



## Profiling MOOC Learners in a Higher Learning Institute in Malaysia

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### Abstract

The focus of this study is to explore the profile of students who subscribed to MOOCs as a flexible learning option. The study was based on an analysis of the respondent's profile and demographic data. The findings show that students had signed up for MOOCs in their last semester because they considered it to be a flexible learning option. The study found that there were no significant differences among the users' demographic data, particularly gender and age. The only difference was in the chosen program of course via the MOOC platform.

Keywords: Massive Open Online Course, MOOC user usage, gender, age, the program of study

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### 1.0 Introduction

Online learning via Massive Open Online Courses (MOOC) has attracted a diverse range of participants to enrol in various programs offered globally. Learning via the MOOC platform enables participation from various age groups, nationality and program of study to enrol in courses of their interest. Millions of people, ranging from students to working adults and even professionals who want to enhance their knowledge or expertise, have enrolled in Massive Open Online Courses (MOOCs). Professionals, educators, researchers, students and the general public have displayed a keen interest in learning via MOOCs to experience online learning first hand. Breslow, Pritchard, DeBoer, Stump, Ho, & Seaton (2013) mentioned that enrollment in MOOCs stretches over 196 countries. Subscribers speak a wide variety of languages and consist of a wide range of age and education. They are also highly heterogeneous and motivated to participate in online courses. Over the past couple of years, a host of MOOC platforms had been developed. Among the popularly subscribed ones are, Coursera, edX, Udacity, Udemy and Open Learning. However, not all MOOC courses are suitable or cater to individuals and the diverse cultural variabilities in learning styles. To succeed in online learning, learners have to be "self-directed autodidact" (Kizilcec, 2013).

### 2.0 Method

This is a descriptive study and data was obtained using a survey questionnaire. The respondents are students who use MOOC as an online learning platform at a local public university in Malaysia. 73% of the respondents returned completed questionnaires. A

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response rate of above 70% is adequate to glean information from the target population and provide meaningful statistical analyses (Draugalis, Coons & Plaza, 2008). The questionnaire for this study was adapted from an e-learning study by Onah, Sinclair and Boyatt's (2014) conducted at the University of Southampton. The Cronbach alpha reliability index of the questionnaire used was .735, and therefore it was deemed as a reliable instrument for this study. For the study, MOOC Learners' Usage was set as the dependent variable, while age, gender and program of study were selected as independent variables. Firstly, a descriptive analysis was conducted to analyze the profile of MOOC learners in terms of usage habits and devices. Secondly, a t-test and one-way ANOVA analyses were conducted to analyze MOOC usage among the respondents based on gender, age and program of study.

### 3.0 Results

#### 3.1 Profile of MOOC Learners

The majority of the respondents were females who made up 79.5% (n=58) and males 20.5% (n=15) respectively. Regarding age, respondents aged 20-24 years formed the biggest group, 69.9% (n=51) followed by respondents aged between 25-29 years who formed 23.3% (n=17) of the total number, while respondents aged between 35-39 years formed 5.5% (n=4) of the total number. The smallest age group was 30-34 years, which formed 1.4% (n=1) of the total number of respondents. This result shows that the respondents under 30 years old were the dominant group in this study. The result based on ethnicity shows that Malay respondents were the largest group in this study (89%, n=65), followed by respondents from indigenous groups in Sabah (5.5%, n=4). However, missing data is recorded at 5.5% (n=4) due to respondents who did not state their ethnicity. Based on the program of study, undergraduates formed the majority (58.9%, n=43) followed by respondents enrolled in master's degree programmes (41.1%, n=30). Respondents who study full time formed the majority (98.6%, n=72) and part-time students were the least (1.4%, n=1). Forty-nine respondents regarded themselves as active learners (67.1%), while 24 respondents regarded themselves as passive learners (32.9%).

