

An assessment on preparedness of students of Hamadan University of Medical Sciences in terms of participation in electronic learning system

Nafiseh Rezaei*

Department of Medical library and Information Science, Para medicine Faculty, Hamadan University of Medical Sciences, Hamadan, Iran

*Corresponding Author

Shahla Noornejad

Department of Medical library and Information Science, Public Health Faculty, Hamadan University of Medical Sciences, Hamadan, Iran

Abstract

Background: *The aim of this study was to determine the readiness of students to participate in the E-learning in the University of Medical Sciences.*

Method: *The study was a descriptive survey and data gathering tool is a questionnaire. Of the total study population, 351 people were selected to sampling and 360 questionnaires were distributed among them. Finally, 360 questionnaires were analyzed. Student readiness for e-learning was measured using standard questionnaires. The statistical analysis used in this research is descriptive and inferential statistics (frequency tables, bar charts, and the mean and standard deviation, one-sample chi-square test, Kruskal-Wallis test was U. SPSS software was used to calculate the necessary data is.*

Results: *The findings of the study, University of Medical Sciences is prepared to participate in e-learning are moderate.*

Conclusion: *The analysis of the results showed that the preparation of undergraduate and postgraduate students in e-learning is significant, but the rest of the questions (the difference between the level of preparedness of students according to their gender and school) significant difference there. The results showed that the University of Medical Sciences in terms of access to technology and participation in e-learning are at the level of vigilance. The proposal to improve the readiness of students to participate in e-learning is presented.*

Keywords: E-learning, E-learning readiness, University of Medical Sciences, Preparing students .

Introduction

Access and control over information and communication technology and taking its advantage in the strategic and important field of education are considered as an important component of power in present age that should not be neglected [1].

Increasing development of the technology- particularly information technology- has caused lots of changes in e-learning field while such factors as decreased training costs, ease of participating in virtual classes, a variety of courses, decreased traffic costs and great flexibility of Electronic Learning have not been ineffective in expansion of this technology. It also has given rise to some fundamental changes in public perception towards development and it has been so effective that nowadays information technology is considered as a national development core in diverse countries. Training and learning are the lifelong processes for permanent enrichment of knowledge and expertise, the best way of characterization of learners and making better relations among individuals, groups and nations [2 and 3]. The countries the US, