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THE IMPACT OF LEARNING MEDIUM VIA INFORMATION AND
COMMUNICATION TECHNOLOGY (ICT) ON STUDENT'S ACHIEVEMENT
IN FACULTY OF TECHNOLOGY MANAGEMENT AND
TECHNOPRENEURSHIP,
UNIVERSITI TEKNIKAL MALAYSIA MELAKA (UTeM)

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Report submitted in fulfilment of the requirement for Bachelor Degree of
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JUNE 2015

DECLARATION

"I admit that this report is the result of my own work except summaries and citations
that everything I have explained the source"

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DEDICATION

This project is dedicated to my father, who taught me that the best kind of knowledge to have is that which is learned for its own sake. It is also dedicated to my mother who taught me that even the largest task can be accomplished if it is done one step at time.

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ABSTRACT

This study examines the impact of learning medium via information and communication technology (ICT) on students achievement. The problem to be investigated is about the effectiveness of learning medium via ICT on student's achievement. This study aimed to investigate the effectiveness and usefulness of learning medium via ICT on students achievement and to investigate the effectiveness and usefulness of ICT in education for students achievement. A survey was carried out through a set of questionnaires were distribute to 4th year student at Faculty Management and Technopreneurship(FPTT), Universiti Teknikal Malaysia Melaka (UTeM) and its examine the independent variables which are (1) easily submit and accessible learning resources through electronic learning, (2) communicate and through electronic learning, (3) saving cost and time through electronic learning, (4) easy to communicate and interact through social networking, (5) collaborative learning through social networking and (6) easy to access and share information through social networking and dependent variables which is student achievement. The data gathered were analyzed using descriptive analysis, correlation analysis, simple linear regressions and multiple linear regressions. The finding sees that there are positive strong relationships for all variables in correlation analysis. While, there have significant relationship between all independent variables with dependent variables in simple linear regression. In multiple regression there has three independent variables that do not significant relationship on student achievement. The recommendations are (1) make more discussion forums among others via learning medium, (2) use as well as possible by submit assignment and download material using learning medium, (3) diversify the way to share materials such by video, (4) increase exchange information with peers and lecturer via picture and audio, (5) make special group forum in learning medium and (6) diversify the way to share by capture any lecture note and upload in learning medium.

ABSTRAK

Kajian ini mengkaji kesan medium pembelajaran melalui teknologi maklumat dan komunikasi (ICT) dan pencapaian pelajar. Masalah yang hendak dikaji adalah tentang keberkesanan pembelajaran melalui medium ICT ke atas pencapaian pelajar. Kajian ini bertujuan untuk melihat keberkesanan dan kegunaan medium pembelajaran melalui ICT ke atas pencapaian pelajar dan untuk menyiasat keberkesanan dan kegunaan ICT dalam pendidikan bagi Pelajar. Satu kajian telah dijalankan melalui satu set soal selidik yang diagihkan kepada pelajar tahun empat untuk mengkaji pembolehubah bebas iaitu (1) kemudahan mengemukakan dan akses sumber pembelajaran melalui pembelajaran elektronik, (2) berkomunikasi dan berintaksi melalui pembelajaran elektronik, (3) menjimatkan kos dan masa melalui pembelajaran elektronik, (4) mudah untuk berkomunikasi dan berinteraksi melalui rangkaian sosial, (5) pembelajaran kolaboratif melalui rangkaian sosial dan (6) mudah untuk mengakses dan berkongsi maklumat melalui rangkaian sosial dan pembolehubah bersandar iaitu pencapaian pelajar. Data yang dikumpul dianalisa menggunakan analisis deskriptif,analisis hubungan,regressi linear mudah dan regressi. Dapatan kajian mendapati hubungan positif yang kuat daripada semua pembolehubah. Manakala, terdapat hubungan yang signifikan di antara pembolehubah bebas dan pembolehubah bersandar dalam regresi linear mudah. Dalam regresi ,ada mempunyai tiga pembolehubah bebas yang mempunyai hubungan tidak ketara ke atas pencapaian pelajar. Cadangannya adalah (1) perbincangan forum antara satu sama lain melalui medium pembelajaran,(2)menggunakan medium pembelajaran melalui mengemukan tugasan dan muat turun bahan-bahan,(3) pelbagaikan cara berkongsi bahan seperti melalui video, (4) pertukaran maklumat dengan rakan dan pensyarah melalui gambar dan audio dengan medium pembelajaran, (5) forum kumpulan yang istimewa dalam medium pembelajaran dan (6) pelbagaikan cara berkongsi nota dengan menangkap gambar dan memuat turundi dalm medium pembelajaran.

