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UNDERSTANDING PEDAGOGICAL APPROACHES OF UNIMAS MOOCS IN ENCOURAGING GLOBALISED LEARNING COMMUNITY

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ABSTRACT

Massive Open Online Courses (MOOC) have made learning opportunities in higher education possible for anyone. Universiti Malaysia Sarawak was amongst the first pioneers to conduct MOOC namely ICT Competencies. In September 2016, four MOOCs were launched which included Animal Physiology, English in Media, English for Self-Expression and Multimedia Technology and Design. 2017 marks the second year these four courses are offered. This study believes the importance of research and evaluation of courses that can provide information and details to further improve their delivery method. By focusing on ten pedagogical approaches taken by each MOOCs, the design patterns are illustrated. This study uses Assessing MOOC Pedagogy (AMP), an instrument developed to assess accredited MOOCs from the United States. Further analysis may assist in deeper understanding of design pattern towards MOOCs effectiveness and success rate.

Keywords: Massive Open Online Courses; MOOCs; Malaysia MOOCs; Online Pedagogy; MOOC Pedagogy; Assessing MOOC Pedagogy; AMP.

1. INTRODUCTION

The introduction of Massive Open Online Courses (MOOCs) in 2008 have put higher education on the next level where learning in higher education is made possible regardless of geographical location and time through presence of internet and accessing devices. The term MOOCs was first coined in 2008 by Dave Cormier when describing an online course conducted by Stephen Downs and George Siemens with more than two thousand participants (Hegyesi & Kártyás, 2013; Mackness, Fai, John, & WIlliams, 2010). Four years later, Stanford Professor, Sebastian Thrun started a course Artificial Intelligence accepting 160 000 students (Kennedy, 2014; Pappano, 2012).

Malaysia has embarked on this journey by first launching four MOOCs in September 2014 and now offering more than 90 MOOCs via the OpenLearning platform. The MOOCs are designed and delivered by 20 public universities and a few private universities. UNIMAS was amongst the pioneers

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and to date offers 13 MOOCs. This is in line with Malaysia Ministry of Higher education shifts as identified in the Malaysian Education Blueprint (Malaysian Education Blueprint 2015-2025, 2015).

Amongst the ten shifts identified by Malaysia Ministry of Higher education is Globalised Online Learning. Malaysia Ministry of Higher Education aims to implement blended learning model in higher education integrating technology, MOOC and current face-to-face models. This thus make studies on the design of MOOC essential so to make sure the model fits nicely and have high effectiveness in bringing forward knowledge and ideas to learners.

This study uses Assessing MOOC Pedagogy (AMP) to characterize ten pedagogical dimensions taken in four respective UNIMAS MOOCs; Animal Physiology, English in Media, English for Self-Expression and Multimedia Technology and Design. Each of this MOOCs has more than 200 student participations. Below are the ten pedagogical dimensions assessed in AMP (Swan, Day, Bogle, & Prooyen, 2014):

1. Epistemology - Does the course have an objectivist or constructivist philosophy?
2. Role of teacher - Does the course focuses more on the teacher role or the student role?
3. Focus of Activities - Does the course conduct convergent type of activities or divergent?
4. Structure - Is the course well structured?
5. Approach to content - Does the content presented in a concrete approach or abstract approach?
6. Feedback - Is the feedback given frequent and constructive?
7. Co-operative learning - Does the course encourage learning in teams?
8. Accommodation of individual differences - Does the course meet all learning types students?
9. Activities or assessments - Does the course use artificial or authentic examples?
10. User role - Is the user encouraged to take a generative role (developing the course)?

Further studies may use these findings to compare which type of design encourages higher engagement, have higher efficiency in completing students and other comparisons.

2. MATERIALS AND METHODS

A simple set of demographic questions were asked to collect background information of participants. 36 questions adapted from Assessing MOOC Pedagogy instrument evaluates the ten pedagogical dimensions. This study asked both instructor and student viewpoints of the MOOC and thus can outline the actual design of Malaysia MOOCs when considering both sides of learning.

Instructor with the highest "kudos" or ratings and randomly-selected students of the MOOC are approached until one respondent of each category (instructor and student) is obtained. High Kudos show that the instructor is recognised by the community in OpenLearning by contribution of good quality content that is deemed helpful and informative (*What are Kudos? - Open Learning, 2012*). The questionnaire was distributed through university mail and OpenLearning platform by attaching a Google Form link where participant can access the questionnaire and directly answers it in the simplest format.

