

## VIRTUAL STUDENTS' PERCEPTIONS OF E-LEARNING IN IRAN

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### ABSTRACT

With the emergence of the Internet, e-learning has increasingly become the promising solution that continues to grow day after day. Considering students' perception toward e-learning is important in successful development of e-learning in higher education, since attitude of user towards application of information technology is one of the most effective factors. This paper examines perception of virtual students' attitudes towards e-learning in Iran. A descriptive–correlation survey approach was used in this study. Students (n = 110) filled in a web-based closed questions questionnaire. Reliability and validity of instrument were determined by investigating the attitudes of e-learning specialists in Tehran University and application of Cronbach's Alpha ( $\alpha=0.88$ .) Descriptive and inferential statistics were used to analyze the data using SPSS Win13. Questionnaires received were analyzed, putting the students' perceptions in relation to gender, age, knowledge of computers and attitudes to advantages and disadvantages of e-learning. Results showed that students have positive perception to e-learning. Liner regression analysis indicated that 68% of variation in virtual students' perceptions of e-learning was determined by the four variables of: Students' assessment about competency of e-learning, access to internet, computer and internet usage and assessment of current higher education system's shortcomings.

**Key Words:** E-learning, Perception, Higher Education

### INTRODUCTION

Advances in Information and Communication Technology (ICT) are opening up new opportunities for distance learning. The use of ICT in delivery of education has major implications for learners and institutions. It is widely accepted that advances in information technology and new developments in learning science provide opportunities to create well-designed, learner-centered, interactive, affordable, efficient, flexible e-learning environments (Khan, 2005). Higher education institutions in developing countries often have problems keeping up-to-date with advances in international science and technology. E-Learning offers many opportunities for supporting education in higher education in developing countries such as Iran. The term e-learning embraces a variety of electronic delivery media, for example web-based multimedia, interactive television, virtual classrooms, video conferencing, and so forth. E-learning, as a positive reaction by universities to the challenge introduced by IT, is characterized by: (1) separation in time and/or space between the teacher and students, among the students themselves, and between the students and educational resources; (2) interaction between the teacher and students, among the students, and between the students and educational resources by means of one or more media, especially through the Internet; and (3) a process of teaching and learning not limited to the immediate time and/or place (Oh 2003).

In this paper e-learning is defined as teaching and learning that are delivered, supported, and enhanced through the use of digital technologies and media. We consider it mostly off campus learning through synchronous or asynchronous which may encompass a few face to face meetings, but the default mode occurred by distance.

Every college and university in developed countries is discovering exciting new ways of using information technology to enhance the process of teaching and learning and to extend access to new populations of students. Long sides, many universities in developing countries like Iran are investing significant capital for developing virtual universities or virtual sections in the conventional campus.

E-learning in Iran is still in its infancy stages and there are only a few online programs. The history of e-learning in Iran at present time did not exceed more than 6 years, yet from a realistic point of view we might say that e-based learning in Iran has had a 5 year experience and even younger. E-learning in Iran is delivered by both the private sector and government organizations. There have been risen a plenty of virtual universities or centers like Amirkabir University of Technology, Iran University of Science and Technology, Shiraz virtual University and some Islamic virtual collages and centers like Islamic virtual centers and Faculty of the Science of Hadith.

Several studies have been published exploring student perceptions and expectations regarding e-learning (Wang, 2004). Recent studies by the National Center for Education statistics show a growing demand and acceptance of online learning (Waits & Lewis, 2003). Online access can affect how successful students will be in Web-based classes (Anawati & Craig, 2006). Previous research into online collaboration and education in international environments indicates that maintaining contact and access is essential to educational success or students' affective and cognitive development. This contact involves (a) keeping students involved in online projects and (b) building a kind of online community essential to educational success (Vogel et al., 2001). Students who have been involved in e-learning courses are generally very positive about their experiences. At the University of Wisconsin, 80% of the students who took a blended learning course indicated they thought the experience was worthwhile and that they would recommend a course offered in online format to others (Aycock, Garnham, & Kaleta, 2002).

E-learning has been promoted as being more cost effective, convenient, and increasing opportunities for life-long learning. It has demonstrated several advantages over traditional learning, especially in allowing "learning anytime and anywhere." Students have access to online course materials independent of time and place. It also allows students to reflect on the learning materials and their responses, and permits them to work at their own pace, regardless of race, sex, disability or appearance (Richardson & Swan, 2003; Swan et al., 2000).

