Journal of Education and Practice
ISSN 2222-1735 (Paper) ISSN 2222-288X (Online)
Vol.4, No.5, 2013

Developing an Evaluation Model for E-Learning in Higher-Education: A Case Study of Payame Noor University

Mehran Farajollahi[1], Hossein Najafi[2], Kamal Nosrati Heshi[3]*, Hossein Mansoori[4], Maryam Sadat Fatemi Hassanabadi[5]

1. Associate Professor , Department of Educational Sciences, Payame Noor University, Po BOX 19395-3697, IRAN
2. Assistant Professor, Department of Educational Sciences, Payame Noor University, Po BOX 19395-3697, IRAN. hossien_najafi@pnu.ac.ir
3. MA. Student in Philosophy of Education, University of Isfahan, Isfahan, Iran
4. MA. Student in Philosophy of Education, University of Isfahan, Isfahan, Iran
5. BSc Student in Theology, University of Isfahan, Isfahan, Iran

* E-mail of the corresponding author: kamalnosrati1367@yahoo.com

Abstract
The purpose of the present research is to develop an evaluation model for e-learning in higher-education in Payame Noor University, for studying this research we use the review of literature and research about Electronic learning through questionnaires and survey of scientific members and statistic analysis of SPSS. Result of this research led to an offering pattern in evaluation of E- learning area with 9 factors and 33 criteria. This pattern also will be use for designing, performance and evaluation of the E- learning in Payame Noor University and other higher education institutes all over the world.
Keywords: E-learning, evaluation, modeling, distance higher-education, Payame Noor University

1. Introduction

21 century is the century of wisdom (Anarinezhad and atel, 2011) and also its century of change from industrial society to Meta industrial and informational society (Najafi, 2012). In this age, information and knowledge are fundamental properties of human being specially universities (Ebadi, 2004). Development of information and communication may cause many challenging in area of teaching and learning for universities, for this reason e-learning is as new educational process in informational age. Human beings are regarded as active-learners that can change all forms of learning and education in the 21 century (Darab and Montazer, 2010).

E-Learning is as fifth generation of media (Ebrahimzadeh, 2007), in offering equip mental learning environment and interactional and learner center also it's considerable for every time, everywhere and every one (Anarinezhad and et al, 2011).

On the other hand most of universities all over the world came to existence with designing and offering program and learning period to meet the increasing demand to education in information and communication technology age, responsibility of universities is not only transferring of knowledge but also spreading and producing are the most important responsibility of universities. This treatment of universities introduce the international organization of universities as a permanent and development center (UNESCO, 1997), on the base of Beet's report in most of developing countries, rate of enrolment in e-learning is more than general development in the higher-education (Betts, 2009), while this proportion enrolment in e-learning period to general enrolment in higher education in US during this period (2002-2007) reached from 9.6 percent to 9.21 percent (Allen and Seaman, 2008). Simultaneous with e-learning spreading in universities and higher-education organization, it's important to take into account evaluation of e-learning and to determine standards to designing and spreading this kind of learning (Anarinejad el.,2011), because evaluation is one of four main dimensions of teaching assay (other three dimensions: goal, method , implementation) (Seyf, 2004) and it's spirit (Maleki, 2004) and for this reason many of educational sketchers and technical experts recently pose a system to evaluate E-learning. for example: Hughes and Attwell (2007) offer a framework for the E- learning evaluation this frame work include 5 variant: learner, learning environment, technology and social, cultural and educational context (Hughes and Attwell, 2007). Beth (2003) says beside of e-learning, the e-learning evaluation is important too and it also includes: program goal, course content, quality of course; designing, interactive, student evaluation and student support level and out comes (Beth, 2003). Chao et al. (2006) research with goal of identity and authentication of main dimensions of e-learning to provision some tools for new learning evaluation and they believe that organizational supports, course progress, learning- teaching process, teacher and student support evaluation, e-learning services are the most important dimensions of it (Chao, 2006). Moreover, the e-learning is a new

phenomenon in the most of countries in all over the world and that's going to expect pervasive and practical use of this manner don't work well. usage of this kind of learning accompany with some challenges like any phenomenon and we can recognize short comings of it through a subtle and regular evaluation system (Anarinejad et al., 2011), most important challenges of e-learning is many factors and effective variants in this area that it could be effected by cultural, social, educational and political factors.

This paper intends to review previous studies and based on the e-learning models and indicators provided by ICT and e-learning theorists, the main aspects of e-learning can be identified, and to the conceptual model for evaluating e-learning courses can be offered in higher distance education system in Payame Noor University. For this reason, e-learning models and frameworks were reviewed the main components were extracted and the initial framework were presented. In the next stage, this framework can be evaluated from the prospective of scientific experts and members of higher education in the field of electronic and to validate with the help of SPPS statistical methods, and to be offered the proposed model for evaluating e-learning system for higher distance education from Iran.

