

APPROVAL

I hereby confirm that I have examined this project paper entitled:

The Relationship between Digital Literacy and Adaptive Seeking Assistance for
Learning

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**THE RELATIONSHIP BETWEEN DIGITAL LITERACY AND ADAPTIVE
SEEKING ASSISTANCE FOR LEARNING**

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Report is submitted in fulfilment of the requirement for
Bachelor of Technology Management (Technology Innovation) with Honours
(BTMI)

Faculty of Technology Management and Technopreneurship
Universiti Teknikal Malaysia Melaka

JUNE 2018

DECLARATION OF ORIGINAL WORK

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“I hereby declare that the work of this exercise is mine except for the quotations and summaries that have been duly acknowledged”

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DEDICATION

Through this research paper, I dedicated my special thanks to my lovely mother, Puan Miswanti Binti Siar and my handsome father, Encik Aman Bin Ibnu Jais who constantly support and always give a lot of source of inspiration during my studies. I am honoured and grateful to have both as my beloved family and to all of my siblings and family, thank you for understanding and non-stop supporting me in any condition.

ACKNOWLEDGEMENT

Bismillahirrahmanirrahim,

Alhamdulillah, thanks to Allah, whom with His willing give me an opportunity to complete this research that entitled “The Relationship between Digital Literacy and Adaptive Seeking Assistance for Learning” to fulfil the compulsory requirements of Universiti Teknikal Malaysia Melaka (UTeM) and Faculty of Technology Management and Technopreneurship (FPTT).

I would like to express my deepest thanks to Prof. Madya Dr. Ahmad Rozelan bin Yunus who continuously give guidance and many advice and constantly support me since initial of Final Year Project 1 until this Final Year Project 2. Also, sincere appreciation for all of teammates under same supervisor who continuously support me.

Then, deepest thanks to my housemates and friends who always allocate time and space for always remind me to complete my project on time and lastly, million thanks for parents and my family who always give their endless love and prayer for me from beginning until the end.

Thank you.

ABSTRACT

This study is about the relationship between digital literacy and adaptive seeking assistance for learning. The objective of this study to identify the most digital literacy competencies poses by students who enrolled collaborative learning classes (CLeAR Lab) and to determine the relationship between digital literacy competencies and adaptive seeking assistance for learning. This study is vital as to carry out as awareness for educational institution about current state of their students in utilizing technology as medium for learning and their behaviour towards adaptive seeking assistance for learning in the class. Digital literacy may influence of managing one's studies. This study used Ng's model of digital literacy that consists technical, cognitive and social-emotional dimension. Quantitative research is chosen to conduct this research by distributing survey questionnaire to random 80 students among second-year of Bachelor Technology Management in Technology Innovation (BTMI) and third-year of Bachelor of Technopreneurship (BTEC) at Universiti Teknikal Malaysia Melaka (UTeM). The pilot test has been done and about 15 respondents were participated in pilot test in order to have reliability of the survey questionnaire before final data collection. The pilot test showed Cronbach Alpha about 0.914 for all variables, however if by factor, technical, cognitive, social-emotional and dependant variable adaptive seeking assistance for learning have Cronbach Alpha of, 0.901, 0.819, 0.837 and 0.797 respectively. The data is analysed by using Statistical Package foe Social Sciences (SPSS). As for Pearson's correlation analysis, all three independent variables are negatively correlated with adaptive seeking assistance and with multiple regression analysis only Social-emotional dimension that statistically significant towards adaptive seeking assistance.

