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### ABSTRACT

Recently, higher education systems seek to use network-based and internet-based information technologies in education, teaching and learning. E-learning in Iran higher education system has been started since 2003, however, its development has been very slow. The present study is a survey research. The participants (n = 500) of the study are faculty members, graduates and PhD students of Takestan Islamic Azad University, Iran. The accuracy of indicators and items in the questionnaire (face validity) has been confirmed by specialists. A questionnaire was used to collect data. The questionnaire on the e-learning barriers was distributed among the respondents. The reliability of the questionnaire was calculated by using Cronbach Alpha. In this study, Factor analysis is used to achieve the key factors. The results show that deficiency of executives, lack of learners' motivation, infrastructural barriers, restriction of credit, and software and hardware limitations are the main problems in the development of web-based training. At the end of the article, some recommendations are presented aiming to accelerate electronic training in Iran's higher education system.

**KEYWORDS:** Higher Education, the Literature and Human Sciences College of Takestan Azad University, web-based training, barriers and strategies

### INTRODUCTION

Since more than two thousand years ago, the fields of teaching and learning experienced many changes and there is very little variation, now, with advent of information technology, rapid developments have started in this field (Jerry, 2000). It is indicated that, these developments range from learning resources that students were sent to the students' home in the printed form to educational radio stations, educational television programs and recently, e-learning and interactive web-based training (Jamalan, 2004). These technological developments, has disrupted all equations and the structure of educational systems; and, educational policy makers and planners are forced to be consistent with the new transformations.

Emergence of communication networks such as the internet, along with advanced tools and educational facilities, caused the method of teaching to be changed. It enables a wide range of knowledge seekers, from near and far distances, to enjoy training network; and, with methods different from conventional types implement scientific programs. This new method of learning is called e- (virtual) learning, which today is known as the most advanced teaching methods and it is benefiting from variety of advanced technologies, such as networking, databases, and knowledge management, etc. (Galusha, 1997).

Many universities invest large, and however imperfect, amount of financial resources in e-learning. But they gain little fundamental change or profit due to lack of strategic orientation and an integrated approach. Concurrent with the development of e-learning as a transformative technology, institution policies should be defined to provide adequate resources in order to simplify the long and difficult processes (Garrison & Anderson, 2002).

In the implementation and development of e-learning programs, there are barriers and limitations. One of the largest of them is lack of library facilities as one from of supporting systems in e-learning and since library is considered as the nerve center of any educational institution (Mabawonku, 2004), the students who lack adequate information resources during their education, the quality of their education will be degraded. Therefore, e-learning performers should not only be responsive to the students' needs, but also they should be involved in the design and delivery of support services and information resources, because libraries and information centers play an important role in improving the quality of their e-learning programs (Succhandand, 2002).

Other obstacles and limitations are that e-learning cannot be a good replace for teacher, human and emotional interactions as well as face to face communication in the classroom (Twomey, 2004).

Other limitations of the use of computers in educational environments are lack of proper understanding of virtual learning environments, lack of proper infrastructure and telecommunications, and enough bandwidth for transmitting and receiving data. Moniee (2004), in his article, acknowledged that system of supply and demand for higher education still do not have an accurate understanding of virtual spaces and it is well acquainted with the features and functions and does not know the basic information technology skills yet (Moniee, 2004). In this system, the learners' success is associated with technical skills in the use of computers and networks (Schuster, 2003). The high rate of received messages and responding them is time-consuming and information management skills are required (Thourmond, 2003).

Zhang and colleagues (2002) and Wilson and Moore (2004) considered the cost of access to the internet as the problem of virtual education. They still believe that the price of Internet access is high; so, many students simply cannot use this technique as low-cost method. In some studies, it is also referred to the low speed and high cost of the purchase and development of internet technology (Murphy & Dooley, 2000; Grant, 2004).

