UNIVERSITI PUTRA MALAYSIA

FACTORS INFLUENCING THE EFFECTIVENESS OF WEB-BASED LEARNING IN SELECTED IRANIAN PUBLIC UNIVERSITIES

ELHAM FARIBORZI
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By

ELHAM FARIBORZI

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

December 2009
DEDICATIONS

This dissertation is dedicated to

Merciful God

To my lovely husband,
for his never-ending love, support and encouragement

To my beloved parents, sister and brothers
for their love and support as I completed this study

To my lovely country, Islamic Republic of Iran

To this beautiful green country, Malaysia

And to Universiti Putra Malaysia
Those provide me an opportunity for doing PhD in this new field
FACTORS INFLUENCING THE EFFECTIVENESS OF WEB-BASED LEARNING IN SELECTED IRANIAN PUBLIC UNIVERSITIES

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Chairman : Prof. Dr. Kamariah Bt Abu Bakar
Faculty : Educational Studies

The development of learning in the society has always been a topic of concern for most countries. In Iran, discussions for its improvement focus primarily on the role of Information Communication Technology (ICT) on the existing educational systems. Traditional education criteria are no longer sufficient and suitable to cope with the changes that have been brought by ICT. Web-based learning is one of the new changes in Iranian educational systems. Although the role of web-based learning in supporting ICT integration is comprehended as critical, to date there are lack of scientific studies about its effectiveness in Iranian public universities. This study is to understand this information gap through comprehensive sources of data on web-based computer courses in Iran.

The specific objectives of this study were to identify the socio-demographic and academic profiles of students, their perceived effectiveness of web-
based learning, its relationship with a number of independent variables, and to determine learning factors that may influence the effectiveness of web-based learning. The study was primarily quantitative in nature and employed descriptive correlational research designs to collect data on students who were taking web-based computer courses at Iranian public universities during the first semester of 2008/09 (N=1500). The web questionnaire was used to obtain the required data and the number of valid responses was 482.

The results of this study indicated that the average age of the respondents was about 26 years. Half of the students preferred to communicate via e-mail and about 57% of them preferred to download their course contents from files with the .swf extension (Flash Player files). Further, 80% of them indicated that they participated in the web-based courses because they could learn at their own pace and it could fit into their busy schedules. Some 49% of these students had jobs. On average, they spent about four hours a week to study using computers. However, the instructors suggested that for a three-credit computer course, at least six hours must be spent on the computer a week. In addition, 55% of the students perceived that the web-based computer courses were moderately effective. Further analysis showed that the percentage of second year students or above (Level 2) who perceived the web-based computer courses to be effective was higher than the first or second year students doing Level 1.
Meanwhile, the multiple regression analysis indicated that five variables together explained 43% of the total variance for the perceived effectiveness of web-based learning. They were “the extent of students’ learning experiences in web-based courses”, “the extent of students’ preferences about instructional techniques and tools in web-based courses”, “the extent to which computer applications were used by the instructors”, “the extent of learning flexibility in web-based computer courses”, and “the extent of considering some factors on instructional design on web-based computer courses”. These results suggested that the web-based learning system may not be fully effective unless students and instructors know how to use the system correctly and have a lot of experience about it. According to this study, the current situation of web-based learning in Iran where students are not familiar with the self-learning or self-regulated learning methods, besides the flexibility of such a system may reduce the learning effectiveness. Although it has contributed to the literature of web-based learning in Iran, further research should be undertaken on this area in the future.
Secara khususnya, objektif kajian ini ialah bagi mengenal pasti tahap sosio-demografi dan profail akademik pelajar-pelajar yang mengikuti bidang pengajian ini, menilai tahap keberkesanan sistem pembelajaran ini melalui persepsi mereka, menyelidiki hubungannya dengan beberapa pembolehubah bebas tertentu, dan mengenal pasti faktor-faktor yang boleh mempengaruhi tahap keberkesanan pembelajaran berasaskan web. Kaedah yang digunakan adalah berbentuk kuantitatif dan reka bentuk kajian ialah deskriptif korelasi manakala data dikumpul daripada pelajar yang sedang mengikuti kursus-kursus komputer melalui web di universiti-universiti awam di Iran, pada semester pertama sesi pengajian tahun 2008/09 (N=1500). Data berkenaan diperolehi melalui soal selidik menerusi web dengan jumlah pulangan yang boleh diguna pakai sebanyak 482.

