

# A STUDY OF E- LEARNING SITUATION IN IRANIAN HIGHER EDUCATION

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## Abstract

Development of Information Technology based on UNDP studies has five major interactive elements: Instruments and technical infrastructure, Human Resource development, development of policies, content and employment development, and institution development. In order to develop this 5 dimensional model, there would be two other dimensions which are first; socio-cultural context and second; law and regulations. On the other hand, OECD has set a four-level model to evaluate countries' information technology situation. This model encompasses novice level, developing level, maturity level and expertise level. Consequence of combination of these two models shows a 28- situation matrix. As E-Learning has a close relationship with information technology arena, in this study the two models has been based to evaluate E-Learning situation in Iranian universities. Findings show that in majority of the 7 dimensions, Iran should be considered in developing situation (level B). On the other side, E-Learning policy is a unilateral and presentational approach in compare to facilitative approach which is based on critical discourse, interaction and cooperation of students in learning process.

Keywords: Information Technology, Electronic Learning, Higher Education, Iran.

## Introduction

E-Learning is a form of learning which is offered through a variety of electronic tools (Internet, Intranet, Extranet, Satellite Television, Audio and Video tapes, Conversational Television, and CD ROMs), controlled through various ways (self-controlled, controlled by the educator), performed through various structures (courses, modules and small learning activities), and its performance is without geographic and time constraints (simultaneous /non-simultaneous learning).

There are three important components and approaches in E-learning, which is also known as the modern educational method, including: educational methods and content structured for each training, determining the time period for the trainee, and also selecting appropriate place by trainee to have access to educational materials. Besides, e-learning has a wide range and it is divided to a variety of training methods, including Web-based training, computer-based training, training through the mobile digital devices, and training through Mobile phone, regarding its type of use and availability of facilities, each having their own advantages.

In addition, not been required to allocate time and attend the classes, having flexible methods according to students' need, benefiting the advantages of group work in online study, more curiosity, initiative and access to new technology, the use of update data, possibility of learning in any time and place and also reducing costs are mentioned as advantages of e-learning by experts.

E-learning does not require brick and mortar educational facilities, but establishing this method of training needs long term planning principles and policies, which must now be getting started.

But can e-learning be an alternative to traditional education or should it be used only as a supplement? According to experts, despite adequate infrastructure facilities, the world's great universities did not stop

the traditional education, because digital content as important topics in e-education is created by scholars and activists in the university environment.

At the present time, the world is going toward the second version of e-learning in which students produce content that leads the instructors to raise awareness in the field of research on e-learning (Roknodini, 2009).

The first condition for this kind of training is the instructor. In e-learning the teaching method is different and preparing teachers to use this method is important. There are also technological obstacles in the way to reach active e-learning, which humane barriers are the more important ones and removing them requires much more time. The main body of an e-learning system includes 70% instructors, 20% students and 10% technology, which indicates where to start, in other words, according to standards, 20% of investment in this field must be allocated to create networks and 80% to generate content.

Due to low number of educational subjects in the master's degrees in Iran, most of electronic disciplines are offered in this level. Students who have attained their degree by attending classes are familiar with university subjects and methods, and e-learning is much easier for them in graduate studies. This proves to be true for Universities such as "Amir Kabir University of Technology- Iran" and "Iran University of Science and Technology" which have been more successful in electronic master's courses in comparison to electronic courses offered in the bachelor's level. Students who are attracted to electronic courses have lower ratings than those who attend classes at large universities of the country. Therefore, enough facilities must be created for students of these courses to communicate with their classmates to ask their questions and promote their scientific level, to do so they should be obliged to sit for the subjects of practical nature (Akbari, 2009).

Some experts consider virtual learning as unprofessional, because they believe there is no direct supervision on students' studying, and it is more a kind of online trade of educational degrees.