#### 3.2 MOOC's Usage Habits among the Learners

Table 1 shows that the overall mean for MOOC usage among the respondents was at a moderate level (mean=2.12, SD=.520, n=73). Further analysis of online participation other than MOOC among the respondents revealed that only 39 of them had engaged in online courses, which is slightly higher than the rest. This shows that participation in online learning platforms is something new for the respondents in this study. Data analysis shows that 47.9% of the respondents had only recently joined a MOOC. The results also show that 32.9% had enrolled in a MOOC within the last six months before the study, and only 6.8% had enrolled within one year before the survey, respectively. The respondents engaged in online learning at various times of the day. Most of the respondents in this study prefer to use MOOCs at night, which made up 28.8%, while 21.9% only use the platform during weekends while 17.8% use it during daytime and a further 12.3% use them only in the morning hours. The least amount of time to use a MOOC forum was during vacations (1.4%). As university students, most respondents in this study accessed their MOOC platforms at home (75.3%) and the campus dormitory (19.2%). The rest of the respondents accessed their MOOCs at the campus library (1.4%), internet cafés (1.4%) and other places where Wi-Fi is available (1.4%).

Table 1. MOOC Usage among the Learners (n= 73)

Variable	Mean	Standard Deviation
Number of MOOCs - Current	2.16	.51
Number of MOOCs – Completed	2.10	.50
Frequency of MOOCs - Attending Per week	2.15	.53
Frequency of MOOCs - Completed Per week	2.08	.52
MOOC Usage	2.12	0.52

Scale: <1.66 = Low, 1.67-3.33 = Medium, 3.34-5.00 = High

As mentioned before, most respondents joined a MOOC quite recently. Thus most of them had experienced between 1-3 courses (90.4%), while 4.1% stated they had joined 4-6 MOOC courses, 2.7% more than 10 MOOC courses and the least, 1.4% said that they are currently on their 7<sup>th</sup> - 9<sup>th</sup> MOOC course. With regards to networking and collaboration, 54.8% (n=40) of the respondents stated they had not communicated with other MOOC users, while 45.2% (n=33) said that they interact with other MOOC users.

Table 2 provides the analysis with regards to the use of various electronic gadgets, devices and media by the respondents to access their MOOC accounts. The results showed that 71.2% of the respondents used laptops, while 23.3% preferred desktops. Tablets or iPads were the least used devices (1.4%), while mobile devices accounted for 2.7% of the respondents.

Regarding the choice of media on their learning platform, 32.9% of the respondents preferred streaming videos, 26% preferred blogs and 13.7% chose open source tools/materials. However, 8.2% preferred MOOC forums and a further 8.2% preferred to use google. The least preferred mediums were Facebook (4.1%), Twitter (2.7%) and skype (2.7%). A pertinent point to note is that the

majority of the respondents in this study had used Open Learning (97.3%) as their MOOC platform. A compelling reason for this is that the faculty members at this university were actively producing online resources using Open Learning as their platform.

The study had also conducted a t-test, as shown in Table 3, which found that gender [ $t(72)=-.827$ ,  $p$ -value  $>.05$ ] did not show any significant difference among respondents usage of MOOCs as an online learning platform. However, the program of study [ $t(72)=2.108$ ,  $p$ -value  $<.05$ ] did show a significant difference. Hence, the usage of MOOCs was not influenced by gender. Still, the program of study did make a substantial difference among higher education learners where undergraduate degree students chalked a higher rate of usage in comparison to students enrolled in master's programmes.

Table 2. Descriptive Analyses of MOOC Learners' Device Usage (n=73)

No.	Items	Options	No. of Respondents	Percentage (%)
1	Electronic device to access MOOC	Laptop	52	71.2
		Desktop	17	23.3
		Mobile device	2	2.7
		Tablet/iPad	1	1.4
		Others	1	1.4
2	Use of media to learn MOOC	Online videos	24	32.9
		Blog	19	26.0
		Open source tools/materials	10	13.7
		In-MOOC forum		
		Google	6	8.2
		Facebook	6	8.2
		Twitter	3	4.1
		Skype	2	2.7
		Missing	2	2.7
		1	1.4	
3	MOOC platform	Open Learning	71	97.3
		Courser	1	1.4
		Missing	1	1.4

