



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



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

**FACTORS INFLUENCING THE EFFECTIVENESS OF WEB-BASED
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December 2009

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.



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

**FAKTOR-FAKTOR YANG MEMPENGARUHI KEBERKESANAN
PEMBELAJARAN MENERUSI WEB DI UNIVERSITI AWAM TERPILIH DI
IRAN**

Oleh

ELHAM FARIBORZI

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Pembangunan pembelajaran dalam setiap masyarakat sentiasa diberi perhatian oleh kebanyakan negara. Di Iran, perbincangan semasa tentang pembelajaran tertumpu kepada peranan teknologi komunikasi maklumat (ICT) dalam sistem pendidikan sedia ada. Kriteria-kriteria pendidikan tradisional tidak lagi sesuai untuk diguna pakai akibat perubahan-perubahan yang berlaku hasil daripada perkembangan ICT ini. Salah satu daripada perubahan-perubahan yang berlaku dalam sistem pembelajaran di Iran adalah pembelajaran menerusi web. Biarpun peranannya dalam menyokong integrasi ICT sangat mustahak, sehingga kini masih belum ada kajian saintifik yang boleh menilai tahap keberkesanannya di universiti awam di negara ini. Justeru, kajian ini dijalankan bagi mengisi kekosongan maklumat ini dengan menggunakan sumber-sumber secara komprehensif tentang kursus-kursus komputer berasaskan web di Iran.



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 terbabit 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 berganda 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 memiliki pengalaman yang luas tentangnya. Mengikut kajian ini, keadaan semasa tentang pembelajaran melalui web di Iran, di mana pelajar adalah tidak biasa dengan kaedah pembelajaran sendiri atau pembelajaran kawalan sendiri, 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.

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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.

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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