Kurtus (2000) and Beneke (2001) have mentioned that the main issues of virtual learning are lack of social interaction and the interval between students and faculty members' activities. According to them, students can't interact with friends and classmates when faced with possible problems and images and texts may not satisfy the learners. Some researchers asserted cases such as illiteracy in Educational Technology, lack of training in this area, inexperienced faculty members in the effective use of new technologies, and their resistance for virtual courses as the main issues of e-learning (Anstead et al, 2004; Alston et al, 2003; Kelsey et al, 2002; Dillon & Walsh, 1992).

The present study is conducted to determine the attitudes of students and faculty members of the Literature and Human Sciences College of Takestan Azad University toward barriers and strategies of teaching e-learning system.

The present study, entitled investigation of the barriers and strategies for the development of e-learning in the Literature and Human Sciences College of Takestan Azad University, explains the necessity of the operation and development of e-learning looking at these issues. The following cases are the concerns and issues facing the education system in the country.

In such circumstances that the country in terms of population is the world's youngest country, more people tend to have academic education. This issue due to the recent changes in the world and the arrival of the information age, in which knowledge provides the highest value, has faced us with a major challenge that can be overcome using e-learning. Several factors make the development of e-learning difficult in organizations especially higher education that is considered as barriers to the development of e-learning in higher education; and the identification of them to foster goals is a prerequisite. Since Takestan Azad University is one of the great universities in Iran, many students at different BA, Master's and doctoral levels are studying, a type of education is needed that that could potentially respond (teaching and learning) students' needs, and provide transmission speed, flexible, accessible, learner-centered, and up to date information and time and cost savings to students.

## LITERATURE REVIEW

Problems in the development of e-learning are barriers due to policies of educational and planning, infrastructure, language, capacity building and finance, pedagogical challenges, organizational challenges, technological challenges (Razzaghi, 1383; Jahangard, 1382).

In another study on the barriers to the development of the e-learning on the educational system in Iran, these barriers were divided into six categories:

- technological;
- cultural and social;
- pedagogical;

- legal and administrative;
- strategic; and,
- economic (Houseinilorgani et al, 1387).

In some studies, lack of social participation and social interaction between students and professors have been considered and their results suggested that students, in e-learning, do not possess the possibility of interacting with friends and classmates and getting help when they are faced with problems and then, probably images and texts may not be satisfying for them (the students). So, the students are deprived of the sense of community in e-learning; and, the students' sense of resentment and despair in e-learning courses is more in comparison to traditional courses (Kurtus, 2000; Beneke, 2001; SalimAbadi, 1385; Lieblein, 2000).

The Internet information technology offered tools for developing collaboration and cooperation activities in distance learning (Jara et al., 2009; Macdonald, 2003), facilitating student interactions in a constructivist perspective linked to Vygotsky's theory (1978). Cooperation implies an engagement to peers through social interaction (Amhag & Jakobsson, 2009; Hew & Cheung, 2008) and collaboration activities delivered in the virtual social environment offered the student the possibility to develop understanding through their own constructs, becoming active learners. Chao, Saj, and Hamilton (2010) believe that collaborative course implementation is the best way to design high quality online courses.

E-learning efforts and experiments currently receive much attention across the globe. The availability of electronic and web-enabling technologies also dramatically influences the way we view the learning strategies of the future (Kramer, 2000; Hitz, 1995).

Lynch (1999), in a study entitled 'investigation of effective variables for students participation in an electronic evaluation', that was conducted by regression analysis, showed that 'computer', 'gender' and 'the experience of participating in Electronic evaluation' are of the predictor variables of the variability of the dependent variables. There is a significant relationship between the variables 'attitude toward computers and CBT' and 'psychological readiness of the learners to participate in electronic evaluation (Lynch, 2004).

Looking at recent developments at the educational system shows that most of these developments were used in educational technology for questions and answers and acquiring primary technology skills. The application of this technology leads to the basic skills. Further development of technology and the increasing use of it lead to the greater use of information technologies in order to gain the advanced skills (Rose, 2001).

