CHALLENGES AND STRATEGIES FOR E-LEARNING DEVELOPMENT IN THE PAYAME NOOR UNIVERSITY OF IRAN

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ABSTRACT

Higher education in Iran is confronting with several challenges; some of them are increasing demand for education and insufficiency of current programs to meet the growing needs, emerging information age and the necessity of achieving information literacy, and extending educational justice. It is assumes that a high performance e-learning system can overcome to the mentioned problems. It removes time and place restrictions and creates economical benefits, and makes available lifelong learning opportunity for all. The primary purpose of this study was to identify challenges of electronic learning development in Payame Noor University of Iran to present feasible solutions for establishing a suitable e-learning system. Descriptive survey design for data collection was adopted in this study. The population of this study was consisted of 600 instructors and faculty members.

A sample of 160 faculty member was selected by using random sampling method. Results show that barriers such as incompatibility of contents and methods, skill unavailability, attitudinal hampering, cultural barriers, infrastructural obstacles, encouraging and credit barriers as well as barriers related to incorporating e- learning into traditional education systems were the main challenges of e-learning in the Payame Noor University.

Also results revealed that factors such as educational effectiveness in e- learning, policy making, university's technical and social support of e- learning, financial support and expansion of income earning for instructors and faculty members, improving working conditions, foreign language skill and faculty members interest in professional development were the most important factors in developing e-learning in Payame Noor university of Iran.

Keywords: **E-learning; Payamee Noor University; Development; Challenges and strategies for e-learning Development in the Payame Noor University of Iran**

INTRODUCTION

The world stepped into the age of information with the arrival and development of information technologies worldwide and their subsequent impacts on all sides of human life including economics social and cultural sides. The progresses made in the information technologies have created many changes in the areas of teaching and learning, contributing to the formation of a new kind of teaching and learning termed as "E-learning".

Simultaneous with the arrival of these technologies and alongside with the new achievements in the science of learning, the teaching sector has created opportunities for the development of setting for holistic–based, attractive interactive, flexible and accessible E-learning (khan, 2005). It is worth while to mention that permanent pressures from both inside and outside of the higher education society, encourages using information technology. On the other hands, turning to online education without planning is like stepping into a tortuous path in the darkness. The new form of online education and the disappearance of the boundaries and limitations of education apart from increasing the enthusiasm in the education authority have culminated in an increase in their concerns. In addition to observing qualitative standards of the contents of the e-books, the contents of the courses also should be such that they are offered in the best possible way in light of the educational standards. Different structures for learning management systems, the existence of idiosyncrasies in designing electronic courses, different methods for testing and educating , the decrease in the physical contacts between the tutors and tutees all have made it necessary to conduct a comprehensive study and policy making in online education (Kardan and Fahimifar , 2008).

LITERATURE REVIEW

The studies in the recent two decades on the challenges for development of electronic universities showed that lack of desirable software and hardware possibilities, the costs of access to internet, limitation in band width, low speed of internet, and late responses are among the main obstacles agreed upon unanimously by the researchers and experts. (Zhang *et al.*, 2002; Nordheim and connars , 1997; Shea *et al.,* 2005; Jansen van Vuuren and Coetzeer ,2004; Parker, 2002; song *et al* . 2004; Grant ,2004 ; Murphy and Dooley ,2000 ; Anstead *et al.,* 2004; Wilson and Moore , 2004).

Some researchers such as Anstead *et al.* (2004), Mcpherson and Nunes (2004), Miller & Miller (2000), Kelsey *et al.* (2002) and Gulati (2008) have mentioned the following factors as the main obstacles for E-learning development temporal distance between the teachers and students, the way to create motivation in the students for initiating & continuing electronic courses, the disability of the students in understanding the goals of online courses due to the absence of the teachers, lack of computer knowledge in the students and the teachers, Lack of experience in the faculty members in the realm of education technology.