Five UNIMAS MOOCs were addressed considering the massive number of participants in each were more than 300 participations. Participants of respective MOOCs were randomly approached until a response is received. If a MOOC received more than one responses, the first one was taken for further

analysis. A total of nineteen respondents were received for five UNIMAS MOOCs. Only four MOOCs were analysed as one did not have complete category pairing (instructor for ICT Competency did not submit a response). These four UNIMAS MOOCs are Animal Physiology, English in Media, English for Self-Expression and Multimedia Technology and Design.

3. RESULTS

The MOOC Pedagogy Table below is also adapted from Assessing MOOC Pedagogy showing two different approach a MOOC could have. The closer the point is to one side shows the intensity of the MOOC having the particular approach whilst middle point shows that the MOOC has a well mixture of both approaches or is at an average viewpoint.

Table 1: UNIMAS MOOC Animal Physiology

UNIMAS MOOC - Animal Physiology

PEDAGOGY	Approach	towards left approach		Neutral	towards right approach		Approach
EPISTEMOLOGY	objectivist	1	2	3	4	5	constructivist
ROLE OF TEACHER	teacher-centered	1	2	3	4	5	student-centered
FOCUS OF ACTIVITIES	convergent	1	2	3	4	5	divergent
STRUCTURE	less structure	1	2	3	4	5	more structure
APPROACH TO CONTENT	concrete	1	2	3	4	5	abstract
FEEDBACK	infrequent and unclear	1	2	3	4	5	frequent and constructive
COOPERATIVE LEARNING	unsupported	1	2	3	4	5	integral
INDIVIDUAL DIFFERENCES	unsupported	1	2	3	4	5	multifaceted
ACTIVITY / ASSESSMENT	artificial	1	2	3	4	5	authentic
USER ROLE	passive	1	2	3	4	5	generative
KEY	MOOC instructor				MOOC student		

Table 2: UNIMAS MOOC English for Self Expression

UNIMAS MOOC - English for Self Expression

PEDAGOGY	Approach	towards left approach		Neutral	towards right approach		Approach
EPISTEMOLOGY	objectivist	1	2	3	4	5	constructivist
ROLE OF TEACHER	teacher-centered	1	2	3	4	5	student-centered
FOCUS OF ACTIVITIES	convergent	1	2	3	4	5	divergent
STRUCTURE	less structure	1	2	3	4	5	more structure
APPROACH TO CONTENT	concrete	1	2	3	4	5	abstract
FEEDBACK	infrequent and unclear	1	2	3	4	5	frequent and constructive
COOPERATIVE LEARNING	unsupported	1	2	3	4	5	integral
INDIVIDUAL DIFFERENCES	unsupported	1	2	3	4	5	multifaceted
ACTIVITY / ASSESSMENT	artificial	1	2	3	4	5	authentic
USER ROLE	passive	1	2	3	4	5	generative
KEY	MOOC instructor				MOOC student		