1.1. Nature of E-Learning

Century of wisdom or information technology changed the traditional education into distance education (Ebrahimzadeh, 2006). Distance education include 5 steps: correspondence education, education through radio an T.V, education with CDs, education through computers and e-learning (Atashak, 2007), so last kind of distance education is e-learning. Krass give this term to give an answer to some personal differences and some short comings of traditional education system.

E-learning had defined as use of communication and information technology, electronic tools, produce and management of learning-teaching process that it had organized with learners, instructors, experts and didactic sketchers (Ebrahimzadeh, 2004). E-learning not only caused to communication but also it is main factor to transmit didactic content, on the other hand e-learning is a new educational system to form learning-teaching process with didactic organization, also e-learning makes it easy the learner with instructor to provide sporadic learning and self- assessment (Ebrahimzadeh, 2006). Since a few years e-learning is as a new educational approach in high education has been established, and some researchers have also acknowledged the effectiveness and efficiency compared to traditional education (Najafi, 2009). But here, it is necessary which e-learning to be evaluated systemically and based on previous models.

1.2. E-learning Models

To evaluate the e-learning environment, it is essential to recognize most important factors in e-learning course. To recognize some factors we give some models here and theoretical and practical frameworks that it had been used by universities and scholars (Table 1).

[Insert Table 1 about here]

They evaluated studies about expressed factors and elements the electronic models. In order to design and collection initial general framework for evaluated e-learning in higher distance education, it is necessary to identify the main components forming the e-learning system as the dimensions of evaluation, to the considered factors and criteria so by it can be formulated required data and analysis them. Therefore, this study seeks to answer the following questions:

- Can be formulated general framework for the evaluation of e-learning in high distance education from Iran?
- 2. What are the factors and criteria to ensure e-learning in Payame Noor University?

2. Methodology

In this article we choose four main dimensions that are most commonly used in the literature: (1) scientific models, (2) practicability of models, and (3) its adaptation with the cultural context of Iran. Then we counsel with 40 e-learning experts of higher education in Iran and then we design a primal pattern that most of experts have most agreement on it:

A. **Factors**: Factors include all of elements constitute e-learning evaluation system (Anarinejad et al., 2011). In this research regard to most frequency of elements in e-learning that posed with some experts and institutions 9 dimensions was selected to evaluate e-learning: organizational support, management, technology usage - designing e-learning environment, ethic and legal Consideration, interaction, support services, and assessment factors.
B. **Criteria**: Criteria include sum of phenomenon or systems that are important in judgment (Bazargan, 2002), in this research 33 criteria selected on the base of directorate's opinion. Primal framework of e-

learning evaluation based on these factors and criteria and we do this with questionnaires, here are some of questionnaires. For research about structural factor, coordination of every factor calculated with factors and related criterion, (Table 4) this coordination include positive, high and meaning full coordination include positive, high and meaning full coordination quotient. We were wash whom scientific board and experts in electronic learning, to identity and complete the rat of factor important very of ever crirepon compared with factors or the basis or five degree of likert (from very high to very low).

3. Results

Based on SPSS statistical analysis prevalence rate of faculty members and experts view in e-learning and importance rate of each of the factors and criteria are given in Table 2.

[Insert Table 2 about here]

According to Table 2, most of choices include to dimensions like: student evaluation, institution evaluation, interaction between instructor - learner, interaction learner - learner, interaction learner -content, pay attention to personal differences, base and learner services

To survey structural factors of framework, we calculate correlation between all of dimensions and factors (Table 3) that most of them have high, positive and meaningful correlation coefficient.

[Insert Table 3 about here]

According to the table, correlation coefficient of dimensions with internal factors has above %70 positive and meaningful percentage. Finally, for evaluation validity of pattern (Table 4) we use Cronbach's alpha to internal parallelism of ninth factors.

[Insert Table 4 about here]

In the most cases validity coefficient enjoy highest percentage exception ethic and legal Consideration, on the other hand this test enjoy most authority and representation power in e-learning evaluation area.

4. Conclusion

This essay is going to survey and offering a Conceptual pattern for e-learning evaluation in higher education in Iran, and for offering a pattern at first we survey models and review of literature about e-learning and then some elements and main principle in e-learning was identified. In this research some questionnaires and surveying of some scientific members and IT experts was used. Proposal pattern include criteria and factors: organizational environment, support, management, technology usage, designing learning environment, supporting services, evaluation, ethic and legal consideration and interaction and 26 criteria that in most cases correlation and validity coefficient is above 70 percentage. This proposal pattern is base of designing, codifying and performance of tools and e-learning periods in higher education system in Iran; even it will be used for scientific members of higher education system in other countries as a useful pattern.