For the past few years, there has been a growing understanding of the important role of information and communication technologies (ICT) in higher education. Various new models of education are evolving in response to the new opportunities that are becoming available by integrating Web-based technologies (Barak & Rafaeli, 2004; Light, Nesbitt, Light, & White, 2000; Ward & Newlands, 1998). Though Web-based technologies are considered to be commonly used for educational purposes, the transition from traditional teaching to ICT-enhanced environments is not obvious and ought to be further investigated.

Arbaugh (2002) defined e-learning as the use of the Internet by users to learn specific content. Other researchers define e-learning as using modern Information and Communications Technology (ICT) and computers to deliver instruction, information, and learning content (Selim, 2007). The stakeholders of e-learning are learners, faculty, administrative and technical staff, and employers (Ozkan & Koseler, 2009).

Some, like Hinmann (2003) stated the circumstances for the easier and better implementation of these trainings in virtual interactive spaces. In other studies, it has been shown that implementing e-learning would be merely successful when the courses are theoretical. E-learning has great facilities for solving many of the problems of education systems including education system such as limited financial resources, lack of attention to developing learners' creativity and innovative ability, little use of distance learning technologies and the Internet, little relationship of students with the international scientific community, little relationship of education sector with the private sector, mismatch between education system and global changes, use of inappropriate teaching methods, lack of a learner-centered approach in education and lack of cross-organizational relationships (Esmaeeli Salumahaleh, 2013)

Some researchers have referred to management issues such as student recruitment strategies, lack of standardization in the field of e-learning, inadequate salary for faculty members, shortage of teaching spaces which are equipped with new technologies, assessing methods of students, copy right and intellectual property issues of the content and course (Shea et al. 2005; Wilson 2003).

In some studies, lack of social participation and social interaction between students and professors have been considered and their results suggested that students, in e-learning, do not possess the possibility of interacting with friends and classmates and getting help when they are faced with problems and then, probably images and texts may not be satisfying enough for them (the students). So, the students are deprived of the sense of community in e-learning; and, the students' sense of resentment and despair in e-learning courses is more in comparison to traditional courses (Kurtus 2000; Beneke 2001; Lieblein 2000; Liyan Song et al. 2004).

E-learning, which is considered as both internet use and digital technologies in teaching and learning, has always been identified as either an alternative solution or a new procedure to boost traditional approaches of education (Mirzayi and EsmaeeliSalumahaleh, 2013).

Information technology has created new opportunities for education. More than 1000 institutions in 50 countries provide e-learning options (Sharma & Kitchens, 2004). E-learning is a useful tool for enhancing the quality of teaching and learning. E-learning is an "innovative approach to education delivery via electronic forms of information that enhance the learner's knowledge, skills, or other performance" (Siritongthaworn, Krairit, Dimmitt, & Paul, 2006, p. 139).

When examining the literature at the intersection of teaching and learning with information and communication technology (ICTs), one is struck by the relative lack of focus upon the potential problems and drawbacks of the incorporation of technology into educational work-life (i.e. Granger, Morbey, Lotherington, Owston, & Wideman, 2002; Hassini, 2006; Liaw, Huang, & Chen, 2007; Marbach-Ad & Sokolove, 2001; Marbach-Ad & Sokolove, 2002; Mazzolini & Maddison, 2007; Ruthven, Hennessy, & Deaney, 2005).

Frazeen (2006), in his final dissertation, entitled 'effective factors in quality of web-supported learning' considers the relationship and impact of several basic factors. He divided these elements in following six groups: organizational and educational factors, instructor, students, technology and educational designing (Frazeen, 2005).

Recent studies have shown that "the successful implementation of educational technologies depends largely on the attitudes of educators, who eventually determine how they are used" (Albarini, 2006). Indeed, understanding the intrinsic and extrinsic dimensions, and including moderating factors (specifically, the cultural dimensions) that influence educators' attitudes towards ICT and adoption in higher education is, therefore, a focal point of interest but is under-researched in recent educational studies of information-accessing behavior (see for instance, Chang and Lim (2002)). As Li and Kirkup (2007) propose, "how far culture influences people's perception of the Internet and their use of it (. . .) needs further research". As Venkatesh (2000) notes, there is a significant and growing body of research regarding the importance of the role of intrinsic motives in technology use (see for instance, Davis, Bagozzi, and Warshaw (1992); Finneran and Zhang (2005) and Sanchez-Franco and Roldan (2005) for a review).