Table 3: UNIMAS MOOC English in Media

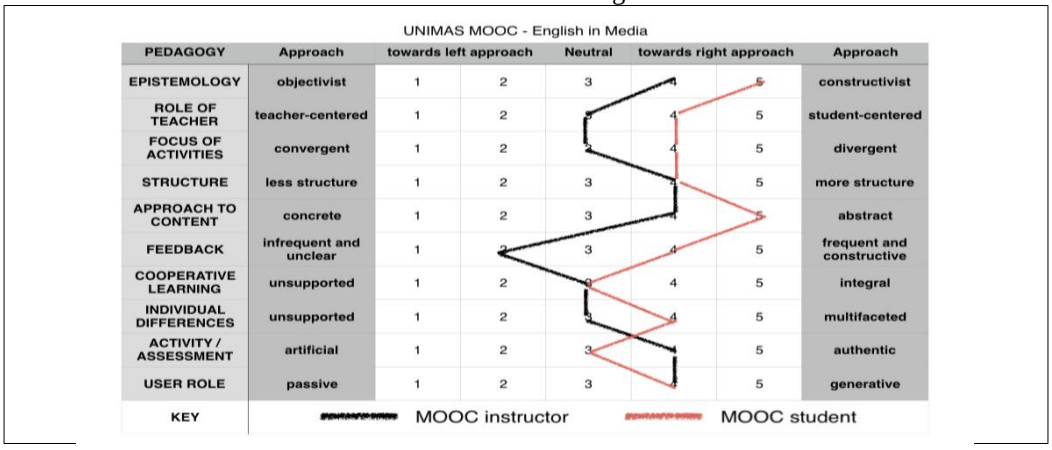

Table 4: UNIMAS MOOC Multimedia Technology and Design

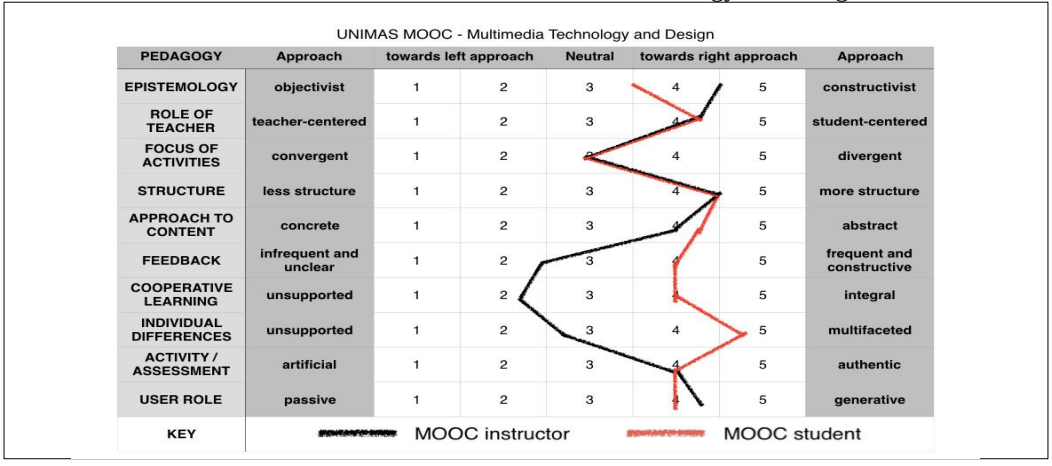

Table 5 below shows the overall result of the pedagogical approaches of each MOOC considering the mean point.

Table 5: Overall Result

Bil	Universities	MOOC	Student / Instructor	Episotomology	Role of Teacher	Focus of Activities	Structure	Approach to Content	Feedback	Cooperative Learning	Accommodation of Individual Differences	Activities / Assessments	User Role
1	Universiti Malaysia Sarawak (UNIMAS)	Animal Physiology	Instructor	Constructivist	Teacher-centered	Convergent	More Structure	Concrete	Infrequent and Unclear	Average	Multifaceted	Authentic	Generative
			Student	Constructivist	Student-centered	Divergent	More Structure	Abstract	Frequent and Constructive	Integral	Multifaceted	Authentic	Generative
2	Universiti Malaysia Sarawak (UNIMAS)	English for Self Expression	Instructor	Constructivist	Teacher-centered	Mix	More Structure	Abstract	Infrequent and Unclear	Integral	Multifaceted	Authentic	Generative
			Student	Constructivist	Mix	Convergent	More Structure	Abstract	Frequent and Constructive	Integral	Multifaceted	Authentic	Generative
3	Universiti Malaysia Sarawak (UNIMAS)	English in Media	Instructor	Constructivist	Student-centered	Mix	More Structure	Abstract	Infrequent and Unclear	Average	Unsupported	Authentic	Generative
			Student	Constructivist	Student-centered	Divergent	More Structure	Abstract	Frequent and Constructive	Integral	Multifaceted	Authentic	Generative
4	Universiti Malaysia Sarawak (UNIMAS)	Multimedia Technology and Design	Instructor	Constructivist	Student-centered	Mix	More Structure	Abstract	Infrequent and Unclear	Unsupported	Unsupported	Authentic	Generative
			Student	Constructivist	Student-centered	Mix	More Structure	Abstract	Frequent and Constructive	Integral	Multifaceted	Authentic	Generative

All four UNIMAS MOOCs have similar epistemology approach - constructivist. Two of the MOOC (English in Media and Multimedia Technology and Design) have student-centered approach whilst English for Self-Expression is deemed mix approach, and Animal Physiology is seen as teacher-centered by instructor but student-centered by the student. Focus of activities differ in all MOOCs. To summarise, it is viewed as a mixture of both convergent and divergent focus. All MOOCs are well structured. All MOOC have abstract approach to content except Animal Physiology which is considered as concrete approach by the instructor but abstract approach by the student.

