Multidisciplinary Informatics Journal
Vol. 2, No. 1, June 2019, Pg. 16 – 23

STUDENTS' PERCEPTIONS ON MOOCs AMONG PUBLIC UNIVERSITIES IN MALAYSIA

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Received: 10 April 2019 / Accepted: 15 May 2019 / Published online: 15 June 2019

ABSTRACT

Massive Open Online Courses (MOOCs) are open online courses that use information technologies to attract people in experience learning using Internet. MOOCs is the platform that students will able to obtain more knowledge and thus lead to increasing of the expectation of learning outcomes. This study aims to determine the relationship between learning strategies, cognitive appraisal and difference between the genders of students on future intended to use MOOCs among public universities in Malaysia. The study was conducted among 126 students' public universities in Malaysia that involve in MOOCs. This study revealed that there is no significant difference between male and female on the intention of using MOOCs. Besides, two variables in learning strategies that is deep learner and surface learner are significant towards future intended used of MOOCs. The results also showed that threat and challenge have no association between future intended used of MOOCs. In conclusion, we found that students with deep learner attitude and surface learner attitude were the most importance factors that contribute to future intended to use MOOCs and these factors are work in silo.

Keywords: MOOCs; Cognitive Appraisal; Future Intended; Learning Strategies.

1. INTRODUCTION

Massive Online Open Courses (MOOCs) are an open education movement that emphasizes on open learning using technology and can improve the quality of education. This open education

platform can utilize the technological innovation. MOOCs also gained interest from students who likely in universities and eager to participate in online assessment [1]. There are no limitations on individual when using MOOCs and furthermore it create a golden opportunity to teachers and students as teachers have new styles of teaching while students could obtain a new way or strategy in their learning method [2]. Nevertheless, few research revealed that there is fear and challenge in using MOOCs. Higher education is facing several obstacles ,one of which is the prolific rise in Massive Open Online Course (MOOCs) [3]. The study has found that, challenge hypothesis was not accepted for the future intended use of MOOCs as future intended use of MOOCs are likely to being assume as threats to the students. This mean that the more students feel threatened, the less they will use MOOCs in the future [4].

Other than that, in terms of gender, a study among Turkish highlighted that females are more dominant in using MOOCs [5]. In a journal entitled 'Demographic Differences in How Students Navigate through MOOCs', study has shown result that most students in these four courses were men, with the largest gender display into two subject for computer with the largest gender display into two subject for computer which are 86% male [6]. The analysis has made number of predictions about MOOCs since 2012, one of it is has claimed that 'MOOCs are for male geeks'. However by Macleod had proven that the claim has failed to materialize and they have found that gender participation rates have been largely a function of the subject matter that the MOOCs address [7].

Learners in MOOCs at Yuan Ze University can be classified into two groups which is active learner and passive learner. Active learners did show a higher completion rate and a better final grade than the other group. These results suggested that learning performances of MOOCs students varied by their learning engagement and participation in learning activities [8]. Another study proposed a gaze-based indicator of students' attention in a MOOCs video lecture. The results show there is no significant relation between learning strategy and post test score indicates deep learners do not learn more [9]. A further study has indicates that students with deep approach are tend to achieve higher learning gain and score. However, the universities have been recently open to attract students with other approach such as surface approach to participate. In this study, result of women are likely to engage in using the MOOCs platform more are better than men [10].

2. METHODOLOGY

A cross-sectional study design was applied where data were collected to observe the students

perceptions on future intended use of MOOCs among the public universities in Malaysia. The population in this study were all students that are currently studying any course in public universities. Inclusion criteria were students that are currently studying in any 21 local universities. The sample size were calculated by using PS Power and Sample Size. There were 126 respondents involved in this study. Based on the sample size, quota sampling were used and 6 respondents from each 21 universities were selected. The survey were conducted online by using google forms and it took 5-10 minutes to complete. The questionnaire was taken from previous journal which conduct exploratory study on MOOCs in Israel [4]. There are two parts involved which are part A and part B. Part A is demographic variable while the variables considered in part B in this research are learning strategies, cognitive appraisal, and future intended use of MOOCs. The main software that used to analyze the data was R Studio programming.

