DIGITAL LITERACY OF EDUCATORS AND THEIR ACCEPTANCE OF MOOC PLATFORMS IN GULF COUNTRIES

BY

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ABSTRACT

This research is pursued to identify the digital literacy level required to implement Massive Open Online Course (MOOC) by educators in Gulf countries for higher education institutions. It is also intended to determine educators' acceptance of MOOC in GCC universities. In light of this context, exploring educators' point of view towards a unified MOOC platform for universities in GCC is also considered as one aspect to highlight in this research. MOOC is adopted by few higher education institutions in the Arab world; however, this kind of learning requires certain level of digital literacy for all stakeholders. This includes most importantly the educators. Eventually, there is a dearth of academic research that study the importance of digital literacy and educators' acceptance of MOOC in the Gulf countries. Most of the studies focus on the perception and attitude of learners towards MOOC rather than educators. The research answers the questions posited at the beginning which are: What is the current level of digital literacy of educators compared to the digital literacy required to design a MOOC? What is the impact of the demographic variables and other variables on using MOOC in higher education? How does MOOC improve the level of achievement of graduates from the perspectives of educators?. This research has utilized "Digital Literacy Scale" (DLS) to measure the level of digital literacy of educators. While "Unified Theory of Acceptance and Use of Technology" (UTAUT) model has been modified to identify the acceptance of educators of MOOC. To achieve this aim, a mixed methodology is used to gather information about educators and MOOC. A questionnaire survey was administered on a sample size of 200 educators who deliver courses on the most prominent MOOC platforms. The selected platforms are Coursera, EdX, Udacity, FutureLearn, Rwaq and Edraak. Additionally, observations and interviews have been conducted to answer the five questions, and to test the eight hypotheses of the research. Notwithstanding some caveats, results unveiled that educators who currently teach through MOOC platforms have a good level of digital skills. Generally, the educators have a positive attitude towards MOOC, and they support the proposal of developing a unified MOOC platform for universities in Arab world. Finally, the findings revealed a significant impact of factors such as digital literacy and globalization on the use of MOOC.

خلاصة البحث

ABSTRACT IN ARABIC

تسعى هذه الدراسة لتحديد مستوى المعرفة الرقمية المطلوبة من المعلمين لتمكينهم من تطبيق نموذج "موك" في مؤسسات التعليم العالي في دول الخليج العربية. كما تهدف إلى تحديد توجه المعلمين في هذه الدول نحو تبني مبادرات التقنية المستقبلية مثل "موك" في التعليم العالي. وعلى ضوء ذلك تم استكشاف آراء التربويين اتجاه إعداد نموذج موحد لـ"موك" خاص بالجامعات في الدول العربية. برنامج "موك" تم تبنيه من قبل بعض مؤسسات التعليم العالي في العالم العربي، ولكن هذا النوع من التعليم يتطلب معرفة رقمية من جميع المعنيين، ويشمل ذلك بالطبع فئة المعلمين، إلا أن هناك دراسات قليلة في مجال البحث في المعرفة الرقمية وتأثيرها على اتجاهات ونظرة المعلمين لهذا النوع من المبادرات في دول الخليج العربية، كما يندر وجود دراسات تغطي موضوع اتجاهات المعلمين نحو "موك"، إذ في الغالب تركز الدراسات على تناول موضوع اتجاهات المتعلمين والمستخدمين فيما تولي اهتمام أقل للمُعلمين. في هذا البحث تمت الإجابة على الأسئلة المطروحة وهي كالتالي: ما هو مستوى المعرفة الرقمية للمعلمين مقارنة بالمستوى الرقمي المطلوب لتصميم موك؟ ما تأثير العوامل المختلفة كالمتغييرات الديموغرافية وغيرها على تقبُل التربويين لمنصة موك؟ كيف يساهم موك في رفع المستوى المعرفي للطلبة من وجهة نظر المعلمين؟. تمت الاستعانة بمقياس المعرفة الرقمية لتحديد مستوى المعرفة الرقمية للمُعلمين. كما تم تطبيق نموذج "النظرية الموحدة لقبول واستخدام التكنولوجيا UTAUT لغرض معرفة توجه المعلمين ونظرتهم إلى "موك" كواحدة من المبادرات في مجال التعليم الإلكتروني. انطلاقاً من هذا، تم تطبيق استبانة استطلاعية على عينة من 200 تربوي في التعليم العالي الذين يشاركون في منصات "موك" في التعليم، بالإضافة لذلك تم استخدام وسائل "الملاحظة" و"المقابلة" للإجابة على أسئلة البحث واختبار فرضياته. بالرغم من وجود بعض التحفظات، إلا أن نتائج البحث بينت أن التربويين الذين يستخدمون منصات موك في التعليم لديهم مستوى جيد من المعرفة الرقمية المطلوبة، كما أن لديهم توجه إيجابي نحو موك، وهم يدعمون مقترح انشاء منصة موحدة لموك تضم أهم الجامعات العربية في دول الخليج. وأخيراً بينت نتائج الدراسة بأن عامل المعرفة الرقمية بالإضافة إلى العولمة لهما تأثير هام على استخدام موك.