Chahill (2008), based on Duderstat (2001), in this regard, stated that the higher education must meet these changes and they should invest in capacities which make the new types of learning, independent of time and place limitation, possible, in order to create a persuasive view in their future in the next millennium (Chahill, 2008).

## RESEARCH GOALS

1. The investigation and development of e-Learning at the Literature and Human Sciences College of Takestan Azad University
2. Identification of (technical, human, administrative and educational) barriers in the development of e-learning in the College,
3. Identification of the different (technical, human, administrative and educational) solutions in the development of e-learning in the College,
4. Evaluation and determination of contribution of each factor in the development of e-learning.

## RESEARCH QUESTIONS

- Are technical, human, administrative and educational infrastructures the most important obstacles to the development of e-learning in the Literature and Human Sciences College of Takestan Azad University, Iran?
- Does the development of e-learning in the Literature and Human Sciences College of Takestan Azad University require the identification various proper strategies in technical, human, administrative and training perspectives?
- Do educating students and teachers lead to the development of e-learning in the Literature and Human Sciences College of Takestan Azad University, Iran?
- Do review and determination of each factor in the development of e-learning contribute to the development of e-learning in the Literature and Human Sciences College of Takestan Azad University, Iran?

### **METHODS AND MATERIALS**

This study is a survey. Survey researches are reviewed and investigated by selecting and studying samples chosen from the community; and frequency, distribution and the relationships among variables are investigated in survey researches. In this research type, the scholar infers the defined characteristics of the society by the analysis of the data obtained from the sample. The most common method for collecting the data in the surveys is the questionnaire (Kurlindger, 1986). Regarding the data collection method of the present study, non-experimental descriptive method is used. This type of research can be merely for understanding the current situation and it is used to assist the decision making process. Furthermore, this study is actually applied when there is no possibility of manipulating variables and only the researcher will examine the relations. So, the present study is non-experimental descriptive type (Sarmad et al, 1376).

#### ***Participants of the study***

Population is the collection of individuals or objects which have one or more attributes in common. Therefore, in this study, the populations are postgraduate students and PhD candidates in the second semester of the academic year 1391-92 in the Literature and Human Sciences College of Takestan Azad University, Iran, which some of them were selected by sampling; and their opinions will be used. Statistics of graduate students (Masters and PhD) and faculty members of the Literature and Human Sciences College of Takestan Azad University for each department is shown in table 1.

*Table 1: Faculty and students of the Literature and Human Sciences College of Takestan Azad University, in the second semester of the academic year 1391-92*

No.	Master degree	Number of Ss	The college majors	Number of Faculties
1	English Language Teaching	76	English Language Teaching	6
2	English Translation	79	English Translation	8
3	Linguistics	51	Linguistics	5
4	Law	78	Law	6
5	Persian Literature	81	Persian Literature	6
6	Educational management	92	Educational management	10
7	Political Sciences	48	Political Sciences	5
8	Theology	87	Theology	9
9	Jurisprudence	62	Jurisprudence	8
total		653		63

#### ***Sampling method***

In this method, two-stage random sampling is used. In the first stage, as table 1 shows, the number of educational courses was selected and in the next step the total number of graduate students (Masters and PhD) faculty and the departments, the number of faculty and students of each department was examined. Thus, the total population of faculty and graduate students (Masters and PhD) were considered because of their limited number (below 200), and 180 of the master students were analyzed.

#### ***Data analysis Instruments***

In data analysis, regarding the measured variables, in terms of research objectives different statistical methods were used. In the descriptive statistics, the following items were used: frequency, percentage, median, mode, standard

deviation, variance, mean and the others. In addition, to study the relationship between variables and to compare the differences among the groups, parametric statistical tests such as F, T and non-parametric statistical tests of Kruskal-Wallis and Mann Whitney will be used. Finally, to identify the key factors, factorial analysis is used. These actions will be conducted using the SPSS/win 16 software.