Problems such as the methods to select students, lack of standards in E- Learning, low fees for the faculty members, lack of educational settings equipped with new technologies, the methods to evaluate the students and spiritual ownership (Patent) of the materials and courses are some other obstacles for the development of E-learning identified by the researchers (Arabasz *et al*, 2003; Shea *et al*, 2005)

As to strategies of E-learning in IRAN, seven obstacles including skill hampering, access problems, lack of fitness between content and methodology, incentive-validity obstacles, psychological hardships, Organizational – legal and cultural – social barriers have been identified as obstacles for E-learning in science and practice institutes by Mohammadi (2009). Furthermore , as to the obstacles for E-learning in higher education of agriculture, the perspectives of students show that lack/shortage of designed facilities for adaptation with new technologies , Students' limited access to computer and suitable connection line and some specific problems to Iran's telecommunication were the main infrastructural obstacles in development of E-learning. Also, impracticality of lab sessions through E-learning, lack of training in educational technologies among the students, lack/shortage of incentives for education through E-learning have been identified as the main educational – executive obstacles.

On the other hand, insufficiency of specializing faculty members in ever-growing new educational technologies, unfamiliarity of the evolved authorities with the usages of E-learning, lack of commitment in the faculty members for spending a time for learning through technologies have been identified as human obstacles.

And finally, low investment and funding, high costs for the facilities of educational technology and high cost for updating the contents were the most important financial obstacles for development of E-learning (Rezaei, 2009)

Regarding the effective factors in development of E-learning, many researches have been conducted. According to Selim (2007), Macpherson *et al.* (2004), and Maise (2007) studies, providing technical support (how to use) and guidance (by the teachers) have a positive effect on the tendency to use and get involved in E-learning. On the other hand, lee (2006) and Carter and Belanger (2005) found that provided supporting and facilitating of E-learning methods leads to an increase in its application .Katz (2008) in his study as the psychological aspects of using learning technologies in remote education found that the students' psychological attitudes facilitate differently effective use of learning approaches.

Other studies show that factors such as technology (band width , hardware validity , network security and network accessibility), interaction (communication and degree of interaction) , instructor (attitudes towards the learners , technical qualification of the instructor and class interaction), the qualities of the student (the skill to operate with computer, interactive cooperation , content and syllabus of E-learning course) and using of technology were the key factors to successful E-learning (Selim , 2007, Baylor & Ritches , 2002, volery,2000). As to the researches carried out in Iran, yaquoobi's study (2009) on effective factors in success of E-learning showed that suitable contents , availability of information technology infrastructures , using a suitable software , and choosing suitable educational media were the effective factors on the success of E-learning system from the perspective of online education students. Furthermore, Mohammadi (2009) in his study on components of E-learning system in scientific – practical education of agriculture in Iran found that the instructors had a positive attitude towards E-learning. In this study, factor analysis of E-learning incentives in scientific – practical education of agriculture resulted in identifying six factors including :

- **empowerment-access incentive ,**
- **social-political incentives,**
- **financial-technical incentives,**
- **improving effectiveness incentives**
- **professional development incentives,**
- **personal incentives.**

RESEARCH OBJECTIVE

The purpose of this study was to identify and analyze the challenges and strategies of E-learning development in Payame Noor university of Ardabil province from the perspective of professors and faculty members. The specific goals of the study were consist of:

- **To identify the personal and professional characteristics of the professors and faculty members of PAYAME Noor university.**
- **To identify the obstacles and the deterrent factors of E-learning from the perspective of professors and faculty members of Payame Noor university.**
- **To identify promoter factors of E-education from the perspective of the professors and faculty members of Payame Noor University.**

METHODOLOGY

The present study is quantitative in terms of its nature and non – experimental in terms of the degree of the variables and practical in terms of its goals.
It has been carried out in the form of descriptive- correlative.