The process of changing traditional education into a modern one in the Iranian society involves many critical problems which can be summarized as following according to recent studies (Dilmaghani, 2003; Noori, 2003):

- Lack of realistic comprehension concerning the process of learning
- Ambiguous understanding about students' educational needs in different levels
- Defective implementation of computer hardware and software
- Weak IT education
- Faint IT infrastructure
- No realistic point of view or strategic program for higher education
- Budget and equipment shortages
- Influential atmosphere of political, social and economic situations
- Lack of information literacy

Some studies indicate that students have more positive attitudes about the course and their learning in an online context (Sandercock & Shaw, 2000; Spiceland & Hawkins, 2002; Stringer & Thomson, 1998; Wegner, Hollyway, & Garton, 1999).

Sanders and Morrison-Shetlar (2002) examined student attitudes with regard to the Web-enabled learning component in a general biology course for undergraduate non-majors. Their results showed a positive effect on student learning, problem-solving skills, and critical thinking skills, with females responding more positively than males.

Learner motivation is one of the key factors affecting student performance and learning, particularly online learning success (Cole, Field & Harris, 2004; Ryan, 2001). If students perceive some benefits to their learning, they will likely be more motivated to perform well. As McKeachie (2002) observes, "Students who are motivated to learn will choose tasks that enhance their learning, will work hard at those tasks, and will persist in the face of difficulty in order to attain their goals."

As a result, it is seen that learners' perception plays substantial role in improving efficiency of e-learning system. In this context, the main purpose of present study is to provide an overview of the perceived advantages and

disadvantages of e-learning system from the perspective of virtual students by analyzing various aspects of instruction at virtual universities in Iran. Knowing that this type of education system is in its starting stage in Iran, perceptions of e-learners would help decision makers in related fields in better understanding of the systems requirements and potentials. This paper adds to the growing body of literature exploring students' attitudes towards e-learning viewed by virtual students in Iran.

## **METHODOLOGY**

The data for this study are based on students' experiences taking an online learning unit offered by the University of Technology, Iran University of Science and Technology (IUST) and Shiraz University through their websites. Currently about 2200 Iranian students are taking e-learning courses at B.S. and M.S. degree programs in Iran.

Sharable Course Objects (SCOs), which are created by using sound, text, graphic and animation are accessible to students, registered for that course, in the Learning Management System (LMS) system, through the internet or intranet. Selected universities use SCORM standard for their courses and SCOs are mostly made in flash environment. These universities offer CDs as part of their educational system, related to the online courses or as general information. It should be noted that live classes with audio and video are not compulsory at the moment in Iran. This is mainly due to insufficient bandwidth, available to end users. So, in virtual branch of these universities, all courses (except practical courses and laboratories) are digitized and saved with high quality. Students can attend on-line classes whenever and wherever they have access to the Internet. One important fact in selecting virtual universities mentioned above is that they all use blended learning method, which has been recognized as the most effective way for virtual learning in the world.

Due to the ability of most LMS systems, all on-line activities of students can be recorded, such that the details of their connectivity are available to professors, administrators and supervisors. According to the educational rules of universities in Iran, students are not allowed to be absent from classes more than a predefined level. Although courses are available on-line to all students at all times, which is considered as the most important benefit of virtual learning, students must follow a weekly schedule to attend these classes; else they will receive a warning note, and finally a failing grade.

The methodological approach of this study employed an analytical method (correlational study). The study population consists of virtual graduate students in Iran (N=240). Currently only Amirkabir University of Technology, Iran University of Science and Technology (IUST) and Shiraz University have started their activities by accepting virtual students at M.S. level. So, virtual graduate students in these universities were the target population who have been selected by using stratified randomization method (n=118).

On the basis of review of the literature, a questionnaire was developed to collect the necessary data. The questionnaire covered four areas: 1) demographic characteristics such as age, sex, university, and field of study; 2) extent of computer and internet use which were measured on a five-point Likert scale which ranged from 1 (very little) to 5 (very much); 3) advantages of e-learning system which were measured on a five-point Likert scale which ranged from 1 (strongly disagree) to 5 (strongly agree); and 4) disadvantages of e-learning system which were measured on a five-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree).