Acknowledgement

The authors express their gratitude to the editor of the article and all the people who helped improve this article through their comments.

References

Allen, I. E., & Seaman, J. (2008), "Staying the Course: Online Education in the United States", Sloan Consortium.

Allen, I. E., & Seaman, J. (2008), "Staying the course: Online education in the United States 2008", Newburyport, MA: The Sloan Consortium.

Anarinejad, A. Saketi, P., & Safavi, A. A. (2011), "A Conceptual Framework Development For E-Learning Programs Evaluation At Iranian Higher Education Institutions", *Iranian Journal of Educational Technology*, **4**, 191-201.

Aoki, K., & Pogroszewski, D. (2002), "Virtual University Reference Model: A Guide to Delivering Education and Support Services to the Distance Learner", *Online Journal of Distance Learning Administration*, **1**.

Atashak, M. (2007), "Theoretical and Applied Principles of Electronic Learning", *Quarterly Journal of Research and Planning in Higher Education*, **13**, 135-156.

Attwell, G., & Hughes, J. (2002), "A Framework for the Evaluation of E-Learning", Paper presented at European Conference for Education research, Lisbon, September 2002.
Bazargan, A. (2002). Education Evaluation. Tehran: SAMT.
Betts, K. (2009), "Online Human Touch (OHT) Training & Support: A Conceptual Framework to Increase Faculty Engagement, Connectivity, and Retention in Online Education, Part 2. Merlot: Journal of Online Learning and Teaching, **5**, 29-49.
Chao, T., Saj, T., & Tessier, F. (2006), "Establishing a Quality Review for Online Courses", Educause Quarterly, **29**.
Darab, B., Montazer, G. (2010), "Evaluation of the Adoption of E-Learning in Iranian Universities: A Case Study in Tarbiat Modares University", *Iranian Journal of Educational Technology*, **4**.
Ebadi, R. (2004), "Electronic Learning and Education", Tehran: Aftabe Mehr.
Ebrahimzadeh, I. (2001), "The Transition from Traditional Distance Education to Virtual Education: Innovation and Challenges Posed by Change", *Iranian Journal of Research and Programming in Higher Education*, **1**, 7-14.
Ebrahimzadeh, I. (2001), "The Teaching-Learning Process in Future Open and Distance Universities", *Iranian Journal of Peyke Noor*, **2**.
Ebrahimzadeh, I. (2006), "Education Based on Information and Communication Technology: Conceptual Queries", *Iranian Journal of Research and Programming in Higher Education*, **4**, 5-25.
Keegan, D. (1996), "Foundations of Distance Education", London: Routledge.
Khan, B. H. (1997), " Factors to Consider When Evaluating a Web-Based Instruction Course: A Survey", In B. H. Khan (Ed.), Web-based instruction (pp. 375380). Englewood Cliffs, NJ: Educational Technology Publications.
Khan, B. H. (2001), "A framework for Web-based learning", In. B. H. Khan (Ed.), Web-based training. Englewood Cliffs, NJ: Educational Technology Publications.
Maleki. H. (2005), "Curriculum Development: A Practical Guide", Mashhad: Payame Andishe.
Najafi, H. (2008), "The Effect of IT Curriculum Development", *Payame Noor University Publications*, **6**.
Najafi, H. (2012). The Effect of Information Technology on the Teaching-Learning Process. *Payame Noor University Publications*, **9**.
Seok, S., Meyen, E., Aust, R., Fitzpatrick, M., & Newberry, B. (2006), "Three Dimensions of the Online Course Evaluation Instrument in Post-Secondary Education", Proceedings of the Ninth International Conference on Computers and Advanced Technologies in Education.