APPROVAL PAGE

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DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

Hana Radhi AlQaidoom

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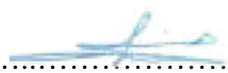

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ALECSO	Arab Leagues Educational, Cultural and Scientific Organization
BI	Behavioral Intention
GCC	Gulf Cooperation Council
HE	Higher Education
HEI	Higher Education Institution
HR	Human Resources
ICDL	International Computer Driving License
ICT	Information and communication technologies
IIUM	International Islamic University Malaysia
IS	Information system
LAS	League of Arab States
LMS	Learning Management System
MO	Ministry of Education
MOOC	Massive Open Online Course
PC	Personal Computer
PEU	Perceived ease of use
PLS-SEM	Partial least squares- Structural equation modelling
PU	Perceived usefulness
SEM	Structural equation modelling
SI	Social influence
SPSS	Statistical Product and Service Solutions
TAM TPB	Combined, Theory of Reasoned Action -Theory of Planned Behavior
TAM	Technology acceptance model
TBP	Theory of Planned Behavior
TRA	Theory of Reasoned Action
UTAUT	Unified Theory of Acceptance and Use of Technology
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

In this chapter a general overview of the research and its background are highlighted. In addition, it covers all the elements that shape and define the problem. This encompasses the questions, objectives, and purpose of the research. Furthermore, this chapter outlines the problem statement, the significance of the research, the definition of terms, and the limitations of the study.

1.2 BACKGROUND OF THE STUDY

In the last decade, particularly in 2012 Massive Open Online Course (MOOC) has been introduced to students around the world in a form of an e-learning platform that aims to reach a massive audience. Later in 2013, the first Arabic MOOC platform "Rawaq" was launched by Saudi establishers to target Arab audience. Similarly, "Edraak" has also been introduced by queen Ranya foundation and development to target Arab people. However, with more advancement in MOOC deployment, universities in Gulf countries seem to be away from MOOC. On the contrary, prominent MOOC platforms such as Coursera, Edx, and Udacity have partnered with prestigious and elite universities worldwide. There are several reasons that impacted the deployment of MOOC in higher education of Gulf countries, in which acceptance and skills of educators are considered one of the most important factors that this research tackles.

In fact, digital literacy becomes the subject of educators and researchers since the first personal computer has been introduced to classrooms. Nowadays many higher education institutions (HEIs) are beginning to embrace requirements for digital literacy.

As an internationally recognised standard for measuring Information and Communication Technology (ICT) skills for individuals, International Computer Driving License (ICDL) is widely used (Canada, 2017). Decision makers in ICDL emphasized on the importance of digital literacy by citing the words of the President of the European Commission, José Barroso, who mentioned:

> …the ability to use computers is now a crucial aspect of most people's careers, and therefore their prospects in life. So digital literacy is a major factor of economic success for both individuals and communities…people who do not have the knowledge and skills to use the technology will tend to fall by the wayside" (Canada, 2017, pp. 1).