Keywords: *Digital literacy, Adaptive Seeking Assistance, technical, cognitive, social-emotional*

ABSTRAK

Kajian ini adalah tentang hubungan antara digital literasi dan penyesuaian mencari bantuan dalam pembelajaran. Objektif kajian ini adalah untuk mengenalpasti kebolehan digital literasi yang paling banyak terdapat dalam diri pelajar yang mengikuti kelas pembelajaran kolaboratif (CLeAR Lab) dan mengenalpasti hubungan antara kebolehan digital literasi dan penyesuaian mencari bantuan dalam pembelajaran. Kajian ini adalah penting untuk kesedaran institutsi Pendidikan saat ini tentang keadaan kebolehan pelajar dalam menggunakan teknologi dalam pembelajaran dan sikap mereka terhadap penyesuaian mencari bantuan dalam pembelajaran di dalam kelas. Digital literasi boleh mengurus pembelajaran seseorang. Kajian ini menggunakan model digital literasi oleh Ng yang mengandungi segi teknikal, kognitif dan sosial-emosional. Kajian ini adalah berbentuk kuantitatif dengan cara menyebarkan borang kaji selidik kepada 80 orang pelajar iaitu Tahun 2 Ijazah Sarjana Muda Pengurusan Teknologi dalam Inovasi Teknologi (2BTMI) dan Tahun 3 Ijazah Sarjana Muda Teknousahawan secara rawak. Untuk ujian perintis, 15 responden telah menjawab borang kaji untuk menentukan kebolehpercayaan borang kaji selidik ini sebelum mengumpulkan data yang sebenar. Data ujian perintis bagi semua faktor adalah 0.914, manakala jika mengikut faktor teknikal, kognitif dan sosial-emosional adalah masing-masing 0.901, 0.819, 0.837 dan 0.797. Data dianalisis dengan menggunakan Pakej Statistik untuk Sains Sosial (SPSS). Untuk analisis hubungan Pearson, semua pembolehubah bebas adalah hubungan negative terhadap dan penyesuaian mencari bantuan dalam pembelajaran dengan analisi regresi berganda, hanya faktor social-emosional sahaja yang mempunyai hubungan yang statistik dengan dan penyesuaian mencari bantuan dalam pembelajaran.

Kata kunci: *Digital literasi, Penyesuaian, mencari bantuan, teknikal, kognitif, social-emosional*

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter discussed the background of the study which viewed the scenario and trend of the events according to the research topic. Then, the problem statement was stated to give a sight about the researcher wanted to approach in the study based on the research topic. The study mentioned the research objectives in order to assist the researcher to have the direction of findings meanwhile the scope of the study also had been mentioned to collect the evidence and strengthen the study.

1.2 Background of the Study

In the era of globalisation, now people living in the borderless zone which they can interact with each other despite one's living in the north, the other one's living in the south. Since the emergence of internet usage and smartphones in Malaysia, citizens were approached by saying, the world is borderless. This scenario was proven by statistics from (Department of Statistics Malaysia 2015) which, as per 2015, the total population in Malaysia was 31.5 million where 21 million (68%) had become internet users. They spent 5.1 hours on the internet average per day and 2.8 hours on social network average per day. This showed that Malaysian citizens were exposed to Internet revolution.

The borderless zone also applied in education where the students can learn other university courses despite the having a long distance with the help of emergence technologies such as devices and Internet connection. Malaysia and its national also private primary, secondary and tertiary education institutions had registered to the open sources education such as ULearn, Massive Open Online Courses (MOOCs), E-learning and others in order to build 21st century skills of students. These open sources did not neglect the traditional method of learning which was taught by teacher or lecturer in class. At the same time, even if the class had created a big change by applying the digital technologies as the tool to assist in teaching and learning programme (Eleventh Malaysia Plan 2016-2020 2016). The open sources act as the supplement for the students. It was clear (Dutt 2016) said among MOOCs challenges were chaotic, digital literacy (highly required to perform), dedication, organic, self-regulate, must strict to a regular time (follow a learning goal). The MOOCs needed a high digital literacy (technical, cognitive and social-emotional competencies) to perform its online learning. It was meant the digital literacy had become the requirement to enrol this online learning since it was an information technology platform, that the physical boundaries were absent. An absence of physical boundaries made everyone can be used this without a limited time and digital technologies (eg; smartphone, computer) as a medium to go for online learning.