**Data Collection Method**

For data collection, two methods of library research were used; like, studying the records of university that had been a pioneer in the use of e-learning and also using the conditions, facilities, infrastructure and equipments of that universities for the development of such courses. To collect the field data to test the hypotheses, a questionnaire was used. The questionnaire consists of two parts, one is the individual characteristics including age, sex, education, average level of computer literacy and academic major; and, the second part includes 46 items that were the factors influencing establishment and the development of e-learning in the Literature and Human Sciences College of Takestan Azad University.

**RESULTS AND DISCUSSION**

**Factorial analysis of the barriers and limitations in the operation and expansion of e-learning**

Factorial analysis is a general name which is used for some multivariate statistical methods and its main purpose is to summarize the data. This is one of the interdependent techniques and all variables are considered simultaneously. Factorial analysis, due to strong, elegance and its proximity to the scientific core, is considered the queen of analytical methods (Kurlinger, 1986). The main purpose of factorial analysis is to identify underlying factors or variables. In this regard, the common variables are identified with the same variance and then they are named by the researcher. It should be noted that regarding the high capability of this technique in analyzing the data, there is not the possibility of using them in every situation. The data used for factorial analysis should have the necessary qualifications. For this purpose, the Bartlett test and KMO coefficient are used. If KMO value is greater than 0.5, factor analysis can be used for sure. The coefficients for the questionnaire of faculty members equals to 70 which is an acceptable figure (table 2). Bartlett's test equals to 0.000 which shows that it is statistically significant at 99% level.

*Table 2: KMO and Bartlett's test coefficient for faculty members*

	value	Test type
	49.018	KMO
	1.439	Bartlett's
	0.00	Sig

After we ensured that the data is proper to perform the factorial analysis, the rotation varimax norm is used to achieve the significant factors. The extracted factors are indicated in table 3. Collectively, these factors explain 49.018 % of the variance related to affecting variables on the barriers and constraints on the development of e-learning. In simple terms, considering these seven factors could explain 49.018 percent of the effective factors in the creation, obstacles and limitations in the launch and development of e-learning in the university.

It must be explained that, among the total of variables, 17 factors are excluded from the factorial analysis process due to the low load factor and lower impact.

*Table 3: The number of extracted factors with eigenvalues, percentage of variance and cumulative percentage*

No.	Factor name	Eigenvalues	Variance percentage of Eigenvalues	Cumulative percentage
1	Deficiency of executives	21.437	14.683	14.683
2	Restriction of credit	24.905	7.001	21.684
3	infrastructural barriers	31.257	6.556	28.241
4	Cultural barriers	36.430	5.610	33.850
5	Educational barriers	41.733	5.399	39.249
6	human barriers	46.635	5.059	44.308
7	Technical barriers	51.185	4.710	49.018

Status of loading factors after rotation based on variables with loadings larger than 0.5 is shown in the table 4.

*Table 4: Variables related to each of the factors influencing barriers of the development of e-learning and factor loadings obtained from the rotated matrix*