The challenge for all members in higher education (HE) is to acquire more knowledge and skills in information technology and media that goes sometimes beyond the basic digital skills.

On the other hand, when looking at higher education trends nowadays, e-learning is adopted by many universities and colleges (Melki et al., 2017), and as a result, different initiatives have been introduced to education as e-learning platforms. One of these platforms is Massive Open Online Course (MOOC). E-learning can be defined as "the use of information and communication technologies to enable access to online learning/teaching resources" (Rodrigues et al., 2019, p. 89). E-learning is the area of education where it requires all stakeholders to have some certain level of knowledge in digital literacy in order to be implemented effectively.

The lack of the necessary skills to use available computer and communication technology has hindered educators' use of e-learning according to Ghazal et al. (2018).

Hadullo et al. (2017) concluded in their study that educators being recognized to fear revealing their low or no level of digital literacy. Consequently, this necessitates the inclusion of digital literacy in education to encourage educators to be more personally motivated to adopt MOOC. Gulf countries have embarked on major initiatives such as "e-learning" and the "Open Online Courses" to reform education and utilize ICT in learning; however, these efforts still below the international standards according to Abbas (2016).

Based on the review of the literature, the level of digital literacy of educators in Arab countries is not clearly measured as there are no requirements for ICT qualification

when applying for an educational job (El-Kogali & Krafft, 2019). In addition, there is a lack of research in this area (Song, et al., 2017). Consequently, knowledge and skills of educators in terms of ICT need to be investigated.

For the successful and effective implementation of MOOC as an e-learning platform in higher education institutions of Gulf countries, it becomes vital to measure the level of digital literacy of the educators. Additionally, it is also significant to know how digital literacy affects educators' acceptance of MOOC platform. Admittedly, educators' acceptance is considered as an integral predictor of the use of new technologies in e-learning settings (Kisanga & Ireson, 2016).

This will help the decision makers to identify the relationship between gaining the appropriate digital skills and the acceptance of educators. Correspondingly, it will help stakeholders to pay more attention to the set of digital skills required to use MOOC and to identify the standard computer certification needed for the educators. Furthermore, they can embark on a new initiative, as proposed in this research, to establish a unified MOOC platform for universities in Gulf countries.

1.3 STATEMENT OF THE PROBLEM

Nowadays, MOOC becomes one of the popular ways of e-learning employed in education (El Emrani et al., 2019). Educators in higher education institutions of Gulf countries should have the right level of digital literacy and the positive attitude towards e-learning initiatives such as MOOC (Adell, 2009). These two factors are important for educators to participate effectively and successfully in implementing MOOC and developing a unified MOOC platform for Gulf countries that will fulfil the needs of Arab students.

However, there is no evidence which support that educators in higher education institutions of Gulf countries possess the required digital literacy needed to successfully implement MOOC (Kuzbor, 2019). On the other hand, being incompetent in using digital technologies is negatively impacting educators' acceptance of MOOC which by

the end leads to unsuccessful implementation of it. To date, though, trivial consideration has been given to undertake research that examines educators' acceptance of MOOC platforms (Papathoma, 2019; Hakami, 2018; Zhu et al., 2018; AlShafei, 2015). The impact of digital literacy on the acceptance of MOOC by educators and the relationship between these two variables need to be evaluated.

By using digital literacy scale (DLS) to measure the level of digital literacy of educators in higher education institutions who are teaching in MOOC, a clear status of their level will be determined. On the other hand, by utilizing a survey questionnaire based on (UTAUT) model, the acceptance of MOOC by educators and how it is affected by the level of digital literacy is examined.

1.4 PURPOSE OF THE STUDY

The main purpose of this study is to determine the level of digital literacy and to identify the acceptance of MOOC by educators in higher education institutions of Gulf countries. It also aims to propose a unified MOOC platform that encounters the factors which lead to its success. In order to reach this aim, it becomes imperative to measure the current level of digital literacy of the educators who use MOOC and to investigate their acceptance of this new emerging platform. Subsequently, this comprises the effects of other factors on educators' acceptance of MOOC in education. Therefore, this study covers the impact of demographic variables, corporate governance, social influence, technological factors, and globalization on the educators' acceptance of MOOC.

