MEASURE FACTOR OF AFFECTING DIGITAL LEARNING, AND LEARNING AND INNOVATION SKILLS AMONG UNIVERSITY STUDENT IN MALAYSIA

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This thesis is submitted in partial fulfilment of the requirements for the awardof Bachelor of Technology Management and Technopreneurship

(Honours in Technology Innovation)

Faculty of Technology Management and

Technopreneurship

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

JANUARY 2023

DECLARATION OF ORIGINAL WORK

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DEDICATION

I would want to express my appreciation to my beloved family and friends, who were always encouraging and supportive as I worked on the research. In addition, Mrs. Nor Ratna Binti Masrom and panel, Ts. Dr. Nurulizwa Binti Abdul Rashid, supervised my research, and courses mates assisted me in completing the research path.

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ACKNOWLEDGEMENT

Bismillahirrahmannirrahim,

Praise to Allah S.W.T who blessed me the strength and dedication to complete this thesis. Peace and prayers be upon to His Final Prophet and Messenger MuhammadS.A.W.

First and foremost, I want to express my sincere gratitude to my supportive supervisor, Mrs. Nor Ratna Binti Masrom, and panel, Ts. Dr. Nurulizwa Binti Abdul Rashid, who reserved their time to led and encourage me during the whole process ofcompleting my final year project. Each of the knowledge, moral support, and guidancehas helped me throughout the whole process. I was able to complete m final year project effectively and million thanks to their coaching. Moreover, I would like to use this opportunity to thank my friends and course mates for their assistance and inspiration, and time when I have a difficulty to complete this thesis.

Last but not least, my deepest gratitude would be to the pillars of my strength, which are my beloved family who never fails to give their support and motivate me inwhatever I do. Their unconditional love, guidance, time and support really gave a hugeimpact for me to continue my journey as a student. Finally, I want to thank to the respondent, who spend their time to fill out the questionnaires and without them my thesis is not perfect.

Thank you.

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ABSTRACT

Digital learning is any type of education that properly utilizes technology. Each student may plan, gather, manage, evaluate, and report information with the use of flexible digital learning tools that allow for personalization. It is an issue of achieving the same result utilizing various learning routes (Lilian Anthonysamy, et. al., 2021). The 4Cs-communication, collaboration, creativity, and critical thinking are identified by the Partnership for 21st Century Skills as the primary abilities for learning and innovation in the twenty-first century (Vacide Erdoğan, 2019). The learning and innovation skills are a set of skills that will set students ready for the world of work. Furthermore, learning and innovation skills are increasingly recognized as skills that separate students who are prepared for the increasingly complex life and work environment of the 21st century, and those who are not. Therefore, this research is a study of the measure factor of affecting digital learning, and learning and innovation skills among university student in Malaysia and also aims to determine the relationship between the dependent variables and independent variables (adaption of digital learning and effect on university students' learning and innovation skills). This research is conducted using a quantitative method. This research will focus on 300 university students who are experienced in using digital learning for teaching and learning activities. The data was collected from respondents through the questionnaire survey. Thus, the result from the Multiple Regression Analysis and Pearson's Correlation Coefficient showed that both variables in this study had significant and strong relationships together. In conclusion, through this research, it is hoped that it can provide guidelines to universities and students so they know the elements that are needed for improving effective ways to improve learning and innovation skills among students with the use of digital learning.

Keywords: Digital Learning, Learning and Innovation Skills, Students

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ABSTRAK

Pembelajaran digital ialah sebarang jenis pendidikan yang menggunakan teknologi dengan betul. Setiap pelajar boleh merancang, mengumpul, mengurus, menilai dan melaporkan maklumat dengan menggunakan alat pembelajaran digital yang fleksibel yang membenarkan pemperibadian. Ia adalah isu untuk mencapai keputusan yang sama menggunakan pelbagai laluan pembelajaran (Lilian Anthonysamy, et. al., 2021). Komunikasi, kerjasama, kreativiti dan pemikiran kritis 4C dikenal pasti oleh Perkongsian untuk Kemahiran Abad Ke-21 sebagai kebolehan utama untuk pembelajaran dan inovasi dalam abad kedua puluh satu (Vacide Erdoğan, 2019). Kemahiran pembelajaran dan inovasi adalah satu set kemahiran yang akan menyediakan pelajar bersedia untuk dunia pekerjaan. Tambahan pula, kemahiran pembelajaran dan inovasi semakin diiktiraf sebagai kemahiran yang memisahkan pelajar yang bersedia untuk kehidupan yang semakin kompleks dan persekitaran kerja abad ke-21, dan mereka yang tidak. Oleh itu, kajian ini adalah kajian factor ukuran yang mempengaruhi pembelajaran digital, dan kemahiran pembelajaran dan inovasi dalam kalangan pelajar universiti di Malaysia dan juga bertujuan untuk menentukan hubungan antara pembolehubah bersandar dan pembolehubah tidak bersandar. Kajian ini dijalankan menggunakan kaedah kuantitatif. Penyelidikan ini akan memberi tumpuan kepada 300 pelajar universiti yang berpengalaman dalam menggunakan pembelajaran digital untuk aktiviti pengajaran dan pembelajaran. Data dikumpul daripada responden melalui tinjauan soal selidik. Oleh itu, hasil daripada Analisis Regresi Berganda dan Pekali Korelasi Pearson menunjukkan kedua-dua pembolehubah dalam kajian ini mempunyai hubungan yang signifikan dan kuat bersama-sama. Kesimpulannya, melalui penyelidikan ini diharap ia dapat memberi garis panduan kepada universiti dan pelajar supaya mereka mengetahui elemen-elemen yang diperlukan untuk menambah baik cara-cara berkesan meningkatkan kemahiran pembelajaran dan inovasi dalam kalangan pelajar dengan penggunaan pembelajaran digital.