Content and face validity of instrument were established by investigating the attitudes of e-learning specialists in Tehran University, Iran. A pilot study was conducted with 25 students in Tehran University. Questionnaire reliability was estimated by calculating Cronbach's Alpha. Reliability for the overall instrument was estimated at 0.88. Students filled in a web-based closed questions questionnaire. Email addresses for this population were obtained from their engaged faculty's websites. The web-based HTML format of the questionnaire was designed. The compiled data were saved at a data bank designed for this purpose. After the initial mailing and two follow-ups (resending a letter and a copy of the questionnaire by email), a total of 110 students responded. Data collected were analyzed using the Statistical Package for the Social Sciences (SPSS13). Appropriate statistical procedures for description (frequencies, percent, means, and standard deviations) and inference were used.

## **RESULTS**

### *Personal characteristics of respondents*

Approximately 84.9% of Virtual graduate students who participated in the study, between 24 to 29 years and only 15.1% more than 30 year. The mean age of respondents was 26.3 years. 53.8% of respondents were male and 46.2% were female. About 81.2% of respondents were employed, while about 18.8% were unemployed.

Among employed students, 79.5% were employed full time and 20.5% were employed part time. Grade point average of graduate students during their B.S. education was 15.73.

*Respondents' perceived level of computer and Internet use*

Computer and internet skills affected students' use of electronic information resources. For this research, computer and Internet use were measured using a five-point Likert-type scale. Table1 shows the skills of the respondents use the internet. As shown in Table1, the most important uses are Internet surfing and email. The least are chat, news groups and data banks.

Table 1: Respondents' perceived level of computer and Internet use (n=110)

<b>Computer and internet use</b>	<b>Mean</b>	<b>SD.</b>	<b>C.V.</b>
Internet surfing (on-line)	4.49	0.81	0.18
E-mail	4.45	0.62	0.14
Excel	4.30	0.54	0.13
PowerPoint	4.16	0.52	0.13
Word	4.07	0.94	0.23
Chat	2.40	1.47	0.61
News groups	2.15	1.39	0.65
Data bank	1.65	1.46	0.88

Scale1) Very little; 2) little; 3) somewhat; 4) Much; 5) Very much

*Perceptions about advantages of e-learning system in front of traditional system*

Perceptions of virtual students about advantages of e-learning system versus traditional system were measured. In order to identify and explore students' perceptions and experience about advantages of e-learning, students' comments were obtained via web based questionnaire. Quantitative data was obtained by asking students to indicate if they agreed or disagreed with a series of statements about their experiences and preferences regarding the use of online learning tools on a 5 point Likert scale (1=Strongly Disagree and 5=Strongly Agree). The results from the survey suggest that the students view online learning favorably. Table 2 provides a summary of the results obtained. As indicated in Table 2, the respondents rated 7 items as being in "high importance" and 4 items as being in "average importance" category. The two highest rated items were "Flexibility in time and place" and "Ease and quick share of learning materials".

Table2: Virtual student's perceptions toward advantages of e-learning system

<b>Advantages</b>	<b>Mean</b>	<b>SD.</b>	<b>C.V.</b>
Flexibility in time and place	4.80	0.40	0.08
Ease and quick share of educational material	4.56	0.59	0.13
Improved collaboration and interactivity among students	4.50	0.66	0.15
Access to higher education for all applicants	4.46	0.71	0.16
Possibility of working with e-learning	4.44	0.76	0.17
Accommodates different types of learning styles	4.10	0.81	0.20
Quick feedback	4.06	0.83	0.20
Wide and diverse interactions	3.93	1.14	0.29
Confidence	3.85	1.12	0.29
Easy updating of learning material	3.69	1.13	0.31
More focused on the learner	3.33	1.12	0.34

*Perceptions about disadvantages of e-learning system in front of traditional system*

Perceptions of virtual students about disadvantages of e-learning were also measured. The virtual students were asked to indicate their perceptions regarding the disadvantages of e-learning system as compared to traditional system. In order to identify and explore students' perceptions and experiences about disadvantages of e-learning, students' comments were obtained via web based questionnaire. As indicated in Table 3, the respondents rated 6 disadvantages as being in "high importance", 4 items as "average importance" and 1 item as "low importance" category. The highest rated disadvantage of e-learning system was "technology issues" factor which included whether the existing technology infrastructure could accomplish the educational goals, whether additional tech expenditures could be justified, and whether compatibility of all software and hardware could be achieved.