3. RESULTS

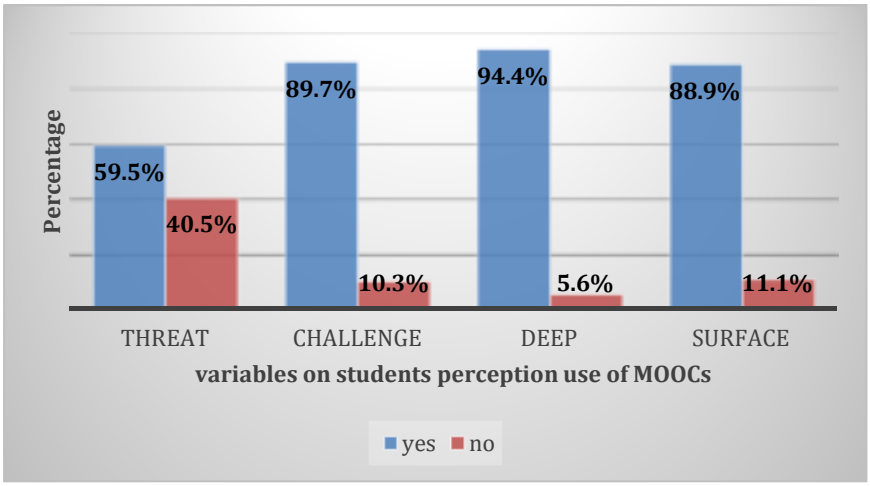

Fig.1. Percentage for each variable on student perception use of MOOCs

Based on Figure 1, the percentage for each variable which are threat, challenge, deep and surface were calculated to determine the student's perceptions on MOOCs only for these four variables. 59.5% students feel threatened on using MOOC for theirs study while 40.5% feel less threatened. 89.7% student say that MOOCs are likely challenged toward them, and 94.4% students are deep learner which means they prefer more thoroughly in their study while 88.9%

are surface learner.

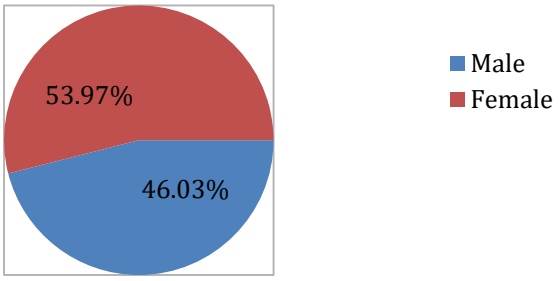

Fig.2. Pie chart for gender

A total of 126 respondents are participated in the study. Figure 2 describe the demographic variable which is gender. There are 58 males and 68 females interested to answer the questionnaire regarding future intended used of MOOCs. Based on the result the most predominant in study are female since female are more interested in answering on our questionnaire regarding future intended use of MOOCs. Their percentages are 46.03% and 53.97% respectively.

Table 1. Tabulation of Future Intended Use of MOOCs and Threat

Threat	**Future intended use of MOOCs**		**Chi-Square (df)**	**p-value**
	No (n (%))	**Yes (n (%))**		
Yes	0 (0.0)	51 (40.5)	1.9136e-28 (1)	>0.95
No	1 (0.8)	74 (58.7)		

[a]Fisher's Exact test were applied

Based on the Table 1, there were no association between threat and future intended use of MOOCs since the Fisher's Exact test p-value is 1 which is larger than 0.05 [Chi-Square (df): 1.9136e-28 (1)].

Table 2. Tabulation of Future Intended Use of MOOCs and Challenge.

Challenge	**Future intended use of MOOCs**		**Chi-Square (df)**	**p-value[a]**
	No(n(%))	**Yes (n(%))**		
Yes	0 (0)	13(10.3)	1.6389e-30	>0.95
No	1 (0.8)	112(88.9)	(1)	

[a]Fisher's Exact test were applied

Based on the Table 2, there were no association between challenge and future intended use of MOOCs since the Fisher's Exact test p-value is 1 which is larger than 0.05 [Chi-Square (df):

1.6389e-30 (1)].

Table 3. Tabulation of Future Intended Use of MOOCs and Deep.

Deep	Future intended use of MOOCs		Chi-Square (df)	p-value[a]
	No (n(%))	Yes (n(%))		
Yes	0 (0.0)	7 (5.6)	7.584e-31	>0.95
No	1 (0.8)	118 (93.7)	(1)	

[a]Fisher's Exact test were applied

Based on the Table 3, there were no association between deep learner and future intended use of MOOCs since the Fisher's Exact test p-value is 1 which is larger than 0.05 [Chi-Square (df): 7.584e-31(1)].