Priority	Factors Name	Variables	Factor loading
1	Deficiency of executive factor	low potential for evaluating progress in learning courses	0.681
		low e-learning system for the continuity of learning activities by faculty members	0.536
		low e-learning system in terms of providing feedback by the faculty members	0.679
		the low level of the learner or instructor permission to change the presentation of the course	0.547
		low rates of encourage for e-learning system in the relationship between the learner and teacher	0.664
		lack of full cooperation of the Ministry of Science and the Ministry of Communications and Information Technology	0.573
		insufficient faculty expert regarding the new educational technologies	0.557
2	Credit constraints	the high costs preparation and production of material for the content of e-learning and updating them	0.732
		high cost of Internet service	0.710
		lack of funds for the development of e-learning in universities	0.750
		deficiency or absence of local manufacturing facilities, and components required for e-learning	0.836
3	Infrastructure barriers	limited access to computers and online communication with faculty members	0.554
		low speed internet and the actual bandwidth	0.797
		lack of coverage of optic fiber in the entire country	0.669
		fluctuation in Internet speed and lack of real speed	0.808
4	Cultural constraints	lack of development of e-learning at high management level and those involved in educational planning	0.545
		lack of necessary policy to certify or endorse the content, quality and structure of electronic courses in universities	0.662
		lack of giving priority to the e-learning in the comprehensive program of ICT development in the country	0.707
		lack of attempt of administrators for culture-building in developing e-learning in the countries	0.703
5	The educational limitations	lack of enough training in the field of educational technology for the faculty	0.545
		unfamiliarity of planners and administrators with the concept of e-learning applications	0.554
		stakeholders' opposition with e-learning methods	0.673
		unfamiliarity of faculty with methods of communicating with students using e-learning	0.677
6	human limitations	requiring a lot of time preparing the students	0.686
		faculty resistance to change and their worries regarding electronic technology	0.673
		lack of experienced faculty on the e-learning and e-teaching units	0.556
7	Technical limitations	lack of technical and administrative support to maintain e-learning equipments	0.591
		possible limitations of laboratory sessions through e-learning	0.515
		lack of policy for the implementation and appropriate strategic management of the development of educational technology in universities	0.507

As it can be seen, 7 key factors cause barriers and limitations in the development of e-learning.

**First factor (Deficiency of executives):** This factor explains 14.683 percent of total variance of barriers and constraints in the implementation and development of e-learning and it is the top priority. There are 7 factors with the loading factors greater than 0.5 which are presented below: low potential for evaluating progress in learning courses; low e-learning system for the continuity of learning activities by faculty members; low e-learning system in terms of

providing feedback by the faculty members; the low level of the learner or instructor permission to change the presentation of the course; low rates of encourage for e-learning system in the relationship between the learner and teacher; lack of full cooperation of the Ministry of Science and the Ministry of Communications and Information Technology regarding the development of electronic learning; and finally, insufficient faculty expert regarding the new educational technologies.

**Second factor (Restriction of credit):** This factor explains 7.001 percent of total variance of barriers and constraints in the implementation and development of e-learning and it is the second priority. There are 4 factors with the loading factors greater than 0.5 which are presented below: the high costs of preparation and production of material for the content of e-learning and updating them; high cost of internet service; lack of funds for the development of e-learning in universities; deficiency or absence of local manufacturing facilities, and components required for e-learning.

**Third factor (infrastructural barriers):** This factor explains 6.556 percent of total variance of barriers and constraints in the implementation and development of e-learning and it is the third priority. There are 4 factors with the loading factors greater than 0.5 which are presented below: limited access to computers and online communication with faculty members; fluctuation in internet speed and lack of real speed; lack of coverage of optic fiber in the entire country; low speed internet and the actual bandwidth.

**Forth factor (cultural barriers):** This factor explains 5.610 percent of total variance of barriers and constraints in the implementation and development of e-learning and it is the forth priority. There are 4 factors with the loading factors greater than 0.5 which are presented below: lack of development of e-learning at high management levels and those involved in educational planning; lack of necessary policy to certify or endorse the content, quality and structure of electronic courses in universities; lack of giving priority to the e-learning in the comprehensive program of ICT development in the country; lack of attempt of administrators for culture-building in developing e-learning in the countries.

**Fifth factor (educational barriers):** This factor explains 5.399 percent of total variance of barriers and constraints in the implementation and development of e-learning and it is the fifth priority. There are 4 factors with the loading factors greater than 0.5 which are presented below: unfamiliarity of faculty with methods of communicating with students using e-learning; unfamiliarity of planners and administrators with the concept of e-learning applications; lack of enough training in the field of educational technology for the faculty; stakeholders' opposition with e-learning methods.

**Sixth factor (human barriers):** This factor explains 5.059 percent of total variance of barriers and constraints in the implementation and development of e-learning and it is the sixth priority. There are 3 factors with the loading factors greater than 0.5 which are presented below: requiring a lot of time preparing the students; faculty resistance to change and their worries regarding electronic technology; lack of experienced faculty on the e-learning and e-teaching units.