Dapatan kajian menunjukkan bahawa purata umur para responden adalah 26 tahun. Separuh daripada pelajar tersebut mengutamakan komunikasi melalui e-mel dan lebih kurang 57% memilih untuk memuat turun isi kandungan kursus melalui fail-fail sambungan .swf (fail-fail Flash Player). Seterusnya, 80% daripada pelajar berkenaan menyatakan bahawa mereka memilih kaedah pembelajaran sedemikian kerana dapat belajar sendirian dan mengatur jadual harian mereka yang ketat. Seramai 49% daripada sampel pelajar berkenaan juga adalah daripada kalangan mereka yang bekerja. Secara purata, pelajar ini memperuntukan masa selama empat jam seminggu bagi menggunakan komputer sewaktu belajar. Namun begitu, tenaga pengajar yang ditemu bual menyarankan bahawa bagi setiap kursus bernilai tiga jam...
kredit, tempoh masa yang perlu digunakan adalah sekurang-kurangnya enam jam seminggu. Selain itu, 55% daripada para pelajar terbit berpersepsi bahawa keberkesanan sistem pembelajaran sebegini adalah sederhana sahaja. Analisis seterusnya menunjukkan peratusan kelompok pelajar tahun kedua dan ke atas (tahap 2) berpendapat bahawa kursus-kursus komputer menerusi web itu berkesan adalah lebih tinggi berbanding dengan kelompok pelajar tahun pertama dan kedua (tahap 1).

Sementara itu, analisis regresi bergarda menunjukkan bahawa lima pembolehubah menyumbang kepada 43% daripada varians yang mengukur persepsi keberkesanan pembelajaran berasaskan web ini. Pembolehubah-pembolehubah berkenaan adalah “tahap pengalaman yang dimiliki dalam kursus-kursus komputer berasaskan web”, “pilihan pelajar tentang alat-alat dan teknik-teknik pengajaran dalam kursus-kursus komputer berasaskan web”, “tahap penggunaan aplikasi komputer oleh tenaga pengajar”, “tahap fleksibiliti pembelajaran kursus-kursus komputer berasaskan web”, dan “tahap mengambil kira faktor-faktor dalam reka bentuk pengajaran dalam kursus-kursus komputer berasaskan web”. Keputusan ini menunjukkan bahawa sistem pembelajaran sebegini hanya akan berkesan sepenuhnya apabila para pelajar dan tenaga pengajar tahu menggunakan sistem dengan betul dan memilki pengalaman yang luas tentangnya. Mengikut kajian ini, keadaan semasa tentang pembelajaran melalui web di Iran, di mana pelajar adalah tidak biasa dengan kaedah pembelajaran kendir atau pembelajaran kawalan kendiri, selain fleksibiliti sistem seperti itu, mungkin boleh mengurangkan
keberkesanan pembelajaran tersebut. Walaupun kajian ini telah menyumbang kepada literatur tentang pembelajaran menerusi web di Iran, kajian-kajian tambahan perlu dilakukan dalam bidang ini pada masa hadapan.
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APPROVAL

I certify that an Examination Committee has met on 28 December 2009 to conduct the final examination of Elham Fariborzi on her Doctor of Philosophy thesis entitled “Factors Influencing the Effectiveness of Web-based Learning in Selected Iranian Public Universities” in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree.

Members of the Examination Committee were as follows:

Prof. Madya Dr. Azizan Asmuni
Faculty of Educational Studies
Universiti Putra Malaysia
(Chairman)

Prof. Madya Dr. Aida Suraya Md Yunus
Faculty of Educational Studies
Universiti Putra Malaysia
(Internal Examiner)

Dr. Wong Su Luan
Faculty of Educational Studies
Universiti Putra Malaysia
(Internal Examiner)

Assoc. Prof Dr. Peter Albion
Faculty of Educational Academic
University of Southern Queensland
(External Examiner)

BUJANG BIN KIM HUAT, PhD
Professor and Deputy Dean
School of Graduate Studies
Universiti Putra Malaysia

Date: 28 December 2009
This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

**Kamariah Abu Bakar, PhD**
Professor  
Faculty of Education Studies  
Universiti Putra Malaysia  
(Chairman)

**Zakaria Kasa, PhD**
Professor  
Universiti Perguruan Sultan Idris  
(Member)

**Bahaman Abu Samah, PhD**
Associate Professor  
Faculty of Social Studies  
Universiti Putra Malaysia  
(Member)

**Muhamad Taufik Abdullah, PhD**
Senior Lecturer  
Faculty of Computer Sciences and Information Technology  
Universiti Putra Malaysia  
(Member)

---

**HASANAH MOHD GHAZALI, PhD**
Professor and Dean  
School of Graduate Studies  
Universiti Putra Malaysia

Date: 13 May 2010
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.

___________________

ELHAM FARIBORZI

Date: December 28, 2009
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LIST OF ABBREVIATIONS

ADL Advanced Distributed Learning
B.Sc. & M.Sc Bachelor of Science & Master of Science
CMC Computer Mediated Communication
CSFs Critical Success Factors
GUI Graphical User Interface
IBT Internet-based training
ICDL International Computer Driving License
ICT Information communication technology
ISD Instructional Systems Design
ISDD Instructional Systems Design & Development
IT Information Technology
LCMS Learning Content Management System
LMS Learning Management System
Moodle Modular Object-Oriented Dynamic Learning Environment
MSRT the Ministry of Science, Research and Technology
OFL Open/flexible learning
OL Online learning
SPSS the Statistical Package for the Social Science
WBI Web-based instruction
WBL Web-based learning
WWW the World Wide Web
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