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UNIVERSITI PUTRA MALAYSIA

SELF-DIRECTED LEARNING BELIEFS, READINESS AND UTILIZATION OF E-LEARNING TECHNOLOGIES AMONG ENGINEERING EDUCATORS IN A MALAYSIAN PRIVATE UNIVERSITY

ASMAH ZAKARIA

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By

ASMAH ZAKARIA

Thesis submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfilment of the Requirements for the Degree of Doctor of Philosophy

September 2008

This thesis is dedicated to the memories of the people I loved and lost while pursuing my doctoral qualification

Allahyarham Ariff Ismail Mahmood (husband -August 2007)

Allahyarham Abdul Nasir Zakaria (brother – May 2004)

Allahyarhamah Bashah Darus (mother in law- October 2003)

"Semoga Allah mencucuri rahmat ke atas roh-roh mereka dan di masukkan ke dalam golongan orang-orang yang beriman"

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

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September 2008

Chairman: Professor Abu Daud Silong, Phd

Faculty: Faculty of Educational Studies

The utilization of E-learning among engineering educators in Malaysia has not been fully investigated. Thus, the two main objectives of the study were to determine utilization of E-learning technologies among engineering educators and to establish relationships between the independent variables and utilization of E-learning technologies. The independent variables were selected demography variables (age, teaching experience, academic qualifications, specialization areas, computer and Internet experience), self-directed learning beliefs (educators' beliefs, beliefs about students' learning and facilitation beliefs) and readiness in using E-learning technologies (educators' readiness, students' readiness and organizational readiness).

This survey research used a Likert-like instrument comprised of questions designed to obtain response on self-directed learning beliefs, readiness, utilization of E-learning technologies and selected demography variables. The population for the study was 580 engineering educators teaching at Universiti Kuala Lumpur. A sample of 165 respondents was selected using stratified sampling among engineering educators teaching at all institutes of Universiti Kuala Lumpur, with the exception of UniKL-Royal College of Medicine. A total of 119 completed questionnaires were returned and used for analysis giving a 72.2 percent response rate.

Findings from the study revealed that engineering educators were average users of E-learning technologies. Using Pearson correlation analysis, significant relationships were found between teaching experience, computer and internet experience and utilization of E-learning technologies. There was no significant relationship between age and utilization of E-learning technologies. ANOVA analysis indicated significant mean differences between different academic qualifications and utilization of E-learning technologies, while specialization areas were not statistically significant.

Significant relationships were also established for educators' beliefs, beliefs about students' learning, facilitation beliefs, educators' readiness, students' readiness and organizational readiness. Multiple regression analysis indicated that these variables contributed 40.7 percent of the variance in

utilization of E-learning technologies. The most significant predictors in the regression model were educators' own readiness and educators' beliefs.

While the analyses indicated that there were significant relationships between self-directed learning beliefs, readiness and utilization of E-learning technologies, the results must be interpreted with caution. The average utilization implied that there were other possible reasons for engineering educators' decisions in utilizing or not utilizing E-learning technologies which the management of the university should investigate. Suggestions for future research include exploring other factors which may influence utilization of E-learning technologies among engineering educators, extending the study to include the students' perspectives and the implication of the introduction of outcome-based education in engineering education and its implication on utilization of E-learning technologies.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

KEPERCAYAAN PEMBELAJARAN KENDIRI , KESEDIAAN DAN PENGGUNAAN TEKNOLOGI E-PEMBELAJARAN DIKALANGAN PENDIDIK KEJURUTERAAN DI SEBUAH UNIVERSITI SWASTA DI MALAYSIA

Oleh

ASMAH ZAKARIA

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Penyelidikan mengenai penggunaan teknologi E-pembelajaran dikalangan pendidik kejuruteraan di Malaysia masih belum dilaksanakan secara meluas. Oleh itu, dua objektif utama kajian ini ialah untuk mengetahui tahap penggunaan teknologi E-pembelajaran dikalangan pendidik kejuruteraan dan untuk mengenal pasti hubungan antara pemboleh ubah tidak bersandar dan penggunaan teknologi E-pembelajaran. Pemboleh ubah tidak bersandar ialah ciri-ciri demografi yang dipilih (umur, pengalaman mengajar, kelayakan akademik, bidang pengkhususan, pengalaman dalam penggunaan komputer dan Internet), kepercayaan pembelajaran kendiri (kepercayaan kendiri pendidik, kepercayaan terhadap pembelajaran kendiri pelajar dan kepercayaan fasilitasi) dan kesediaan dalam penggunaan

teknologi E-pembelajaran (kesediaan pendidik, kesediaan pelajar dan kesediaan organisasi).

Kajian tinjaun ini menggunakan instrumen Likert yang mengandungi soalan-soalan yang diolah untuk mendapatkan maklumbalas mengenai kepercayaan pembelajaran kendiri, kesediaan menggunakan teknologi E-pembelajaran, penggunaan teknologi E-pembelajaran dan ciri-ciri demografi yang dipilih. Populasi kajian ialah 580 orang pendidik kejuruteraan di Universiti Kuala Lumpur. Sampel kajian ialah 165 orang, dipilih secara persampelan berlapis dikalangan pendidik kejuruteraan di semua institut di Universiti Kuala Lumpur, kecuali di Kolej Perubatan Diraja, Perak. Kadar soal selidik yang dikembalikan dan digunakan untuk analisis ialah 119, iaitu sebanyak 72.2 peratus.