Kata kunci:Pembelajaran Digital, Kemahiran Belajar dan Inovasi, Pelajar

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LIST OF ABBREVIATIONS

DL	Digital Learning
WBLRs	Web-based Learning Resources
IR 4.0	Industrial Revolution 4.0
RBV	Resources-based view
EFA	Exploratory Factor Analysis
SPSS	Statistical Package for Social Sciences
UTAUT	Unified Theory of Acceptance and Use of Technology
KMO	Kaiser-Meyer-Olkin
IV	Independent Variable
DV	Dependent Variable
MRA	Multiple Regression Analysis
H	Hypothesis

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The purpose of this chapter is to measure factor of affecting digital learning, and learning and innovation skills among university students in Malaysia. This chapter will also cover the research background, problem statement, research question, research objectives, research scope, significance of study, limitation of study and operational definitions.

1.2 Background of research

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Digital learning is a teaching and learning practice that builds on creating innovative, instructional, and engaging learning that is accompanied by tools and technological advances through student learning applications (Nada Zaki Wafa & Meghan MCGlinn Manfra, 2021). The higher education sector in Malaysia is growing rapidly towards the Industrial Revolution (IR4.0), for every institution to achieve and maintain the sustainability of its institutions, the continued improvement of the teaching and learning delivery system is an important element in producing quality graduates who are ready to step into the work environment where it is in line with the Malaysian Higher Education 4.0 framework.

Besides, digital learning is a technology trend that allows for lifetime learning while also necessitating digital learning preparation. The importance and priorities of digital literacy emphasized by the Malaysia Education Development Plan 2015 until 2025 (Higher Education) cover factors in terms of critical thinking and problem- solving. That factor is a learning skill in the 21st century where it will help students tothrive in line with IR 4.0 (Malaysian Investment Development Authority, 2021). Theunprecedented pandemic that has now turned into the endemic of Coronavirus (COVID 19) has aided the growth of digital learning. Furthermore, the spread of the pandemic COVID-19 has changed the way of teaching and learning in Malaysia education from face-to-face to virtual where digital learning platforms become the main focus for educators to impart knowledge to students. According to Professor Dr Abdul Karim Alias in 2021, he said that online learning and education are no longer achoice, but it is a necessity. However, with the use of digital learning, learning and innovation skills among students need to be emphasized to produce more creative, productive and innovation students.

Finally, digital learning is one of the benefits obtained from technology education where this platform provides opportunities and space for students and educators to communicate and interact virtually. Not only this, all forms of learning materials such as notes and videos can be accessed through a digital learning platform.

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Figure 1.1: Malaysia Higher Education Framework 4.0

Source: MOHE, 2010

1.3 Problem Statement

There is some research that has been conducted on the use of digital learning for education. Siti Dianah Abdul Bujang; Ali Selamat; Ondrej Krejcar; Petra Maresova & Ngoc Thanh Nguyen, 2020, stated that digital learning is an instructional practice in any educational activity that uses technology to improve the learning experience of thestudents. It makes use of a wide range of technology-enhanced educational strategies that ultimately helps student. Moreover, the existence of IR 4.0 continues to change the world, and even Malaysia education also faces the challenge of preparing studentsto meet the demands of the IR 4.0 industry.

