THE RELATIONSHIP BETWEEN MOOC CONTENT DESIGN AND STUDENTS' PERFORMANCE AMONG ENGINEERING STUDENTS IN UNIVERSITI TEKNIKAL MALAYSIA MELAKA (UTeM)

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‘I hereby declared that I had read through this thesis and in my opinion that this thesis is adequate in terms of scope and quality. This thesis is submitted to Universiti Teknikal Malaysia Melaka which fulfill the requirements for the completion and award of Bachelor Degree of Technopreneurship with Honors (Btech).’

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This report submitted in partial fulfillment of the requirements for the award Bachelor of Technopreneurship with honors

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DECLARATION

"I hereby declare that this report entitled **The relationship between MOOC content design and students' performance among engineering students in Universiti Teknikal Malaysia Melaka (UTeM)** is the result of my own research, except certain explanations and passages are cited as a reference in the report."

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DEDICATION

This thesis is dedicated to my family members especially my parents who always provide spiritual and financial supports for me, as well as my beloved supervisor and panel who patiently guided me along the research journey.

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ABSTRACT

Over the years, there has been a tremendous growth in online social networking which contributed to the revolution of higher education's learning environment. Massive Online Open Courses (MOOCs) is now common in online education which provides open networks of self-directed learning. MOOCs are refer as a continuation trend in innovation that initiated by learning from geographical distance and online. MOOCs is a current evolvement in higher learning institution in Malaysia with the aims to provide quality education for the students. However, there are some challenges in developing effective instructional design courses and retaining learners in MOOCs. Therefore, purposes of this study is to discover the relationship between MOOC's content design and students' performances among UTeM's engineering students and to determine the influenced of demographics factors on all variables. Through literature review, variables are identified such as courses content design, enhancement in teaching and learning, students' performance, and demographic factors. In this study, 373 samples have been collected according to Krecjie and Morgan's table and the data analysed using SPSS. The result reveal that there are partially significant difference of all variables based on demographic factors. In addition, results also proven that there are significant relationship between courses materials, courses activities, and courses tools with students' performance. Further research will be carried out to improve MOOC content design in order to enhance the students' performance in higher education.

Keywords: Massive Online Open Learning (MOOCs), MOOC's content design, students' performance.

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ABSTRAK

Selama bertahun-tahun, terdapat pertumbuhan yang besar dalam rangkaian sosial dalam talian yang menyumbangkan kepada revolusi persekitaran pembelajaran pendidikan tinggi. Kursus Dalam Talian Terbuka Secara Besar-Besaran (MOOCs) kini lazim dalam pendidikan secara talian yang menyediakan rangkaian pembelajaran yang berorientasikan diri. MOOCs dirujuk sebagai trend kesinambungan inovasi yang dimulakan dengan pembelajaran dari jarak jauh dan dalam talian. MOOCs adalah satu perkembangan semasa di institusi pengajian tinggi di Malaysia dengan matlamat untuk menyediakan pendidikan berkualiti untuk para pelajar. Walau bagaimanapun, terdapat beberapa cabaran dalam membangunkan kursus pengajaran yang berkesan dan mengekalkan pelajar di MOOCs. Oleh itu, tujuan kajian ini adalah untuk mengetahui hubungan antara reka bentuk kadungan MOOC dan prestasi pelajar di kalangan pelajar kejuruteraan UTeM dan mengenal pasti faktor demografi yang mempengaruhi semua pemboleh ubah. Melalui kajian literatur, pemboleh ubah dikenal pasti seperti reka bentuk kandungan kursus, peningkatan dalam pengajaran dan pembelajaran, prestasi pelajar, dan faktor demografi. Dalam kajian ini, 373 sampel telah dikumpulkan mengikut jadual Krecjie&Morgan dan data dianalisis dengan menggunakan SPSS. Hasil Kajian menunjukkan bahawa terdapat perbezaan sebahagian besar dari semua pemboleh ubah berdasarkan faktor demografi serta terdapat hubungan yang signifikan antara bahan kursus, aktiviti kursus, dan alatan kursus dengan prestasi pelajar. Kajian lanjut akan dilakukan untuk meningkatkan reka bentuk kandungan MOOC untuk meningkatkan prestasi pelajar dalam pendidikan tinggi.

Kata kunci: Kursus Dalam Talian Terbuka Secara Besar- Besaran (MOOCs), reka bentuk kandungan MOOC, prestasi pelajar.

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LIST OF SYMBOL

t = t-value

R = correlation coefficient value

R square = coefficient of determination

f = F-Test value

P = significant value

B = beta value

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter presented research background and problem statement that related to this research. Besides, research questions and research objectives has been constructed regarding to the problem statement. In addition, scope and limitation as well as importance of study also included and further explained. Purpose of this study is to understand the relationship of MOOC content design and students' performance among engineering students. Besides, objective of this study is to identify the differences of all variables based on demographic factors.

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1.2 Background of Study

Online social networking has grown tremendously in recent years. Online and other advanced technologies is usually been utilized frequently in daily routine. According to the data from Statista (2019), around 3.9 billion of internet users globally in 2018, are increase from 3.65 billion in the past year. The ways of people work, learn, manage business, interact with each other and obtain information are affected by technology (Ally & Samaka, 2013).