Table3: Virtual student’s perceptions toward disadvantages of e-learning system

Disadvantages	Mean	SD.	C.V
Technology issues	4.80	0.54	0.11
Reduced social and cultural interaction	4.70	0.48	0.10
Inappropriate content	4.48	0.95	0.21
Lack of readiness in faculty members	4.29	0.96	0.22
Slow Internet connections	4.15	0.93	0.22
Up-front investment	4.10	0.79	0.19
Students weakness in computer skills	3.63	0.95	0.26
Less awareness of student with learning style in virtual environments	3.58	0.85	0.24
Students weakness in Internet skills	3.55	0.92	0.26
Students weakness in self directed learning	3.21	1.13	0.35
Students weakness in Internet skills	2.81	0.79	0.28

*Correlation between selected dependent variables with perception of virtual students*

The Pearson coefficient of correlation was used to identify correlation between selected dependent variables with perception of virtual students regarding e-learning. The relationship between some selected respondents’ characteristics with perception of virtual students regarding e-learning is presented in Table 4. There was a significant relationship found between level of Internet use, level of computer use, access to internet, assessment of traditional higher education system’s shortcomings and students’ assessment about competency of e-learning.

Table4: Correlation between selected dependent variables with perception of virtual students regarding e-learning

variables	r	P
Level of Internet Use	0.714**	0.007
Level of computer Use	0.534*	0.026
Access to internet	0.556*	0.017
Assessment of traditional higher education system’s shortcomings	0.601*	0.010
Students’ assessment about competency of e-learning	0.734**	0.001

P ≤ 0.01:\*\* p ≤ 0.05:\*

*Liner regressions for prediction of changes in perception of virtual students*

Linear regression was used for prediction of changes in perception of virtual students regarding e-learning. Stepwise regression analysis indicated that 68% (R2=0.680) of variation in students’ perceptions of e-learning was determined by four variables: Students’ assessment about competency of e-learning, access to internet, computer and internet usage, and assessment of traditional higher education system’s shortcomings. The relationship is described in the following formula:

$$Y=7.861+0.525X_1+0.266 X_2 +0.459X_3 + 0.255X_4$$

Table5. Linear regression for prediction of changes in perception of virtual students regarding e-learning

Variable	B	Beta	T	Sig
Students assessment about competency of e-learning (x <sub>1</sub> )	0.346	0.525	3.254	0.004
Access to internet(x <sub>2</sub> )	0.467	0.266	4.214	0.002
Level of Internet Use (x <sub>3</sub> )	0.259	0.459	4.580	0.012
Assessment of traditional higher education system’s shortcomings (x <sub>4</sub> )	0.193	0.255	3.199	0.033
<b>F=12.872</b>		<b>F Sig: 0.00</b>		
<b>R=0.725</b>		<b>R<sup>2</sup>=0.680</b>		

**DISCUSSION**

As shown in other studies (Sandercock & Shaw, 2000; Spiceland & Hawkins, 2002; Stringer & Thomson, 1998; Wegner, Hollyway, & Garton, 1999), results of this study indicated that students have positive perception toward e-learning.

Results about respondents' perceived level of computer and Internet use showed that most important users were using internet surfing and email. The least important uses were chat, news groups and data banks. As indicated by Richardson & Swan (2003), and Swan et al., (2000), the results from the survey showed that the two highest rated advantages of e-learning system were “flexibility in time and place” and “ease and quick share of learning materials” and the highest rated disadvantage was “technology issues”. Regression analysis indicated that 68% of variation in students' perceptions of e-learning was determined by the four variables of: students’ assessment about competency of e-learning, access to internet, computer and internet usage and assessment of current higher education system’s shortcomings. Cole, Field & Harris, (2004) and Ryan (2001) also emphasize this point in their studies.

## CONCLUSIONS

Deploying advanced higher education institutes and colleges equipped with modern e-learning facilities is one of today's urgent needs in developing countries like Iran. But the sustainability of such learning systems depends on making sound and realistic pedagogical strategies. New learning technologies need to be targeted so that they may develop applied learning skills in the students. As the writers of this paper have proposed, developing e-learning systems could be considered as a solution for the hazed situation of online higher education in Iran. If e-learning is to have a meaningful role in higher education, it is important that universities focus on students’ attitudes and their expectations with regard to the role of e-learning within their higher education experiences. E-learning represents an important, growing trend in the application of technology to facilitate student learning in Iran. The study presented here focused on virtual students’ perceptions of e-learning among users with mostly limited prior e-learning experience. The findings provide important insight about students’ perceptions of e-learning and raise practical considerations for its implementation. This study is thus just an initial effort at providing insightful analyses to the policy makers of developing countries such as Iran’s higher education institutes. Additional studies are recommended to extend the research on both professors’ and students’ perceptions to their overall attitude, such as willingness to use e-learning, their need for educational technology, as well as technical assistance and training support.

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