Dapatan kajian menunjukkan penggunaan teknologi E-pembelajaran dikalangan pendidik kejuruteraan adalah sederhana. Analisa Pearson, menunjukkan pengalaman mengajar, pengalaman menggunakan komputer dan Internet berkait secara signifikan dengan penggunaan teknologi E-pembelajaran. Umur didapati tidak berkait secara signifikan dengan penggunaan teknologi E-pembelajaran. Analisa ANOVA menunjukkan perbezaan min yang signifikan diantara kelayakan akademik dan penggunaan teknologi E-pembelajaran, sementara tiada perbezaan min yang signifikan diantara bidang pengkhususan yang berlainan.

Kepercayaan pembelajaran kendiri pendidik, kepercayaan terhadap pembelajaran kendiri pelajar, kepercayaan fasilitasi, kesediaan pendidik, kesediaan pelajar dan kesediaan organisasi dalam menggunakan teknologi E-pembelajaran berkait secara signifikan dengan penggunaan teknologi E-pembelajaran. Analisis regressi berbilang menunjukkan pemboleh ubah tidak bersandar yang dipilih menerangkan 40.7 peratus varians dalam penggunaan teknologi E-pembelajaran. Faktor yang paling berpengaruh ialah kesediaan pendidikan dalam menggunakan teknologi E-pembelajaran dan kepercayaan pembelajaran kendiri pendidik.

Walaupun dapatan kajian menunjukkan kepercayaan pembelajaran kendiri, kesediaan dalam menggunakan teknologi E-pembelajaran berkait secara signifikan dengan penggunaan teknologi E-pembelajaran dikalangan pendidik kejuruteraan, ia perlu diinterpretasi secara berhati-hati. Dapatan kajian yang menunjukkan penggunaan teknologi E-pembelajaran yang sederhana bererti terdapat sebab-sebab lain yang berkemungkinan menjadi penghalang kepada penggunaan teknologi E-pembelajaran dikalangan pendidik kejuruteraan yang perlu diberi perhatian oleh pihak pengurusan universiti. Antara cadangan untuk kajian akan datang ialah dijalankan kajian yang merangkumi faktor-faktor lain yang mungkin menpengaruhi penggunaan teknologi E-pembelajaran dikalangan pendidik kejuruteraan, meluaskan skop kajian untuk merangkumi pelajar kejuruteraan dan kajian terhadap implikasi pengenalan dan implementasi pendidikan berasaskan

hasilan dalam penggunaan teknologi E-pembelajaran dikalangan pendidik dan pelajar kejuruteraan.

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Finally, my eternal gratitude to my late husband, Allahyarham Ariff Ismail Mahmood for his endless support, sacrifices and assistance everyday for the past seven years, that is, since I started my doctoral study on a part-time basis. Even though he did not understand what this thesis was all about, he never complained and never stopped encouraging and supporting me. Sadly, Allah loved him more and took him from the people who loved him on 14th August 2007, just before the completion of this thesis.

I certify that an Examination Committee has met on 4th September, 2008 to conduct the final examination of **Asmah Zakaria** on her degree of **Doctor of Philosophy** thesis entitled "**Self-directed Learning Beliefs, Readiness and Utilization of E-learning Technologies among Engineering Educators in a Malaysian Private University**" in accordance with Universiti Putra Malaysia (Higher Degree Act) 1980 and Universiti Putra Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the degree of Doctor of Philosophy.

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DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently submitted for any other degree at Universiti Putra Malaysia or at any other institution.

ASMAH ZAKARIA

Date: 2 January 2009

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LIST OF ABBREVIATIONS

ABBREVIATIONS	DESCRIPTIONS
IDEAL	Institute for Distance Education and Learning, UPM
IKTM	Institut Kemahiran Tinggi MARA (*MARA Higher Vocational Institute)*
MARA	Majlis Amanah Rakyat
MMU	Malaysian Multimedia University
MNRI	MARA Northrop Rice Institute
OUM	Open University Malaysia
SSI	State Secretary of Perak Incorporated
TAM	Technology Acceptance Model
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
UiTM	Universiti Teknologi MARA (*MARA University of Technology*)
UniKL	Universiti Kuala Lumpur
UniKL-BMI	Universiti Kuala Lumpur- British Malaysian Institute
UniKL-IPROM	Universiti Kuala Lumpur-Institute of Product Design and Manufacturing Technology
UniKL-MFI	Universiti Kuala Lumpur- Malaysian France Institute
UniKL-MSI	Universiti Kuala Lumpur –Malaysian Spanish Institute
UniKL-MIAT	Universiti Kuala Lumpur- Malaysian Institute of Aviation Technology

UniKL-MIMET	Universiti Kuala Lumpur-Malaysian Institute of Marine Engineering Technology
UniKL-MIIT	Universiti Kuala Lumpur –Malaysian Institute of Information Technology
UniKL-MICET	Universiti Kuala Lumpur –Malaysian Institute of Chemical Engineering Technology
UniKL-RCMP	Universiti Kuala Lumpur –Royal College of Medicine Perak
UNITAR	Universiti Tun Abdul Razak (*Tun Abdul Razak University*)
UPM	Universiti Putra Malaysia