Table 4. Tabulation of Future Intended Use of MOOCs and Surface.

Surface	Future intended use of MOOCs		Chi-Square (df)	p-value[a]
	No (n(%))	Yes (n(%))		
Yes	0 (0.0)	14 (11.1)	1.6944e-30	>0.95
No	1 (0.8)	111 (88.1)	(1)	

[a]Fisher's Exact test were applied

Based on the Table 4, there were no association between surface learner and future intended use of MOOCs since the Fisher's Exact test p-value is 1 which is larger than 0.05 [Chi-Square (df): 1.6944e-30 (1)].

Table 5. Future intended use of MOOCs and gender (N=126)

Variables	Female	Male	Mean Difference (95% CI)	t-statistic (df)	p-value
Future Intended Use of MOOCs	25.6747 (0.711383)	25.44828 (4.009517)	0.22819 (-1.134288, 1.590677)	0.3315 (124)	0.7408

[a]Independent t-test was applied.

Independent t-test was carried out to know the difference between gender and future intended to use MOOCs. The assumptions for independent t-test were satisfied. Based on the Table 5, there was no significant difference between Male and Female students on future intended to use MOOCs, since the p-value was higher than 0.05.

Table 6. Student perception intended used of MOOCs between threat, challenge, deep and surface learner. (n=126)

Variable	B[a] (95% CI)	T-statistics (df)	p-value[b]	R^2
Threat	-0.1084 (-0.2279, 0.0110)	-0.797 (124)	0.0747	0.0253
Challenge	0.0405 (-0.2699, 0.3509)	0.258 (124)	0.7967	0.0005
Deep Learner	0.3337 (0.2040, 0.4633)	5.095 (124)	<0.0001	0.1731
Surface Learner	0.2024 (0.0739, 0.3309)	3.119 (124)	0.0022	0.0727

[a]Crude regression coefficient [b]Simple regression coefficient

Based on the Table 6, all the simple linear regression assumption is met since the residuals were approximately normally distributed. There were significant linear relationship between student perception intended used of MOOCs and deep learner and surface learner since the p-value for deep learner and surface learner were less than 0.05.

For every 1 point in deep learner increased, the student future intended to use MOOCs will increase by 0.3337. (b = 5.095, 95% CI (0.2040, 0.4633), p-value <0.0001). Next, for every 1-point in surface learner increase, the student future intended to use MOOCs will increase by 0.2024 (b=0.2024, 95% CI (0.0739, 0.3309), p-value=0.0022).

Based on the coefficients of determination for deep (R-squared=0.1731), there is 17.31% of the total variation of future intended use of MOOCs is explained by deep learner, the remaining of 82.69% is explained by others variable that is not included in the model. While for surface learner (R-squared=0.0727), there is 7.28% of the total variation of future intended use of MOOCs is explained by surface learner, the remaining of 92.72% is explained by others variable that is not included in the model.

Table 7. Relationship of future intended use of MOOCs between deep and surface.

	Simple Linear Regression			Multiple Linear Regression		
	B[a]	95% CI	p-value	B[b]	95% CI	p-value
Deep Learner	0.3337	(0.2040, 0.4633)	<0.0001	0.3337	(0.2040, 0.4633)	<0.0001

[a]Crude regression coefficient bAdjusted regression coefficient
Forward multiple linear regression was applied. Model assumption are fulfilled.
Coefficient of multiple linear regression (R-squared) is 17.31%.

Result on Table 7 were done based on the results on Table 6, where 2 importance factors from

simple linear regression were considered into the variable selection model. Then forward selection method was applied to find the best predicted factor towards future intended use of MOOCs. There were only one factor was found to be truly significant contribution towards future intended use of MOOCs. There was significant linear relationship between future intended use of MOOCs and deep learner (Adjusted b=0.2990; 95% CI=0.1508, 0.4471; p-value=0.0001). There are 17.92% of the variation in future intended use of MOOCs were explained by deep learner according to the multiple linear regression.

4. CONCLUSION

In conclusion, our study has found that the intention to use MOOCs did not influenced by gender. Whereas, the true contributions towards future intended to use MOOCs is based on type of student's attitude either he or she is a deep learner or surface learner. Both factors are worked in silo, where deep learner and surface learner are two difference attitude that contribute to future intended to use MOOCs.

5. ACKNOWLEDGEMENTS

The authors would like to thank to Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA for giving us opportunity to conduct this study successfully.

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