Besides, through the IR 4.0 revolution, the method of approach in teaching and learning known as education 4.0, has changed to a new era of the learning system. This education 4.0 has characteristics that shape students such as for self-learning, critical thinking, digital capabilities, and problem-solving. Education 4.0 is a new learning system that enables students to

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develop lifelong learning and innovation skills. It provides the notion of teaching and learning innovation and uses ICT in its processes. (Joseph O. Wogu, 2021) stated that through wired or wireless networks, digital learning is a tool used to obtain digital instructional resources for either online or offline learning activities. With the advancement of information technology and related technologies, digital learning can be leveraged by lecturers to create innovative features to provide students with systematic knowledge and teaching materials. In the IR 4.0 era, digital learning has increased its field to support the various industries in Malaysia. Thus, the issues and challenges in Malaysian education through digital learning are low adoption rate, lack of quality e-content, difficulty in engaging learners and language barrier (Professor Tan Sri Datuk Anuwar Ali, 2021). Next, according to Jessie S. Barrot, et.al, in 2021, the Covid 19 pandemic had a negative impact on the development of students' learning skills and innovation to gain a more detailed understanding of learning. In addition, students face the problem of a learning environment that is less conducive to fully focusing on learning through digital learning and they also face the problem of technology literacy and competence. Besides, according to Ranasinghe, Karunarathna and Pradeepamali, 2020, Cunningham and Anzola, 2019, there is limited interaction between students and educators, it is difficult to guide students, it is tough to educate each student's unique preferences and strengths, it is impossible to provide teaching skills, and there is the limited motivation for students while they are learning online.

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In conclusion, a case study was selected to identify teaching-learning exchanges from traditional or face-to-face to virtual between educators and students in measure factor of affecting digital learning, and learning and innovation skills among university students in Malaysia. This quantitative method is suitable for analyzing the adaptation of technology, pedagogy and content in developing students' learning and innovation skills. This is because quantitative research is effective for studying complex interactivity, relies on information feedback systems, and offers in-depth knowledge of student problem conceptualization.

1.4 Research Questions

The following research question is being addressed in this study:

i. What is the factor affecting digital learning, and learning and innovation skills among university students in Malaysia?
ii. What is the relationship between the factor affecting digital learning, and learning and innovation skills among university students in Malaysia?
iii. What is the most significant factor affecting digital learning, and learning and innovation skills among university students in Malaysia?

1.5 Research Objectives

The research objective was to determine the measure factor of affecting digital learning, and learning and innovation skills among university students in Malaysia. The following are theresearch objectives:

1. To identify the factor of affecting digital learning, and learning and innovation skills among university students in Malaysia.
2. To measure the relationship between the factor affecting digital learning, and learning and innovation skills among university students in Malaysia.
3. To explore the most significant factor affecting digital learning, and learning and innovation skills among university students in Malaysia.

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1.6 Scope of research

The research's scope is the distribution of questionnaires to analyze the measure factor of affecting digital learning, and learning and innovation skills among university students in Malaysia. The targeted respondents will be university students in Malaysia and who have experienced use of digital learning as the primary learning platform, especially during the past COVID-19 pandemic.

This research will utilize the Learning Theory. The study discovered that the Learning Theory hypothesis has become the dominant paradigm in strategic planning, allowing us to comprehend how digital learning create efficient results.

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1.7 Significant of study

The findings of research would be useful to educational institute in Malaysia. The research explores the relationship between digital learning and students' learning and innovation skills. Thus, the educational institute enhanced their student's level of learning and innovation skills based on this research. Furthermore, this research contributed a value to universities student. The research acted as a reference to other researchers who carry out the similar study and students can gain knowledge from the findings of research.

1.8 Limitation of study

There is various limitation to doing this research, such as a restricted number of respondents, time limit, and respondent honesty. This research only focuses on university students in Malaysia whether from public or private university. Thus, the result is more focused on students in Malaysia University than on respondent from foreign university. Furthermore, the researcher only has three months to collect data. Whereas, one of the limitations was the respondent's honesty when answering the questionnaires regarding their experience on the use of digital learning and performance on their learning and innovation skills.

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1.9 Operational definitions

A. Digital Learning

Digital learning is a major activity in education as the world is hit by the coronavirus epidemic (COVID 19). The use of applications from digital learning can improve skills, especially in technical mastery. (Kumari, Hemalatha, Ali & Naresh, 2020). Digital learning can be measured based on the success of its components. Besides, web-based training, distant learning, online learning, and network learning are all terminology used to describe digital learning (Lin, Chen & Liu, 2017). According to Lin et al. (2017), the four components of digital learning are digital tools, autonomous learning, digital tools, digital delivery, and digital teaching materials. In addition, one of the tools for enhancing the teaching and learning process in the higher education is web-based learning resources (WBLRs). These tools can give educators and students access to a variety of fresh and engaging experiences that aren't available in traditional classrooms.

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