Then, (Selamat 2017) said that Malaysia move towards building the 21st Century skills in students, which emphasised on high order thinking and multiple intelligence which covered the 4 stages; Learning and Innovation Skills (4Cs critical thinking, Communication, Collaboration and Creativity); Content Knowledge and 21st Century Themes; Information, Media and Technology skills; Life and Career Skills. These skills were embedded in digital literacy, for example (Eshet 2004) said the components of digital literacy was photo-visual (read instruction from display), reproduction skills (do the new thing based on the existing data), branching skills (knowledge from non-linear), information skills (evaluate the quality and validity) and socio-emotional skills (survival skills in cyberspace communication). Not only the industrial revolution that move towards the IR 4.0, education institution also had the framework or plan for delivering the higher education moved towards MyHE 4.0 (My Higher Education 4.0). This My HE 4.0 had influenced the students to move

towards of IR 4.0 which embedded themselves with the requirement of competencies, skills and, knowledge of IR 4.0.

To support the trend in Malaysia, this study was determined the relationship between digital literacy and adaptive seeking assistance for learning among the students who enrolled the collaborative learning classes (CLeAR Lab). These students might have had a different capability to utilize technology equipment for learning. Also, the classes used collaborative learning method in CLeAR lab for 14 weeks in each semester.

Digital literacy was the competency to adopt the broad of cognitive and emotional skills in utilizing technologies (Eshet and Chajut 2009). The (Department of e-Learning 2015) claimed that digital literacy was literacy via technology. According to (Bellanca 2010), acquiring the digital literacy meant to achieve one of the standards of becoming the 21st century people but by knowing the use of digital devices did not mean they were aware of anything related to the global awareness or learning and innovation competencies. Hence, (The Guardian 2013) supported that digital literacy was the 21st century skills that should be embedded in the students.

However, current world is moving towards 4.0 education which embedded the digital technologies in a classroom or even has online education platforms that allowed the students to have their own personal learning for example, Massive Open Online Sources (MOOCs), U-Learn and others. By enrolling this online education platforms, they needed to have the digital literacy to conduct the learning. Yet, nowadays, the task given by the lecturers or personal learning urges them to have independent learning either through online or offline or may have peers that can help them to assist their learning to complete the task.

Then, seeking assistance or help-seeking was one of the seven pillars of a self-regulated learning strategy, for instance, memory strategy, goal setting, self-evaluation, environmental structuring, learning responsibility and organizing (Magno 2010). As said by (Newman 2008), adaptive help-seeking was one of the self-regulatory skills apart from that seven pillars by Magno's model. The researcher chose the adaptive seeking assistance for learning as the dependant variable because

there was much prior research regarding that pillar, so it was helpful to find the evidence. Also, previously in research conducted by (Perera et.al 2017) said that seeking assistance items had the correlation with all the three components of digital literacy competencies.

1.3 Problem Statement

The issue regarding the unemployment in Malaysia was not a just mere issue that can be ignored. Based on (Department of Statistic Malaysia (DOSM) 2017), showed the rate of unemployment in Malaysia in 2017 is 3.4% compared to 3.5% in 2016. Even if the rate decreased by this year, yet it still become a news since data from (Bank Negara Malaysia (BNM) 2016), reported that about 200,00 graduates annually, one in four after 6-month graduates were unemployed where youth unemployment is about 10.7% by last year. What lead this did scenario happened? One of reasons that the graduates were lack of digital literacy competencies and other soft skills. The employer had been looked at the digital literacy competencies poses to hire the employees and rated the digital literacy skills was 30% of the hiring (The Borneo Post 2016). The study discussed the digital literacy competencies that pose by students who enrolled in the collaborative learning lab, in order to identify their current state of digital literacy competencies to survive in an educational world also for the next step in working life.