Table 3. Independent Samples t-test of MOOC Learners' Usage-based on Gender and Program of Study

A		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Gender	Equal variances assumed	.003	.957	-.827	70	.411	-.124	.149	-.423	.175
	Equal variances not assumed			-.876	23.79	.390	-.124	.141	-.416	.168
Program of Study	Equal variances assumed	3.223	.077	2.108	71	.039	.255	.121	.014	.496
	Equal variances not assumed			2.238	70.97	.028	.255	.114	.028	.482

\* Dependent variable: MOOC Learners' Usage

Table 4. Compare Means of MOOC Learner Usage based on Age

Age Group	N	Mean	SD	Std. Error	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
20-24	51	2.13	.54	.076	1.98	2.28	1.22	4.17
25-29	17	2.18	.50	.122	1.92	2.43	1.67	3.44
30-34	1	1.89	.	.	.	.	1.89	1.89
35-39	4	1.86	.38	.189	1.26	2.46	1.33	2.22

Total	73	2.12	.52	.061	2.00	2.25	1.22	4.17
Scale:	<1.66 = Low, .05	1.67-3.33 = Medium,			3.34-5.00 = High		F = .460, P>	

MOOC Learners' Usage-based on age revealed that moderate means had been identified among the four different age groups of respondents. Homogeneity of Variance test ( $F = .401, p > .05$ ) has confirmed that equality of variance had been ensured. The ANOVA result shows the different number of respondents in the age groups did not affect. One-way ANOVA analysis in Table 4 further confirmed that there were no significant differences had been identified among the different age groups of MOOC learners in terms of MOOC usage with  $F = .460, p > .05$ .

#### 4.0 Discussion and Recommendations

The findings of this study had revealed that the majority of the respondents were females, aged around 20-24 years old and hold a bachelor's degree. These demographic patterns are similar to a study done by Hansen & Reich (2015). The study has also highlighted that gender and age did not cause any significant difference in the usage of MOOCs among learners in higher education institutions. The only significant difference was between undergraduate and postgraduate students. These findings suggest that preference for using MOOCs among tertiary students cannot be predicted based on gender and age, but program levels do have an impact on their selection. These findings are parallel to the findings reported in the studies of Guo & Reinecke (2014) and Christensen et al. (2013).

However, the findings of the present study contradict studies done by DiBiase & Kidwai (2010), who found that age and gender except education level have influenced learner's engagement with MOOCs. This study is also in contrast with a study sponsored by HarvardX and MITx and undertaken by Ho, Reich, Nesterko, Seaton, Mullaney, Waldo & Chuang (2014) which revealed mixed results in terms of gender and age except for the level of participants' education. According to Ho et al. (2014), most HarvardX and MITx's participants were aged below than 30 years in every course in which the middle-aged was 26 years old. Nonetheless, the study shows similar patterns concerning the education level of the respondents as reported in HarvardX and MITx, whereby most respondents hold a bachelor's degree. In contrast, a significant number of respondents have a higher level of education. However, in terms of gender, the HarvardX and MITx study reported that male respondents participated more actively than females in MOOC platforms.

The results of this study may differ from some previous studies, mainly since MOOCs are a new concept of online learning in Malaysian higher education institutions. Hence there might be limited and insufficient information as well as limited coverage of MOOC usage as a learning platform among students. This could be the underlying reason for low levels of participation and engagement in online learning platforms such as MOOCs. Also, most students in higher public education institutions in this country are predominantly females (Department of Statistic, 2017). As a new online learning concept, the student respondents do not seem to be familiar with the idea yet.

Furthermore, the education system in Malaysia is still mainly practising traditional classroom teaching and learning methods and approaches. The MOOC approach is still not grounded in a Malaysian learning culture, and students have not shifted their mindset to get used to the online learning concept. Hence, educators and education departments must take progressive efforts to ensure online courses such as MOOC can be accepted widely. Not only by tertiary students but also by professional workers and the public, in general, to stay relevant with this advanced tool in the digital era.