However, there are other Information Technology experts who believe that learning a series of university courses or attaining skills and information is not the only purpose of studying. They believe that university is a stage for socialization and entering the community, and since in the lower levels, primary and high schools play the same vital role, internet can be well considered as the alternative for the brick and mortar classes. These trainings can never replace developing challenges of face to face relations, although since internet communications is becoming richer day by day, perhaps in near future the criticisms to this kind of training would no longer be valid. In studies, done in universities of the UK, results have shown that electronic universities are more successful in theoretical training rather than practical trainings. In addition, according to this study and contrary to expectations, the subject by subject approach to offering courses in electronic learning is slower than the conventional way. Moreover, review of one of the human science disciplines have shown that using the video conferencing technology made the conference parties' plaintiff of the costs, leaving the conference unfinished. Following this study, more attention was paid to the coordination required for electronic learning and against the theory there must be an administrative coordinator to provide educational purposes.

Experts believe that offering practical courses in e-universities can be more successful in Iran, because there are enough facilities for practical courses and students can easily learn the materials through a text file.

From cultural point of view, establishing virtual universities in Iran is an opportunity to introduce our country's culture and language. From economic point of view, due to political and cultural position of Iran, virtual universities can bring in foreign currency, which can be used in developing universities and research. Establishing virtual universities is very affordable because it costs less than traditional universities. But the development of e-learning models needs the realistic understanding of current situation.

## **SURVAY OF E-LEARNING IN IRAN**

The United Nations' Development Program (U.N.D.P) considers Information Technology (I.T) the product of interaction of five main factors, including: the technical infrastructure equipment, Human Resource Development, Policy Developments and Content and institutions development. Socio-cultural background and rules and regulations are two more factors which can be added to this five-side model. On the other

hand, Organization of Europe Cooperation and Development (O.E.C.D) considered a four-stage model to assess information technology in countries, which consists of primary status, a technology under development, phase of maturity and stage of experience. By integrating these two models, 28 situations are created. Since e-learning has a close relationship with IT development, this study was based on the two mentioned models, to assess the electronic learning in Iranian universities.

First of all we take a look at information and communication technology in Iran which is the infrastructure in any e-learning program. In the investigations done by the research department of Ministry of Science, after examining the status of available indexes such as digital access index, index of digital opportunities and electronic readiness assessment, following results were obtained; for example, the digital access index ranking of Iran is 87, which can be found in Table (1).

Table (1) Digital accessibility index

Country	Infrastructure	Financial Ability	Knowledge	Quality	Application	Score	Rank
Iran	0.17	0.96	0.73	0.24	0.06	0.43	87
World Average	0.37	0.62	0.77	0.76	0.14	0.42	-

Table (1) indicates that Iran is in average condition of accessibility. However, Iran does not have much distance with Turkey, but stands far from Malaysia, as well as with the developed countries. In terms of identifying potentials, selecting and acquisition we are in a relatively good condition.

Possessing necessary infrastructure and positive growth, along with appropriate human resources are among the basis of capabilities in the field of information and communication technology of the country.

We have some weaknesses regarding the ability to purchase and negotiate, specifically in the private sector where less experience has been gained. Regarding the capacity of utilization in field of information and communication technology, we are in a good condition. Our status is desirable when it comes to maintenance, simulating and production process. The only glaring issue in this section is that due to lack of presence of leading foreign companies in the field of information and communication technology in the country, the experiences are not adequate regarding learning processes and product engineering. In field of matching products we are in a desirable position; but at the stage of innovation we are facing serious challenges. Inability to perform fundamental research, lacking creative technology innovation and lack of desirable risky investment, are only some obstacles of information and communication technology in innovation level in the country. In addition, we are facing many problems regarding conservation, support and marketing. Inability in social and cultural engineering topics relating to information and communication technology, lack of proper identification of markets and lack of movement towards the creation of new markets can only count for a part of the problem (Science and technology development project report, 2008, Ministry of Science and Technology Research).

Following is the 7 parameters which have been considered regarding e-learning, they are each explained briefly.

### 1. Developing policies

Fortunately, policy makers and senior managers have great interest and acceptance towards expansion of information technology and its application in education. Information technology application expansion plan (also known as TAKFA), e-government projects and establishment of Supreme Council of Information Technology are the three examples of these efforts. In the Ministry of Science, e-learning is encouraged as well. Giving diversity to students' admission and increasing access to higher education is included in government's forth plan of development. In the ministry of education, plan of connecting 100,000 schools to the internet has been successfully implemented.