1.5 RESEARCH QUESTIONS

1- What is the current level of digital literacy of educators compared to the digital literacy required to design a MOOC?
2- What is the impact of demographic variables of educators on using MOOC in higher education?
3- To what extent do digital literacy, corporate governance, technological factors, social influence, and globalization affect the use of MOOC in higher education?
4- How does MOOC improve the level of achievement for graduates from the perspectives of educators?
5- What is the perception of educators towards a proposed unified MOOC platform that incorporate prominent Gulf universities?

1.6 RESEARCH OBJECTIVES

The study aimed to achieve the following objectives:

1- To identify the current level of digital literacy of educators compared to the digital literacy required to design a MOOC.
2- To examine the impact of demographic variables on educators' attitude towards applying MOOC in higher education.
3- To determine the extent to which other factors such as digital literacy, corporate governance, technological factors, social influence, and globalization affect using MOOC.
4- To evaluate the impact of MOOC platforms on graduates' achievement from the perspectives of educators.
5- To propose a unified MOOC platform for Gulf countries to be adopted by higher education in these countries.

1.7 SIGNIFICANCE OF THE STUDY

This study is significant to stakeholders and educators in general in several ways. This section discusses the significance of the research in more detail as follows:

Firstly, educators have to possess the necessary technological skills to deal with different documents and technological instruments in MOOC. Despite having some institutions that mandate educators to possess some ICT skills; however, there is a need to identify these skills and to examine their impact on educators' acceptance of MOOC. Educators in higher education institutions in Gulf countries are employed mainly based on their qualification and experience without looking into skills beyond their professional degrees (El-Kogali & Krafft, 2019). While MOOCs initiatives are adopted by some higher education institutions in the Arab world (Alshahrani & Ally, 2016), this kind of learning requires certain level of digital literacy for all stakeholders. This includes most importantly the educators who are responsible in a way or another for the adoption of MOOC. Nonetheless, this calls for paying more attention to educators' involvement in the decision making. For instance, during urgencies such as Coronavirus pandemic lockdown, there were no sufficient time to prepare educators for a comprehensive online teaching. Therefore, many HEIs failed to cope with the situation and struggled to have an instant solution to the problem. In their study, Chang and Fang, (2020) concluded that instructors were not well-oriented for the online learning during Covid-19. In addition, many of them indicated that educators are unskilled to use sophisticated online technologies. MOOC was a solution for some HEIs who tried to utilize MOOC as a robust solution to the problem of preparing online courses. However, if educators were involved beforehand in MOOC, the task would be easier during emergencies. Educators' involvement will increase their participation and commitments to their profession and institutions (Brezicha et al., 2020).

This research explores the opportunity of identifying the current level of digital literacy of educators and recognizing the gap in ICT skills. It also explores the current training provided to educators regarding ICT and computer skills to highlight the standards used, and to examine the level of skills acquired from the training.

Secondly, another factor that affect educators' adoption and implementation of MOOC is their acceptance of this new type of learning technologies. The acceptance of educators plays a crucial role in identifying the appropriate technology to deploy, highlighting the gap in skills, and supporting educators to accept the transformation from traditional e-learning to an open platform (Kisanga & Ireson, 2016).

In her recommendation, Almuhanna (2019) emphasized on one of the significant areas of research that needs to be investigated regarding MOOC, which is studying the perception and attitude of educators towards MOOC platform. She asserted that there is a few research that investigated the perspective of educators towards MOOC in Arab region. Hakami (2018) elaborated more about this matter and mentioned that there are well-documented studies in the literature regarding mobile-learning and e-learning; however, there is a lack of studies that tackle the acceptance of MOOC in education sector. Hakami (2018) added that MOOC is different than the other learning technologies in its openness, scalability, and heterogeneity of learners.