All instructors viewed the feedback to be infrequent and unclear yet all students viewed it to be frequent and constructive. Cooperative learning is integral in English for Self-Expression and average (neither integral nor unsupported) for Animal Physiology and English in Media. Instructor of Multimedia Technology and Design deemed the MOOC do not support cooperative learning whilst the student vice versa. Accommodation of individual differences were multifaceted (supported) in Animal Physiology and English for Self-Expression. Both English in Media and Multimedia Technology and Design were viewed to not support individual differences by instructors yet vice versa by the student. All four MOOCs used authentic examples in activities and assessments and encourage user to have a generative role.

4. DISCUSSION AND CONCLUSION

According to Bhowmik, Roy, and Banerjee (2013), in order to improve delivery method, research, evaluation and assessment are important. The data above with additional information can help better improve the design accordingly. The current educational technology allows learner to be in control of their learning at their own convenience (Kop, Fourmier & Mak as cited in Morrison, 2015, p. 35). This paradox along with the fact that technology of the platform for MOOCs make it almost impossible to separate technology and pedagogy. As they are interdependent, each relying on the other for successful learning. Anderson and Dron (2011) metaphorically describe two co-dependent relationships as a dance where the technology sets the tempo and creates the music and the pedagogy is the instructor determining the moves to take. This shows that the implications of design are very significant as it leads the way to a beautiful masterpiece (learning something).

Thus, this emphasises the need for course designers to embed and integrate technological tools and applications with skill and knowledge. The ten pedagogical dimensions simply chunk the design into ten different areas important in MOOC as it was initially derived from a tool to describe pedagogical dimensions of computer-based instruction (Reeves as cited by Swan, Day, Bogle, & Prooyen, 2014). This gives better focus on what to know and to work upon.

The result obtained from this study shows that there are no significant differences as both instructor and student viewed similarly on most of the pedagogical dimensions. The constructivist approach of the MOOCs showed that the philosophy behind UNIMAS MOOCs is on the right pillar as Ruberg (2015) mentioned that constructive learning ensures effective online learning. This follows four pedagogical dimensions namely role of teacher, co-operative learning, examples used in activities and assessments as well as user role. The MOOC should be student-centred, supporting co-operative learning, using authentic examples in activities and assessments and encouraging user to be generative.

As for UNIMAS MOOCs, Animal Physiology and Multimedia Technology and Design are in need to be reviewed. The instructor for Animal Physiology deemed the MOOC to be teacher-centred whereas the instructor for Multimedia Technology and Design felt the MOOC does not support co-operative learning. These two dimension theoretically should be student-centred and supporting co-operative learning. Other pedagogical dimensions were almost all aligned with no vivid difference that needed to be put forward. However, this study would like to suggest further research on the focus of activities used inside the MOOC as there are notable differences in the way instructor and student view.

As this study was only aim to characterise the pedagogical approaches taken in the design of the MOOCs, the limitations included the inability to compare and produce inferential analysis relating the result in depth. Such comparison and inferential analysis are in need of observational understanding of the tools and methods of delivery as well as information on successful completion rate and effectiveness of MOOC which all were not attainable in the short time of this research. The MOOCs in Malaysia could not be analysed according to field of content as it appears to have no immediate difference when comparing both. This is shown in the result for UNIMAS MOOC English in Media and UNIMAS MOOC Multimedia Technology and Design above.

Approaching 2025, the Ministry of Higher Education aims to integrate MOOC in blended learning model for higher education with the current technology and face-to-face models. This opens a pedagogical and design challenge that need to be addressed so to provide the best learning environment for learners of all ages. These initiatives are moving towards the third shift in Malaysian Education Blueprint for Higher Education which is to develop a Nation of Lifelong Learners and ninth shift to accommodate Globalised Online Learning both essential to encourage a globalised learning society.

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