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CHAPTER 1

INTRODUCTION

In this chapter, it describes the background of study about these topics. It give explains about the use of information and communication technology (ICT) in Malaysia focus on education system and also the use of learning medium via ICT in UTeM for educational use on student's achievement.

1.1   BACKGROUND OF STUDY

Information and communication technology (ICT) is one of the components which are intercorrelated and functioning as collect the data, processing data and spread the information. World Bank (2002) comments ICT are generally accepted as modern tool that enables educators to modify teaching methods they use in order to increase students interest. According to Moscow (2006), ICT have become the suitable tool that is it can help people with any different learning demands exercise to their right in education, social life and leisure, employment, democratic channels and access to information. It can be said that ICT is used everywhere including schools. Ministry of Education (MOE) in Malaysia starting of many projects that use ICT in the schools. In this projects, include Computer in Education and Smart schools and ICT is used for program English for teaching Mathematics and Science. According report on Malaysia's ICT use in education by UNESCO (2003), MOE budgeted 30 percent (approximately RM 4.2 billion) to connect 230 rural schools to the internet. Cavanagh, R.F. et al. (2004) said that their study found that ICT affect student

learning, class, group and teachers. ICT is the greatly facilitate acquisition and absorption of knowledge that provide students more opportunities in adapting learning.

The learning medium via ICT is one of the important tools for students in education. Learning medium such as electronic learning and social networking. Oye *et. al.*(2010) said that learning medium via ICT is a unifying term used to describe the fields of online learning , web based training and technology instructions. It has competitive advantage and many of universities have implemented it and this has impacts on student's performance. The technology now is a tool that used to remove geographical barriers and facilitates everybody to learn anytime and anywhere without presence of the lecturer. Holley (2002) find out that students can achieve better grades if use online or electronic learning than students that studied traditional approach.

In Universiti Teknikal Malaysia Melaka (UTeM), ICT as tool for learning medium that is approach to deliver instructions in academic process in all campus at UTeM. UTeM applied ICT for the purpose of learning process. UTeM through the process of learning using ICT to develop multidisciplinary knowledge, give student better construct new knowledge and develop collaboration skills.

ICT provide facilities for student to interact with others for sharing information and data via learning medium such as u-learn, email, edmodo and blog. In academic, ICT is very useful for every student especially universities student. With ICT, dissemination and sharing of information would spread faster with only using a fingertip. Watsons (2005) said that ICT is the catalyst for the change, which is change in teaching as well as changes in the approach to learning and access to information.

1.1.1   UNIVERSITI TEKNIKAL MALAYSIA MELAKA (UTeM)

Universiti Teknikal Malaysia Melaka established on 1 December 2000. It formally known as Kolej Universiti Teknikal Kebangsaan Malaysia (KUTKM) before being rebranded to university status on 2 February ,2007. It has three

campuses which are main campus, industrial campus and city campus. Universiti Teknikal Malaysia Melaka (UTeM) has seven faculties which are Fakulti Kejuruteraan Elektrik (FKE), Fakulti Kejuruteraan Elektronik dan Kejuruteraan Komputer (FKEKK), Fakulti Teknologi Maklumat dan Komunikasi (FTMK), Fakulti Kejuruteraan Pembuatan (FKP), Fakulti Teknologi dan Teknousahawanan (FPTT), Fakulti Kejuruteraan Mekanikal (FKM) and Fakulti Teknologi Kejuruteraan (FTK).

The City Campus is situated in the heart of Melaka Town. The City Campus underwent some renovations beginning on 1 Mac 2007 and the work completed on 10 July 2007. It allocate the Fakulti Pengurusan Teknologi dan Teknousahawanan (FPTT), Publisher University, Centre for Teaching and Learning, Continuing Education Center and Mini Library. The FPTT offered three bachelor programmes which are Bachelor of Technology Management in Innovation (BTMI), Bachelor of Technology Management in Marketing (BTMM) and Bachelor of Technopreneurship (BTEC).