Besides, the students had many learning strategies that they implement, one of that was maybe seeking assistance for learning, which asked for teachers, peers to supplement their learning. However, nowadays, students rarely to ask questions in class. It was either reluctant to ask or think they can learn by themselves. There were some building blocks of seeking assistance such as may be too many people asked which the other students miss the opportunity, felt shy to ask in class (Karabenick and Dembo 2011), thought that nobody will respond to the question, think the question might be a funny thing, class period was too short, distance learning or some others possible reasons. These thoughts lead to the development of online application and collaborative learning platform. To utilize the online platform, digital

literacy competencies might be needed. So, the study wanted to find out if there was a relationship between digital literacy and adaptive seeking assistance for learning.

1.4 Research Questions

Below were the research questions for this study:

- i. Which is the most digital literacy competencies poses by students who enrolled collaborative learning classes (CLeAR Lab)?
- ii. What is the relationship between the digital literacy competencies and adaptive seeking assistance for learning?

1.5 Research Objectives

Below were the research objectives that should be achieve by the researcher:

- i. To identify the most digital literacy competencies poses by students who enrolled collaborative learning classes (CLeAR Lab).
- ii. To determine the relationship between digital literacy competencies and adaptive seeking assistance for learning.

1.6 Scope, Limitation and Key Assumption of the Study

The scope of this research was having the students who enrolled collaborative learning classes (CLeAR Lab) in one of the higher institutions in Melaka as the respondent that will be analysed their level of digital literacy competencies and its correlation to the adaptive seeking assistance for learning. The researcher conducted this study by using the quantitative method in order to obtain the primary data. Yet, the questionnaire would be given to the respondents directly after simple random sampling was implemented.

The study had some limitations that might affect the result obtained. First, the element of honesty of the respondents during answering the questionnaires might be incurred the results. The respondents did not deeply knowledgeable about the level of digital literacy competencies that they really pose. Next, the respondents might unconditionally have missed out to answer any question, it might affect the quality of data obtained. Then, if they did not have the prior understanding of the topic discussed, they might conditionally to not answer the question. Also, the study only limited for students who enrolled the collaborative learning classes in CLeAR Lab to be respondents. It was because these students experienced the online education platform in learning in the university. They also might have had differences ability to conduct technology and they might be had better understanding and competence about the topic discussed rather than non-collaborative learning classes students.

The key assumption of this study, the researcher received the honest answer from respondent through the questionnaire given. The respondents answered the questionnaire without miss any questions. The respondents had much understanding of related topics discussed in the study.

1.7 Significance of the Study

The aim of this research was to identify the most digital literacy competencies posed by students who enrolled collaborative learning classes (CLeAR Lab) and its relationship with adaptive seeking assistance for learning. The importance of this study to be carried out was to give awareness to the educational institutions also the citizens that digital literacy competencies was important to be embedded in oneself and the effective strategy of learning such as adaptive seeking assistance for learning was also helped in improvement of oneself studies. Acquiring the digital literacy competencies was one of the good components that can be one of the strong preparation for working later since conducting various technology had become demand competencies nowadays. These digital competencies embedded in oneself also an adaptive seeking assistance strategy for learning might improve in managing one's studies.

1.8 Summary

In conclusion, in this era, people were occupied by the facilities of devices and availability of the Internet, so by identifying the digital literacy competencies posed in oneself and know how to manage their studies, they are able to be a better 21st century students.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The literature review was where the section to input related prior studies of the variables and the topic of researcher's study. Basically, the literature review was the secondary data that strengthen the researcher's study.

This section began with review the prior studies the independent variables such as, the definition of digital literacy competencies, the theory of Digital Literacy Model along with its components (technical, cognitive and social-emotional) and the study about the dependant variable which was adaptive seeking assistance for learning. Based on the secondary data findings and hypotheses, the researcher developed the theoretical framework in order to view the subject matter.

2.2 Digital Literacy Competencies

Below was the definition of the digital literacy competencies based on various sources.