### 2. Content and Application development

Private sector has shown good activity in providing software and content in this context. Since 1382, universities and educational centers have also entered the demand and supply markets of electronic services. Not having a long history, these services do not have high standards. "Khaje Nasir University" has prepared a native e-learning standard which is not implementable yet.

The most important e-learning standard is SCORM, which belongs to the U.S. and attracted attention of Iranian universities. This web-based standard uses open source software and concentrates on content sharing. GEM standard is related to Department of Education of America, and Edna is related to the Australian Education Network, which their applicability should be studied according to Iran's local conditions, so that it would consequently lead to a native standard. Various facilities are now available for virtual universities, but due to the technical infrastructure, especially not having access to broadband internet in a wide scale, development of content and application moves slowly. When it comes to practice, we realize that these are not multimedia but uni-media centers.

Table 2 shows the results of observation and examination of 50% of these centers. It shows that these different facilities are nominal and their applicability is incomplete, and off-line methods are used along with on-line methods to overcome its shortcomings. E-learning goes toward mnemonic trainings, which is mainly related to human sciences. In fact, traditional education takes place with new tools, and the task of changing instructor's role from a teacher to a counselor does not take place.

Table 2- Results of observation of e- universities' websites in Iran

University	Facilities
Tehran Non-Profit Institute Of Higher Education	<ul style="list-style-type: none"> <li>• Online subject registration</li> <li>• Support and counseling</li> <li>• In touch with lecturers</li> <li>• Group activities</li> </ul>
University Of Tehran E-Learning Campus	<ul style="list-style-type: none"> <li>• E-learning portal</li> <li>• E-learning management system</li> <li>• E-classes: send text and voice</li> <li>• Video conferencing</li> </ul>
Iran University Of Science And Technology-E-Learning Campus	<ul style="list-style-type: none"> <li>• E-classes</li> <li>• Voice mail box</li> <li>• Compulsory attendance classes</li> </ul>
University Of Shiraz- Faculty Of E-Learning	<ul style="list-style-type: none"> <li>• Learning management system</li> <li>• Student e-learning system, mobile phone version</li> <li>• Online student counseling( answers are received within 48 hours)</li> <li>• Shiraz university education support subsystem</li> </ul>
Farabi Private Institute Of Higher Education	<ul style="list-style-type: none"> <li>• Under establishment</li> </ul>
Sharif Technical University-E-Learning ( Courseware)	<ul style="list-style-type: none"> <li>• Virtual tour</li> <li>• Courseware</li> </ul>
Iranian E-Learning Institution Of High Education	<ul style="list-style-type: none"> <li>• Online registration and subject registration</li> <li>• Offline cd as learning supplement</li> </ul>

Hadith Science College (Virtual Hadith Sciences Faculty)	<ul style="list-style-type: none"> <li>• E-classes</li> <li>• Research and discussion venues</li> <li>• Application of audio, video and animation</li> <li>• Audio file usable on mobile handsets</li> <li>• Electronic store</li> </ul>
Virtual University Of Azarbaijan University Of Tarbiat Moallem	<ul style="list-style-type: none"> <li>• Online subject registration</li> <li>• Students and lecturers roaming system</li> </ul>
University Of Esfahan- E-Learning Center	<ul style="list-style-type: none"> <li>• E-library</li> <li>• Chat room</li> <li>• Lecturers and students common weblog</li> <li>• Supplementary attendance classes</li> </ul>
Azad University, Tehran South Branch, E-University	<ul style="list-style-type: none"> <li>• Digital library</li> <li>• Portal</li> <li>• E-learning system</li> </ul>

### 3. Development of institutions and authorities

Fortunately, since 1384 a committee in the Ministry of science has taken the responsibility of studying and expanding e-learning. On the other hand, about 30 institutions of higher learning have launched centers for this purpose. Number of students has increased from 221 in 1383 to 5,314 in 2009, which is an increase of 2400%. This trend continues with a leap growth. Private higher education institutions also entered this field with much interest. Thus, fewer problems exist regarding development of institutions and authorities. But the process of development of institutions is in interdependence with families, volunteers and other cultural, economic, management and technical parameters.