The faculty members and visiting professors of Payame Noor University in Iran constitute the statistical population of this research (N=600). A number of 160 professors were selected as a sample by using randomized sampling method and Cochran's formula. To collect required data a questionnaire on E-learning that designed by Mohammadi (2009) was used. Content and face validity of the instrument was accomplished by a panel which consisted of the experts and professors of Tehran University. A pilot test was conducted to determine the reliability of the questionnaire, and Cronbach's Alpha coefficient was confirmed for the scales of the questionnaire (α= .87). To analyze data, factor analysis and descriptive statistics items (mean, mode, frequency, percentage, and standard deviation) were used.

FINDINGS AND DISCUSSION

Personal and professional characteristics of the respondents:
According the findings of the research, the mean age of the participants was 32 and the highest frequency belonged to those aged 27, which showed that the population under study was young. The majority of the understudy populations, (75%) were men and only 25% of them were women.

Investigating their fields of study showed that 36.7% of them were basic sciences, 49.3% of them in humanities and 14% of them in mechanics and engineering. As to education level, 89% of the respondents were in MA/MSC and the rest were in PhD. Investigating the academic position of the people under study showed that 77.3 % of them were lecturers, 9.2% were in the same level as faculty members, 10.9% were faculty members, and 2.5% were experts. That 49.3 percent of them were graduated from state universities, 45.5 percent from Islamic Azad University. 3.9 percent from Payame Noor and 1.3 percent of them were graduated from overseas universities. Other findings of the research showed that about 80 percent (81.1%) of respondents lacked personal website and only 18.9 percent of them had personal website. Furthermore, 25 (17.2 percent) of them had embarked upon blogging and that 120(88.2 percent) of them were not active in blogging. Their professional characteristics were as follows (Table: 1)

Table: 1
Professional characteristics of the professors and the faculty members of the PAYAME Noor University in Ardabil province

Attribute	Mean	Standard deviation	Mode	Minimum	Maximum
Precedence of teaching in Payame Noor centers	3.34	3.79	1	1	30
Precedence of teaching in other educational centers	3.64	4.8	0	0	30
Average the number of taught credits	9.01	3.9	10	2	20
Number of presentations in national seminars in 5 recent years	1.8	2.93	0	0	20
Number of presentations in international seminars in 5 resent years	0.3	0.94	0	0	5
Number of done or under way research projects	1.18	1.63	0	0	10
Number of papers (scientific-research)	1.24	2.71	0	0	25
Number of papers (extension-research)	0.43	1.31	0	0	13
Number of published papers in conferences	1.55	3.57	0	0	21
Average internet use during the week	11.59	11.16	10	0	80
Average internet use per day	3.8	3.23	2	0	18

Factor analysis of deterrent factors of E-learning from the perspective of the professors and faculty members of the Payame Noor University.

To determine the deterrent factors of E-education development in Payame Noor University, the intended variables underwent factor analysis. Based on the obtained data, the amount of KMO was .808 and the fixed amount was 2294.651 which were significant in the level 1 percent. This showed that the data were suitable for factor analysis (Table: 2).

Table: 2
Extracted factors whit Eigen value Criterion, percentage of variance criterion and cumulative percent frequency variance

Row	Factors	Eigen value Criterion	Percentage of criterion variance	Percentage of Cumulative variance
1	Factor 1	4.160	11.554	11.554
2	Factor 2	4.023	11.176	22.730
3	Factor 3	3.881	10.780	33.510
4	Factor 4	3.198	8.884	42.394
5	Factor 5	2.906	8.072	50.466
6	Factor 6	2.545	7.070	57.536
7	Factor 7	1.538	4.273	61.809

According to the data in table 2, the highest Eigen value Criterion belongs to factor 1 which is 4.160. It is indeed equivalent to 11.554 percent of explained variance .by this factor. The amount of Cumulative percent frequency variance by these 7 factors was 61.809 which showed that the variables in these 7 factors constitute 62 percent of changes relating to the deterrent factors of E-learning development in Payame Noor. The remaining variance is relating to factors unpredicted in this research. In the next stage, the factors were rotated by using the method of varimax; the variables related to each factor were identified and then classified.