2.2.1 Digital

According to the (*Meriam-Webster Dictionary* 2017) and (*Cambridge Dictionary* 2017), there was a lot of meaning for word ‘digital’. In a practical way, digital was about saving series data like binary whereas is 1 and 0 which expressed the presence of the signal. However, in this context, digital can be determined as electronic-based function and specifically in relation towards hi-tech technology. Also, (Goodfellow and Lea 2013), digital was the activities related to new information and communications media.

2.2.2 Literacy

Literacy was highlighted by (Hillrich 1976) that it was an ability to perform in communication competencies and act according to their age which had self-reliant ability to survive in society and makes changes. As stated by (Dupuis 1997), literacy was the extension of the foundation of competence in reading and writing, where having an understanding capability and able to do the job successfully.

2.2.3 Competency

Competency was defined as performance at the acceptable level (Kaslow 2004). Also, competency can be said as the quality or state of being mentally competent (*Merriam-Webster Dictionary* 2018). The words that had a similar meaning of competencies, for instance, capability, ability, capacity, knowledge, aptitude, expertise and proficiency (*Oxford Dictionary* 2017).

2.3 Digital Technologies

Digital technology was base two processes (*Dictionary of American History* 2003). It recorded the information that had been digitized in the binary code of combinations of digits 0 and 1(bits). This was displayed in words and images. It compressed a huge amount of information with small storage. This changed the way people interact, learn and doing a job. The examples of digital technology were electronic devices (eg, computer and smartphone), analytic programs, software applications, interface devices, networking sites and some more (Business Insider 2014).

2.4 Components of Digital Literacy

Digital literacy which came from the word of “digital” and “literacy”. As said by (Gilster 1997), the digital literacy was not simply technical or operational competencies that engage with the technology, yet it was the capacity for the individual to understand and utilize information in various formats from many sources that displayed through the computer and online medium. In a further explanation by (Eshet 2004), digital literacy was beyond the capability a person utilizing the digital technology with embedded the software to perform its function, however it covered a wide range of complex cognitive, motor (thinking), sociological and emotional (mentally) abilities, in order the consumers able to well-survived in

the surrounding of digital. Eshet (2004) determined that photo-visual literacy, reproduction literacy, information literacy, branching literacy and socio-emotional literacy were the literacies that were embedded in digital literacy. Yet, (Gilster 1997) determined four competencies that engage in digital literacy such as, knowledge assembly, evaluating information content, searching the internet and navigating hypertext. Another conceptual framework (Calvani et.al 2008), mentioned technological dimension, cognitive dimension and ethical dimension. They said that digital literacy had been called into various terms such as IT literacy, Information Literacy, Media Literacy and Media Education. However, (Ng 2012) concluded them as only three areas, there was technical, cognitive and socio-emotional literacy.

According to (Ng 2012), a study about the determining the level of digital literacy and how easily they can adapt the unfamiliar technologies which focused among the 'digital natives' which was the group of undergraduate students learning the course of Introduction to eLearning at a university in Australia. The research by Ng was to highlight the awareness of educational technologies and exposed the chance to utilize the technologies for good things. The research by Ng also exposed the new dimensions of digital literacy such as cognitive, technical and social-emotional. Then, its concept was based on the conceptual framework of (Eshet 2004).

Here, cognitive dimension consists information literacy, critical literacy and multi-literacies then, technical dimension had operational literacy and critical literacy yet, social-emotional contains social-emotional literacy dimension and critical literacy. These three dimensions were connected to each other and produce the digital literacy with some added literacy items that relate to each other between the dimension. (Ng 2012) stated the technical dimension in the digital literacy as having the technical and operational competencies to utilize the ICT for studying and daily programs. Besides, the cognitive had been mentioned by (Ng 2012) as the competence to think critically during the information seeking, evaluating and able to manage the digital information. Ng (2012) mentioned that social-emotional is about relating two dimension such as the social-emotional and cognitive dimension. Basically, these concluded to have competencies that can be managed to operate the computer-based for daily uses, able to seek, determine and assess information