Table 3- Number of current students enrolled in e-courses in public universities in Iran

Level / year	2004	2005	2006	2007-2008	2008-9
<b>Total</b>	221	674	800	3038	5314
<b>Diploma</b>	-	-	-	-	-
<b>Bachelors</b>	113	522	-	1907	2649
<b>Masters</b>	108	152		1131	2652
<b>Professional doctorate (MD)</b>					
<b>PhD</b>	-	-	-	-	9

Iranian Higher Education Report 2006, 2007, 2008

### 4. Technical infrastructure

Fiber-optic networks reached to 125,000 km in the country in 2009, and the number of data access ports is 53,000. Data transmission networks are constructed in 1220 cities and there are 28 million internet users, but the number of people who have access to high speed internet is 400,000, which is not a desirable figure (Iranian Information Technology Company, 1388).

As we know, the minimum speed access to e-learning is 40 kbps; but now students in cities other than Tehran experience a connection of 26kbps, constraining their interactions with their instructors to receiving

text files or voice communications only, and not being able to enjoy video conferencing and experiencing frequent call session failures.

E-learning centers are waiting for serious support in the field of infrastructure from the government and the major reason for their slow business development is the weak infrastructure.

### 5. Human resource development

Presence of hundreds of thousands of IT experts in the country and the interest young students express to relating fields leaves no problems in the context of human resources. Most of university instructors and students and even school students are familiar with seven computer skills. The only problem in this regard is that electronic higher education institutions need interdisciplinary professionals to have enough effectiveness and efficiency.

### 6. Cultural and social fields

Having 28 million Internet users is considered as favorable grounds. On the other hand, establishing “Payam Noor” universities, Iran has experienced a period of semi-distant higher education expansion. This great educational center now has 900,000 current students. Semi-distant training provides favorable tendency toward distant learning courses; provided that distant learning courses do not encounter students with new problems. E-Learning in Iran is now facing the following challenges, which despite the strong cultural and social potentials, makes the tendency toward these courses slow and skeptical.

- Students’ doubt about validity of the degree
- Weakness in the popular fields of medical and engineering
- The courses’ low status and prestige, in a way that students cannot identify themselves as university students, unless they are present in the campus.
- Attracting applicants with only lower academic rankings, which reduces the validity of these courses.

### 7. Rules and Regulations

Unlike those who consider absence or weakness of rules and regulations the main reason for weak or slow development of electronic learning, the author believes that expansion of these courses do enjoy legal support. The major problem is that the unknown potentials of these laws and regulations are not being exploited. There are at least 7 related legislations now, which are as follows:

- Support the rights of authors and artists and writer legislation –approved 1348
- The translation and reproduction of books, magazines and audio opuses legislation
- Iranian government’s joint to the establishment of the World’s Intellectual Properties Organization convention (W. I. P. O) legislation
- Legislation of the country’s Council of Informatics
- Legislation of functions and powers of the Ministry of Communications and Information Technology -approved 1382
- Protection Act of Copyrights of computer software- approved 1379
- Rules and Regulations of computer information networks-approved 1380

### CONCLUSION

Review of literature shows that the status of e-learning in Iran can be evaluated in two macro and micro levels. In the macro level, the judiciary panel group consisted of 7 experts of Iranian higher education system, working for the institute of research and planning of ministry of science and higher education, who expressed their opinion in 7 parameters. The table below shows the mean of their comments.

Parameter/ Stage	Primary	Developing	Mature	Expert
Development or rules and regulations			*	

Development of content and application		*		
Development of institutions and authorities			*	
Technical infrastructure	*			
Human resources			*	
Cultural and social grounds		*		
Rules and regulations		*		

In the micro level, the authors' direct observation of 11 websites of e-institutes has shown that the dominant approach in e-learning is a one-way and array approach; rather than facilitator approach, based on critical dialogue, interaction and participation from the students side in the learning process. However it should also be kept in mind that technical and infrastructure limitations have not been without effect in adopting such an approach.

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