**Seventh factor (technical barriers):** This factor explains 4.710 percent of total variance of barriers and constraints in the implementation and development of e-learning and it is the seventh priority. There are 3 factors with the loading factors greater than 0.5 which are presented below: lack of technical and administrative support to maintain e-learning equipments; possible limitations of laboratory sessions through e-learning; lack of policy for the implementation and appropriate strategic management of the development of educational technology in universities.

### **Discussion**

The results of the research show that the following seven factors are considered as e-learning development restrictions and limitations in developing countries, especially in Iran:

1. *Deficiency of Executive Factors:* Cumbersome rules, the absence of a specific organization or institution as a custodian to set up e-learning courses, and lack of adequate support for holding such courses are considered as 'Deficiency of Executive Factors'.
2. *Lack of learners' motivation:* Learners are not motivated enough to enter and study e-learning courses due to sufficient knowledge about e-learning courses.
3. *Credit constraints:* E-learning development requires sufficient funds.
4. *Infrastructure limitations:* IT infrastructure in Iran are both outdated and inefficient and it should be developed and updated.

5. *Technical barriers*: These barriers include lack of optical fiber, electronic components and telecommunication devices.

6. *Human barriers*: In this category, there is a shortage of skilled manpower to launch e-learning courses.

7. *Software and hardware limitations*: accessing and supplying of software and hardware equipments is a complex task in Iran.

These factors are considered as e-learning development barriers and limitations in Iran as a developing country. Seemingly, if these limitations are managed and handled, e-learning development will be facilitated.

## **CONCLUSION**

New technologies have great potential to transform and shape teaching and learning activities to all higher education institutions and they provide tools to design modern scientific environments which have never been possible before. For this reason, many universities in Iran want to set up e-courses using information technology capabilities in the form of e-learning or online learning. However, the review of literature shows that the development of e-learning in educational systems is faced with many problems which unfamiliarity of policymakers and educational planners with such problems can impose heavy costs on educational institutions.

This paper aims to familiarize planners, policy makers, students and faculty members with the e-learning issues in higher education. It was found that strengthening and developing telecommunication infrastructures in educational institutions and providing access to information networks in such institutions is one of the important steps in the development of e-learning; because effectiveness of e-learning depends on the reliability and accessibility of hardware and software. And, lack of good telecommunication infrastructures severely affects the relationship between the learner and the educational system. Therefore, funding for facilities and e-learning tools for universities is a serious necessity.

Investments in human resources training and training of skilled manpower are another important issue in the development of e-learning. Because development of e-learning will fail without a skilled and capable workforce and resistance of traditional training will be increased and finally, the way of approaching information technology to higher education will be harder. In addition, the nature of academic courses must be considered carefully before e-learning implementation. E-learning cannot be replaced by traditional training. E-learning should be focused on courses and subjects that traditional education system is unable to respond to them. Finally, we can say that to overcome the barriers of e-learning development at universities and educational institutions a holistic and integrated approach is needed. The policies to orient and provide the necessary resources to facilitate the development of long process of e-learning should be determined.

## ***Recommendations***

1. The users' skills knowledge of English language and mastering of software, hardware and network are necessary factors for development of web-based training in Iran. Before planning for e-learning development, students' familiarity and mastery of computer skills and workshop attending will be indispensable.
2. Since the shortage of qualified, proficient and competent e-learning teachers and experts in the field of electronic content production is obvious, it seems that training of interested teachers and experts is essential.
3. Currently, software and educational content furthermore material for e-learning development have not been developed yet in many academic disciplines. Necessary steps should be taken in this regard.
4. Based on the research findings, low speed and inappropriate connection are the main problems in the development of e-learning. Accordingly, communication infrastructures in Iran must be fostered.

## ***Research Limitations***

Possible limitations of the study will be as follow:

- the restriction of access to information on the characteristics of the hardware and telecommunication infrastructure facilities of Takestan
- the restriction of access to information on the characteristics of the hardware and telecommunication infrastructure facilities of Takestan Azad University

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