1.2   PROBLEM STATEMENT

In Fakulti Teknologi Pengurusan dan Teknousahawana (FPTT), information and communication technology (ICT) is one of the tools that used in learning and teaching. ICT has been used by the lecturers and students at FPTT. Lecturer would use the ICT through their teaching and learning. The mediums of teaching and learning that usually used such as electronic learning (U-learn and email) and Social networks (facebook, edmodo and blog).

In addition, most of the students also use ICT to share information with one another with certain methods such as facebook, blog, WhatsApp, and e-mail. Students familiar usually use this ICT to receive and share information on learning as share notes and others. However, whether the use of this learning medium can impact the student's achievement on students FPTT or otherwise.

There are many medium of learning in education such as moodle, web ct vista, learning zone, social networking, electronic learning and others. Lecturer of UTeM only implemented several learning medium electronic learning (u-learning and

Email), and social networks (edmodo, blog and facebook). The table below shows learning mediums that implemented and not implemented by the lecturer in UTeM.

Table 1.1: List of learning medium that implemented and not implemented at Universiti Teknikal Malaysia Melaka (UTeM).

No.	Medium	Implemented	Not implemented
i.	Electronic Learning	X	
ii.	Moodle		X
iii.	Social Networking	X	
iv.	Web CT Vista		X
v.	Learning Zone		X

The table 1.1 above shows that the list of learning medium that implemented in UTeM. Only two learning medium implemented because these learning medium usually and familiar used by lecturer and students. These learning medium were easy to use by them in learning process.

1.3   RESEARCH QUESTIONS

Research questions that were asked in this study are:

i.   What is the effectiveness and usefulness of learning medium via ICT for the student's achievement?

ii.   What is the effectiveness and usefulness of ICT in education for student's achievement?

1.4   RESEARCH QUESTIONS

Research objectives of this study are to fulfil the research question. The research objectives are:

i.   To investigate the effectiveness and usefulness of learning medium via ICT for the student's achievement.

ii.   To investigate the effectiveness and usefulness of ICT in education for student's achievement.

1.5   SCOPE, LIMITATION AND SIGNIFICANCE OF STUDY

1.5.1   SCOPE

The study scope is focused of some medium to be investigate are effectiveness and usefullness of ICT and the learning medium electronic learning (u-learn, and email) and social networking (facebook,blog and edmodo).

1.5.2   LIMITATION

This study focused at Faculty of Technology Management and Technopreneurship, Universiti Teknikal Malaysia Melaka (UTeM). The number population of respondents were 219 respondents. The samples were 150 respondents only. The duration of this study was 12 months to finished overall of the research by two parts which is final year project one and final year project two that shown in Appendix A and Appendix B.

1.5.3 SIGNIFICANCE OF STUDY

This study contributes and helps students in applying the medium of learning in their learning. From this study, it can tell whether a learning medium available and used by the students in the present affect or otherwise. The study were said to contribute to the students as it is a study to determine the effectiveness of the existing learning medium towards achievement of the students. With this study, it can help students to increase the diversity of ways of learning medium in their daily learning. From this study, students were also being able to know the usefulness and effectiveness of the medium of learning in their learning.

1.6   SUMMARY

The chapter of the research would discuss about the respondents that can be sample of the research. Other than that, in this chapter also find out the location that can hold the research. In this chapter also explained about the importance of this study, duration of the study, the problem of the study, objectives and also scope of study.

CHAPTER 2

LITERATURE REVIEW

2.1   INTRODUCTION

In this chapter, researcher was identified previous studies that are related with studies topic. In fact, based on the previous research, this study can determine the gap that can be donated for the research. The previous study focus on the technology, role of information and communication technology, role of learning medium, benefits of electronic learning and benefits of social networking. Other than that, this chapter also explained the previous study about the student achievement.

2.2   TECHNOLOGY

According Paul Hawken (2007) said that technology is the development use of tools, machines, materials, and processes to solve human problem. Other than that, technology is a tool which is connected with the design or gadgets according to scientific principles and the latest process. Technology increasingly sophisticated from day to day with a specific function design. This technology would be change all the time due to the current level of knowledge that combines resources to produce products that are more sophisticated than the existing. Manuel Castells as quoted Capra (2004) said that 'provide an understanding of technology were tools,

procedures and rules that is the application of scientific knowledge to a particular job in a way that allows repetition'.