The results have been shown in Table : 3.

Table: 3
The related variables to each obstacle factors and the rate of factor loading obtained by the rotation matrix.

Name of factor	Variable	Factor Loading (Coefficients Rate)
fitness between method and content	Lack of fitness between E-education and the goals of the courses	863%
	Lack of fitness between E-education and the content of the courses	816%
	Concern about practical nature of some courses and impossibility of their offer in electronic form	553%
Obstacles for accessibility – skills	Insufficient computer skills among the instructors	737%
	Limited access of the students to computer in educational centers	723%
	Limited knowledge of the students about computer	715%
	Limited access of the instructors to computer in educational centers	703%
Obstacles of attitude	Negative attitudes of faculty members/reluctance to accepting modern technologies	832%
	Lack of need feeling (limited student market)	776%
	Lack of interest among faculty members	674%
Cultural obstacles	Lack of obligation for having computer knowledge	774%
	Not feeling comfortable with technology	588%
	Concern about ethical issues in using internet	568%
Validity incentive obstacles	Insufficient reward given time and efforts made for E-education by instructors	713%
	Professional invalidity of teaching for instructors in E-education	635%
	Invalidity of incentive research in costs spent for E-learning	635%
	Insufficient support by the colleagues	590%
Infrastructural obstacles	Limited infrastructure for supporting of technology usage for E-learning	623%
Obstacles to combining E-education with traditional education	Complexity of combining E-learning with class education	748%
	Unfamiliarity of the students with the English language	629%

Factor analysis of propelling factors of E-learning from the perspective of the professors and faculty members of Payame Noor University.

In order to determine the effective factors in E-learning development in Payame Noor University, the clarificated variables underwent factor analysis.

According to the obtained data, the amount of KMO was .880 and the fixed amount was 1550.569 which were significant in the level of 1 percent.

This shows that the data were suitable for factor analysis. Table: 4 shows the number of factors and their specification.

Table: 4
Extracted factors whit Eigen value Criterion, percentage of variance criterion and cumulative percent frequency variance

Row	Factors	Eigen value Criterion	Percentage of criterion variance	Percentage of Cumulative variance
1	Factor 1	4.953	21.537	21.537
2	Factor 2	3.205	13.936	35.473
3	Factor 3	2.688	11.687	47.160
4	Factor 4	1.983	8.622	55.782
5	Factor 5	1.283	5.576	61.358
6	Factor 6	1.230	5.350	66.708

According to the data in table 4, the highest Eigen value Criterion belongs to factor 1 which is 4.935 that it is indeed equivalent to 21.537 present of variance explained by this factor.

The amount of cumulative variance explained by these six factors is 66.708 altogether, which shows that the available variables in these six factors constitute 67 percent of the changes relating to incentive and propelling factors of E-learning development in Payame Noor.

The remaining variance is relating to the factors unpredicted in this research. In the next stage, the factors were rotated by varimax method and the variables relating to each factor were identified and then classified.

The results have been reported in Table: 5.

Table: 5
The related variables to each obstacle factors and the rate of factor loading obtained by the rotation matrix

Name of factor	Variable	Factor Loading (Coefficients Rate)
Educational effectiveness in E-learning	Developing the supporting culture for E-education in Payame Noor center/units	780%
	Access to the required equipment and software for E- learning.	770%
	Shift of educational approach from teacher-orientedness to facilitating and holistic approaches	678%
	Holding workshops on E-learning for the instructors of the centers	759%
	Using E-learning for improving quality of Teaching Safeguarding the right to spiritual	706%
	patent and copy right in producing new educational materials.	691%

	Supporting and encouraging the director of the center/unit	787%
	Flexible work conditions (in terns of	738%