According to the study conducted by Waghmare (2015), ICT is being utilized in active learning as a latest trend in higher education. Computer and Internet is necessary to be used in developing a good learning environment. A well-developed learning environment was essential to make sure learners are not excluded from the technological world. Additionally, from the finding of Nazarenko (2015), young individuals are more flexible and approachable to new technologies which can encourage them to utilise technologies for learning purposes. Therefore, there are some transformation occurred in the learning environment in this emerging world. Siemens & Downes (2008) has redefined the entire concept of a traditional and closed group educational course to an open networks for self-directed learning.

Massive Online Open Courses (MOOCs) is currently well-known online education trend. Siemens (2009) stated that MOOCs are refer to a trend where innovation and experimentation are keep going by utilizing advanced technology to offer huge amounts of users with education chances. Shah (2018) report shown that there are significantly increases in the amount of learners registered in MOOC to 78 million from 58 million in 2016. From findings of Shah (2018), the amount of MOOCs being provided grows from 6,850 in 2016 to 9,400 in 2017. There are around 800 universities contributed at least one MOOC in 2017.

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MOOCs is a current evolvement in Malaysia's higher education institutions. The aims for adopting MOOCs in higher learning institution are to deliver good education for people by introducing an organization's brand, attracting fresh students to enroll into the organization, engaging with other entities, develop R&D opportunities in internet-based learning, and changing conventional education methods. Technology and business is the most well-known subjects for MOOCs in 2017, followed by the social sciences, science and the humanities (Shah, 2018). Hence, mission in conducting this research is to identify relationship between MOOCs content design and students' performance among UTeM's engineering students.

1.3 Problem Statement

In today's high-tech and dynamic world, learning environment among the learners around the world are keep changing and continuous improved with the advanced of technology. Previous researchers, Fadzil et al. (2015) noted that technology is a necessity instruments for current education. Integration of technology and traditional learning have leads to the existence of online learning as well as established of MOOCs. Currently, easy access to advanced technologies enable students to manage and monitor their learning sources (Mackness et al., 2010).

MOOCs had become a national agenda in the higher education institution of Malaysia as it is addressed in the 11th Malaysian Plan (2016-2020). MOOCs have been launched by Universiti Teknikal Malaysia Melaka (UTeM) on 7th September 2015. In education, the main objectives in learning is the outcome which is the students' performance. It is because excellent academic achievement is not only a personal's aim to become an expertise or knowledgeable people in particular field, but also considered as the added value to retain a productive society. Hence, relationship between MOOCs content design and performance of students are

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focused in this research. Besides, studies on relationship between MOOCs content design and students' performance are very limited. According to Kay et al. (2013), there are restricted studies that highlight on the instructional design of MOOC in recent years. In the research of Koller et al. (2013), there are little amounts of students that able in completing a MOOC successfully which contribute to MOOC's issue. Previous researchers, Rivard (2013) found that the dropout rate in MOOC is quite high which encompassed around 90%. Furthermore, Hew & Cheung (2014) have conducted a study about the reasons student sign up and drop the courses in MOOCs. The results show that failed to understand content materials is one of main causes of dropout from MOOCs (Hew & Cheung, 2014).

In addition, Margaryan et al. (2015) noted that many of MOOCs suffer from ineffectively implemented instructional design principles into the courses. Salyers et al. (2014) reported that e-teaching in a faculty requires design expertise and delivery skills. From the finding of De Freitas et al. (2015), MOOCs are face some challenges in ensuring the students are accomplished the courses successfully and retaining students in a particular courses. Some integration of future MOOCs can be done by including some useful additional instruments in order to deliver interesting lecture courses and education tools in the learning platform. Additionally, Chen & Chen (2015); Diver & Martinez (2015) claimed that one of the interesting issue that can be investigate in MOOCs is gender.

Furthermore, the sample size that been selected is among engineering students in UTeM. It is because UTeM is more focus on Engineering field and the major subjects that offers is Engineering subjects. According to Portal UTeM, there are total 6 engineering faculties that been offered by UTeM. Therefore, in this study, students' performance among engineering students in four faculties was investigate with the aim of determining the effect of MOOCs' content design on the students' performance. Besides, this study also will determine the differences of courses content design, enhancement in teaching and learning, and students' performance based on demographic factors. This study is important and appropriate to be conducted in determining the relationship between MOOCs content design and

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students' performance. The research result will shows the overall students' performance in utilising MOOCs platform for education purposes. This research findings could help in providing some empirical data for further study. More research are required to improve and enhance the current MOOC content design to ensure better students' performance in higher education.

1.4 Research Questions

The following research questions are identified to obtain research objectives as well as to investigate relationship between MOOC content design and students' performance:

- What is the difference between courses content design, enhancement in teaching and learning, and students' performance based on demographic factors?
- What is the relationship between courses content design and students' performance?
- What is the relationship between enhancement in teaching and learning and students' performance?
- What is the main factor that contributes to students' performance?

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