Adell (2009) agreed with other researchers on the importance of understanding the perception of educators as it holds the keys to improve their skills and profession. He asserted that attitudes and beliefs contribute to the successful integration of technology in educational practices. On the other hand, Zhu et al. (2018) added that most of the research about MOOC focus on the perspective, behaviour, and participation patterns in MOOC from learners' perspectives. Despite the important role of educators, few studies according to Zhu et al. (2018) have investigated the delivery of courses using MOOCs from educators' perspectives.

Papathoma (2019) also supported this view that there are rich evidences of research that provide knowledge about MOOC from learners' perspectives, while there are few empirical evidences from the perspective of educators. He stressed that the study of MOOC is a new area for educators which involves new practices. Whereas, in their research Song et al. (2017) recommended to conduct more research on the acceptance and adoption of MOOC as there is a lack of research in this area.

AlShafei (2015) affirmed that the role of educators is vital to assure the success of integrating technology in teaching and learning. AlShafei (2015) emphasized that there are a few and rare research that shed light on the acceptance of educators towards

the use of technology in education. This view is supported by Papathoma (2019) who emphasized that little attention has been paid to educators' perspectives in relation to MOOC. Some other researchers propose that educators' perception in MOOC context is a rich area for future research. From another point of view, Hakami (2018) clarified that with the few current studies existed in the literature nearly all of them validated in non-Arabic culture.

Moreover, Rivera and Ramirez (2015) recommended more research to be conducted in order to explore MOOC benefits and how it can be used effectively to improve individual digital skills.

Consequently, identifying the level of impact of digital skills and educators' acceptance will contribute in proposing a successful unified Gulf MOOC platform that serves a wider range of audience in the Gulf region.

Finally, this study evaluates how digital literacy impact the acceptance of educators and motivate them to contribute in creating a comprehensive MOOC platform. Therefore, the researcher has utilized the "Unified Theory of Acceptance and Use of Technology" (UTAUT) model with some few amendments for the purpose of identifying the acceptance MOOC by educators. Consequently, Digital Literacy Scale (DLS) has been utilized to measure the level of digital literacy of educators that are required for MOOC.

In conclusion, this study is significant to the decision makers and the stakeholders in HEIs in Gulf countries who are planning to adopt MOOC as a method of modern learning used to provide better quality education. The study will provide the decision maker with the required information to understand ICT requirements, provide quality related training, and to set standardized technological tools to offer online learning to a massive number of learners. Last but not least, the study will open the door to decision makers to establish a unified MOOC platform for Gulf universities in their region.

1.8 LIMITATIONS OF THE STUDY

The sample in this research is limited to a selected number of MOOC platforms that include Arab educators who teach courses in MOOC platforms for higher education. This has no significant impact on the final results of the research as other platforms have either a very low number of Arab educators or not any at all.

The research is also limited to educators within the Gulf countries. There are six MOOC platforms that were selected as the scope of the sampling; these are: Coursera, Udacity, EdX, Rwaq, and Edraak. Therefore, further studies can be undertaken to include more platforms that are not limited to academic purposes. Furthermore, the research is limited to higher education level which means that the primary and high school education levels are not included in the study. Mainly, the reason why other educational levels are excluded is because e-learning is widely used in higher education and can be easily embedded within this level. Other future studies can select the scope of either primary or high school levels to compare and contrast the results. One other limitation of the research is the self-reported survey which is not conducted in an experimental setting. This research adopted self-reporting assessment of skills for the advantages stated in the research methods section of the research; however, experimental testing of educators' skills may provide more validated results on the right level of educator's digital skills. Finally, the interviews were limited to 8 experts only since this research is based on a triangulation method which is not limited to one type of methods to collect data, 8 experts from higher education is considered sufficient; however, future studies can include more interviewees as long as information saturation is not affected. The results of this research can be supported by having more interviewees if the type of the research is more likely to be qualitative. However, no significant impact can be found on the final results of this research as the impact of qualitative data is trivial and is not used for generalization.