Policy making , technical and social support from the university for E-Learning	place and time) in E-learning Supporting the colleagues in the center/unit	717%
	Technical , management support by the center/unit	697%
	Paying much attention to E-education courses in the policy makings of the university	634%
	Codifying specific regulations to E-education in Payame Noor center/units	606%
Financial support and paving the ways to increase the incomes of the faculty members and the instructors	Financial support for the instructors for participating in E-learning courses (salary and overtime payment)	693%
	Increasing job satisfaction of the instructors	662%
	Allocating required funds for developing E-learning	620%
	The chance to job opportunities in other institutes viewing the method of remote education in E-education	503%
Motivation and tendency to professional promotion among faculty members and instructors of Payame Noor university	Personal interest of the instructor in using information technology	709%
	Participating in E-learning as a factor for professional promotion	669%
	Over learning of the instructors (professional development)	74%
Familiarity with foreign language	Familiarity with English language	842%
Improvement of work condition	Decrease in the obligatory teaching hours	841%

CONCLUSION AND RECOMMENDATIONS

As mentioned earlier, E-learning in the recent age of information has found its assumed identity and position. Oh the other hand, its application and development is faced with challenges and obstacles which involve identifying, removing and codifying optimal policies. According to the obtained results, lake of a culture to support E-learning, unfamiliarity of the students with English language, limited access of the students to computer and lack of a research fund were the most important deterrent factors of E-learning in Payame Noor university which are in accordance with the findings of other researches such as Rezaei (2009), Nordheim and connars (1997), Shea *et al.* (2005). Grant (2004), Murphy and dooley (2000) , Anstead *et al* (2004), zhang *et al* (2002), Wilson and moore (2004), petrides (2002) , Gulati (2008,), Mcpherson and nunes (2004), Miller and Miller (2000) , Kelsey etal ., (2002), and Takalani(2008).

Other finding of the research showed that Six factors including Education effectiveness, policy-making , technical and social support of the university for E-learning , financial support and paving the ways to increase the incomes of the faculty members and instructors, improving work conditions , familiarity with foreign language and finally motivation and tendency of the faculty members of Payame Noor university to professional promotion were the most effective factors in applying and developing E-learning in Payame Noor university , which is in parallel to the findings of other researchers such as Carter & Belanger (2005), Volery (2000) , Baylor & Ritchie (2002), Selim (2007) and Macpherson *etal* (2004).

Given the findings of the present research, the following solutions were suggested:

- **In order to remove the obstacles for E-learning given the lack of a culture to support E-learning, unfamiliarity of the students with English language, students' limited computer knowledge, students ' limited access to computer, it is suggested that some investments be made including grounding for removing cultural obstacles, planning for improving students' computer and English knowledge, equipping the units and the centers with high – speed computer sites.**
- **Viewing the fact that cultural obstacles in applying E-learning have a negative impact on the mutual and permanent communication between the students and the instructors and the legal and spiritual support for output and input of E-learning system, it is suggested that necessary groundings for cultural development in using E-learning be made.**
- **The infrastructural obstacles create some problems in effective application of E-learning and also in mutual permanent communication between the students and the instructors. So, It is suggested that suitable infrastactures (such as suitable band with for internet) be set up for E-learning.**
- **Given the results of factor analysis of deterrent factors of E-learning, it is necessary that the instructors' attitudes towards E-learning get changed and the required investments for training skillful, powerful and motivated human forces were made.**
- **It is suggested that enough financial, spiritual and professional support for the instructors be provided with the purpose of using E-learning.**
- **It is suggested that some educational courses be held for familiarizing both the students and the instructors with E-learning, working with computer and learning English language.**
- **It is suggested that much more attention be paid to effective factors in E-learning such as policy – making, technical and social support for E-learning, financial support and grounding for increasing the incomes of the instructors and faculty members, improving work conditions, familiarizing the students with foreign language and increase the tendency of the instructors and faculty members of the Payame Noor university to professional promotion.**

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