Table 1. E-Learning Models

Model		Factors, Elements and Programs of E-Learning
Keegan	1996	1- teaching-learning separation 2-interaction 3- technology usage 4- sporadic learning 5- educational supporter organization
Aoki and Pogroszewski	1998	1- Administrative services 2- collegian services 3- source services 4- professor services
Khan	2001	1- organization 2- technology 3- designing control linkage 4- evaluation 5- source support 6- management 7-morality
Simonson	2001	1- goal of courses 2- course content 3-quality of course designing 4- kind of interaction 5- learner evaluation 6-student support 7- out comings
California University	2002	1- organizational commitment 2-technology base 3- collegian service 4-course designing and course spreading 5- professor training and their services 6- giving programs 7- Financial safety 8-legal commitments 9- program evaluation
Govindasamy	2002	1- organizational support 2- period expanding 3- teaching-learning process 4- course structure 5- student support 6- professor support 7- evaluation
Anderson	2002	1- Base of technology 2-course content 3-pay attention to cultural context 4- Financial source 5- human being source
Frozen	2005	1- organizational factors 2- technology factors 3- factors that are relevant to professor 4- factors that are relevant to students 5-factors for educational designing
NACOL	2006	1- content 2- education designing 3- student evaluation 4- technology 5-management and evaluation of periods
Souk and Meyer	2006	1- organizational affection 2- learning affection 3- interaction 4- education designing 5- source of information 6-evaluation 7- skills of 21 century
Chao et al.	2006	1- Organizational support 2- designing and expending of educational courses 3- learning-teaching process 4-sources and course structure 5-student and professor support 6-evaluation 7-technology usage 8- services for E- learning
Illinois Online Network University	2007	1- educational designing 2-intera-ction and communication 3-student evaluation 4- source and collegian services 5-web designing 6-course evaluation

Table 2. Frequency and Percentage of Expert's Opinion on Internal Validity

Factors	Criteria	Frequency Percentage and Validity of factors and criterions		
		High and very high	Medium	Low and very low
Infrastructure	Technical	87	18.3	3.7
	Humanity	91.2	27.7	1.4
	Physical	75.3	4.7	3
Educational organization support	Ministerial affair	62.4	12	24
	Educational affair	2.1	3.2	14.7
	Other services	100	-	-
management	Content management	96	4	-
	educational management	73	21.7	5/3
	maintenance and distribution management	62.2	12.6	24.2
Technology Usage	Base	100	-	-
	Hardware	92.3	7.7	-
	Software	98.1	1.9	-
Support services	Online support	97	3	-
	Online	86	14	-
	Offline	74.2	15.8	-
Ethical and legal considerations	Paying attention to personal differences	100	-	-
	Educational regulation	86.1	13.9	-
	Legal affair	74.3	12.4	3.7
Interaction	Learner-Teacher	100	-	-
	Learner- Learner	100	-	-
	Learner-Content	100	-	-
	Teacher-Learner	94	2.8	2.3
	Teacher-Content	97.1	2.2	0.70
	Content-Content	98	2	-
	Learner-Medium	99	1	-
Education environment designing	Determining goals	81.1	19.9	-
	Determining content	68.5	22.5	9.7
	Determining procedure and media	88.2	11.8	-
	Organization learning Principle	83.9	16.1	-
Evaluation	Student evaluation	100	-	-
	Professor evaluation	69.7	29.3	-
	Content evaluation	87.1	22.3	-
	Institution evaluation	100	-	-

Table 3 – Correlation coefficient value of dimensions with relevant internal factors

Factors	Dimensions	Correlation Coefficient
Infrastructure	Technical	%83
	Humanity	%91
	Physical	%71
Educational organization support	Educational affair	%62
	Educational affair	%51
	Learners services	%74
Management	Content management	%82
	Educational management	%74
	maintenance and distribution content management	%64
Technology usage	Base	%87
	Hardware	%96
	Software	%91
Support services	Online support	%93
	Online	%84
	Offline	%81
Ethical and legal considerations	Paying attention to personal differences	%96
	educational regulation	%83
	legal affair	%74
Interaction	Learner-Teacher	%96
	Learner- Learner	%94
	Learner-Content	%87
	Teacher-Learner	%91
	Teacher-Content	%84
	Content-Content	%97
	Learner-Medium	%93
Interaction	Determining goals	%84
	Determining content	%76
	Determining procedure and media	%84
	Organization-learning Principle	%74
Evaluation	Student evaluation	%91
	Professor evaluation	%84
	Content evaluation	%93
	Institution evaluation	%92

Table 4 – Cronbach's alpha value for nine factors of proposed model

Factors	**alpha coefficient**
Infrastructure	%75
Educational organization	%62
Management	%87
Technology usage	%96
Support services	%74
Ethical and legal Consideration	%58
Learning environment designing	%97
Interaction	%94
Evaluation	%88

This academic article was published by The International Institute for Science, Technology and Education (IISTE). The IISTE is a pioneer in the Open Access Publishing service based in the U.S. and Europe. The aim of the institute is Accelerating Global Knowledge Sharing.

More information about the publisher can be found in the IISTE's homepage: http://www.iiste.org

CALL FOR PAPERS

The IISTE is currently hosting more than 30 peer-reviewed academic journals and collaborating with academic institutions around the world. There's no deadline for submission. **Prospective authors of IISTE journals can find the submission instruction on the following page:** http://www.iiste.org/Journals/

The IISTE editorial team promises to the review and publish all the qualified submissions in a **fast** manner. All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Printed version of the journals is also available upon request of readers and authors.

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar