paying for MOOCs help the students

financially. An introductory course normally costs from \$450 to \$750 but to complete it on a MOOC costs them around \$150, as shown in Fig. 3.

No.	Review	Title	Enables					
			save cost	Anywhere anytime	free	Back to study	VDO	attach large number stu
1		Textbooks for MOOCs		✓	✓			
2		Who Has Time?		✓		✓	✓	
3		MOOC Spurs Higher Education Reform	✓	✓	✓		✓	✓
4	DeBoer, J. et al (2014)	Changing "Course": Reconceptualizing Educational Variables for Massive Open Online Courses				✓	✓	✓
5	Jon Baggeley (2013)	MOOC rampant	✓	✓	✓	✓	✓	✓
6	Brinton, C. G. et al (2013)	Earning about social learning in MOOCs: From statistical analysis to generative model		✓			✓	✓
7	Uyanagunawardena, T. R. (2013).	MOOC Experience: A Participant's Reflection		✓	✓	✓		✓
8	Hu, H. (2013).	MOOC migration	✓	✓	✓	✓	✓	✓
9	Dennis, M. (2012).	The impact of MOOCs on higher education.	✓	✓		✓		✓
10	Simonson, M. (2012)	MOOC madness					✓	✓
11	Fomin, E. (2013).	"MOOCs: Tips for Enrollment Professionals	✓	✓	✓	✓		✓
12	Fournier, H., R. Kop, et al. (2014).	Challenges to research in MOOCs		✓		✓	✓	
13	Joachim, G. (2014).	"Students as Teachers in MOOCs?"		✓				✓
14	ohnson, D. H. (2013).	Teaching a "mooc": Experiences from the front line						
15	Chamberlin, L and T. Parish (2011)	MOOCs: Massive Open Online Courses or Massive and Often Obtuse Courses?		✓				✓

Fig. 3. Moocs' enables.

IV. RESULTS

In this study we found out that the most benefits from Moocs is cost saving, because most of the course in Moocs are only cost a fraction if compare to the traditional school. Some courses even offered freely. The other large benefit in Moocs is people can access the course at any time and any location due to the nature of internet. However, there are quite few serious barriers which make Moocs not a solution for all. We found out that most of the courses are written in English. Since most of the people in third world countries still cannot use English fluently, it makes very hard for them to join the course. Also, due to huge amount of participates in Moocs, it is impossible for instructor to provide support to all of them. Information overload, massive amount of discussion, time consuming, isolation, lack of motivation, self-directed learning are those other barriers in Moocs.

V. DISCUSSION

At the end of the day, the idea for MOOCs to provide education to the masses is idealistic, but in reality it is really only for a select few. The online environment will weed out all but the most motivated. MOOCs are run for massive numbers of students, with video studies which also affect the size of the class. No teacher, or limited teacher involvement, means that the lack of personal interaction with individual students is a barrier to online learning. Lack of feedback from a teacher has a huge impact, hence the very high attrition rates. While the video is a great medium for teaching, students cannot participate or ask questions while the lessons are actually being taught. It is also necessary to find out exactly what sorts of things are being offered by MOOCs. Are they mainly concerned with generic skills building? [20], [22]. Many studies [20], [22] admit that MOOCs are no replacement for in-class instruction. Posting a cry for help in a forum is hardly the same as raising your hand to ask a question in a traditional classroom. But MOOCs really do not have to replace conventional education. They can be a supplement and perhaps this is where the real impact lies for a child growing up in rural India or China. It might be a door to new worlds that are suddenly as close as the nearest internet cafe. Rich offerings of technical courses may mean, for example,

that suddenly non-technical people can become familiar with programming, not because they need to be programmers themselves, but because it will help them see new possibilities, and thus work better with coders. However, MOOCs are now only available in few languages, mainly English. Thus there are still some limitation for MOOCs to help the education seeker in third world countries unless students have English literacy. Similarly, real and fresh foods are better than supplements. However, if you are not able to find enough fresh nutrients, supplements are one option that is better than nothing. After all, there is no one food that is suitable for everyone. Editorial Policy The submitting author is responsible for obtaining agreement of all coauthors and any consent required from sponsors before submitting a paper. It is the obligation of the authors to cite relevant prior work. Authors of rejected papers may revise and resubmit them to the journal again.

VI. CONCLUSION

At the end of the day, the idea for MOOCs to provide education to the masses Even though Moocs become very popular these days and many people are getting huge benefit from it, such as getting high quality information from experienced instructor, saving costs; learning from anywhere anytime and so on, it doesn't mean Moocs is suitable for everyone. There are still lots of barriers within this new way of leaning. For example, lack of support due to huge amount of students, language barrier and lose of study motivation. How to reduce those barriers and increase people's motivation in Moocs are need to be studied in future researches.

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