The study found insignificant results about MOOC usage among students of higher education in terms of age and gender except for the education level of the students. Nevertheless, respondents acknowledged the significance of MOOCs in widening their knowledge (Hansen & Reich, 2015). The respondents believed that MOOC, as a learning platform, has met their expectations and would engage more with MOOC courses in the future. They hope that their educators/instructors could integrate more online platforms as a teaching approach in their programs and course of study. This allows them to learn and retrieve learning materials anytime and anywhere. Learning via MOOCs will be entirely accepted if Malaysian educators integrate online learning in their teaching method.

#### 5.0 Conclusion

Although MOOC as a learning concept is not something new in developed nations, in countries like Malaysia, students have not fully embraced this new frontier due to lack of exposure. In this context, it is pertinent that educators and the Ministry of Education (MoE) should cooperate in updating and enlisting various forms of mediated online learning platforms and digital media that the advent of industry 4.0 has to offer students. Effective and appropriate measures are needed to encourage more use of MOOCs at the university level as a learning concept. MOOCs provide a convenient and flexible approach to learning today. Malaysian students will be left behind if the relevant authorities do not take the necessary steps to provide students with the required facilities to engage with MOOCs in our higher education institutions.

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## References

- Breslow, L., Pritchard, D.E., DeBoer, J., Stump, G.S., Ho, A.D. & Seaton, D.T. (2013). *Studying learning in the worldwide classroom: Research into edX's first MOOC. Research and Practice in Assessment*, 8.
- Christensen, G., Steinmetz, A., Alcorn, B., Bennett, A., Woods, D. & Emanuel, E.J. (2013). *The MOOC phenomenon: Who takes massive open online courses, and why?* Retrieved from <http://papers.ssrn.com/abstract=2350964>
- Department of Statistic, Malaysia. (2016). *Bilangan enrolmen universiti awam mengikut jantina bagi tahun 2016*. Retrieved from [http://www.data.gov.my/data/ms\\_MY/dataset/38e55740-4184-432e-a844-347d67df3e36/resource/02106eea-d575-4fb9-9385-ecb2a8a19540/download/2016enrolmenuabyjantina.csv](http://www.data.gov.my/data/ms_MY/dataset/38e55740-4184-432e-a844-347d67df3e36/resource/02106eea-d575-4fb9-9385-ecb2a8a19540/download/2016enrolmenuabyjantina.csv)
- DiBiase, D. & Kidwai, K. (2010). Wasted on the young? Comparing the performance and attitudes of younger and older US adults in an online class on geographic information. *Journal of Geography in Higher Education*, 34(3), 299-326.
- JoLaine Reiersen Draugalis, Stephen Joel Coons, and Cecilia M. Plaza (2008). Best Practices for Survey Research Reports: A Synopsis for Authors and Reviewers. *American Journal of Pharmaceutical Education: Volume 72*, Issue 1, Article 11.
- Guo, P.J. & Reinecke, K. (2014). *Demographic differences in how students navigate through MOOCs*. ACM, 1-10.
- Hansen, J.D. & Reich, J. (2015). Democratizing education? Examining access and usage patterns in massive open online courses. *Science*, 350(6265), 1245–1248.
- Ho, A.D., Reich, J., Nesterko, S., Seaton, D.T., Mullaney, T., Waldo, J. & Chuang, I. (2014). *HarvardX and MITx: The first year of open online courses*, Fall 2012-Summer 2013 (HarvardX and MITx Working Paper No. 1).
- Kizilcec, R.F. (2013). Collaborative Learning in Geographically Distributed and In-person Groups. In *AIED 2013 Workshop on Massive Open Online Courses*.
- Onah, Daniel F. O., Sinclair, Jane and Boyatt, Russell (2014). Dropout rates of massive open online courses: Behavioural patterns. In: *6th International Conference on Education and New Learning Technologies*, Barcelona, Spain, 7-9 Jul 2014. Published in: EDULEARN14 Proceedings pp. 5825-5834. ISBN 9788461705573. ISSN 2340-1117.: *Prospects for internationalization*. Retrieved Jan 5, 2017, from <http://mahzan.com>.