Bennett *et. al* (2006) said that technologies does not function as solutions in isolation, however it must be thought of as key ingredients making possible for school to address core challenges of educational. Other than that, Bajcsy (2005) find out that technology were familiar in education, suggest technology can work to help organization and provide structure for material to students, facilitate and assist in the authentication and prioritization of internet material.

2.3 ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

The ICT is affected teaching, research and education (Yusuf, 2005). Most teachers do not make use of the potential of ICT to contribute to the quality of learning nature even some of them evaluate this potential quite importantly (Smeets, 2005). Most of people comfortable to entrance knowledge via ICT to keep pace with the newest improvement (Law, 2007).

ICTs also creation of digital resources like digital libraries where the students and teachers can access research material and course material from any place at any time they want (Cholin, 2005). Sharma (2003) also said that the use of ICT can improve the performance and expand relevant skills in the disadvantaged communities.

2.4 ROLE OF LEARNING MEDIUM

Learning medium in education using ICT is under the e-learning tool. According to Som Naidy (2006), e-learning referred to the use of network information and communication technology in learning and teaching. It is meant, it

include distributed learning, web based learning, virtual learning, and also online learning. It referred to the educational process, utilize information and communication technology to mediate in learning and teaching. These have various type and modalities in e-learning activity such as individualized self-paced e-learning online, individualized self-paced e-learning offline, group based e-learning asynchronously and group based e-learning synchronously. R. Schult *et. al* (2006) find out that teachers are encouraged to use these tools (e-learning) and to develop ways to integrate ICT explicitly.

2.4.1   BENEFITS OF ELECTRONIC LEARNING

The electronic learning is the system of learning supported and facilitated through the use of information and communication technology (ICT). According to Rodgers (2008), other higher educational institutions use highly interactive of electronic learning which directly improves student's performance in general.

Electronic learning is the online learning system. Salleh *et.al* (2010) said that electronic learning is the unifying term that used to describe the fields of online, technology delivered instructions and also web based training. Richard (2004) found that the differences between the academic achievements of postgraduates business students is make better and easy use through the electronic learning in education. By the books of University of Surrey (2008), electronic learning gives opportunities for students to interact each others. For some opportunities are online discussion can allow additional time for reflection and careful considerations in activities and also flexibility that is mean it can support learning and teaching at a place and time that suits person. Sarah (2008) said that learning using technology is different with the manual learning such as in contribute note by hand. Liz (2008) found out that electronic learning allows the tutor to solve problems and know what is happening with students next make the discussion and ask questions.

The electronic learning has communication richness or bandwidth, determines that student's ability to communicate verbally and nonverbally. Electronic learning programs differ in the extent to which they make available different communication channels for example, audio and video and allow students

to communicate synchronously in real time (Bradford S.B, *et. al* 2013). Lawrence Bacow *et. al* (2013) reported that relatively few institutions believe electronic learning reduces their costs, and, in fact, most believe that online courses are at least as expensive to provide as traditional courses.

According to Rodgers (2008), other higher educational institutions use highly interactive of electronic learning which directly improves student's performance in general. The electronic learning can substantial positive effect such as student engagement, personalized learning and also teacher positive attitudes.

Email is one of the important tools via network for delivering feedback to learners. It is effectiveness as a communication and instructional aide between instructors and learners. Tao *et. al* (2005) said that the email fit students in authentic situations such as real learning. It also finds the email that is motivates learners, and also creates new opportunities. Vonderwell (2003) said that the email allows for improved communication and gives students opportunity to ask more questions of their instructor.

i.   Easily submit and accessible learning resources

Electronic learning is the techniques and delivery potential gives students greater access to students. According Hemsley (2002) stated in Bradford Bell *et. al* (2013) found that the effectiveness of electronic learning as transferable or accessible learning resources means that delivering instructions or any data and information . They explained again electronic learning produce the outcomes of equivalent to other delivery media or information when instructional conditions are held constant. Fry (2001) claimed that electronic learning give more flexible, easily accessible learning environment which be offered by distance learning. Electronic learning also as transferrable applications and easy access learning resources and experience (Hemsley, 2002). Jorge G. Ruiz *et. al* (2006) said that electronic learning as learning delivery that increased accessibility to information. It is mean that users' ability to find what is needed, when it is needed.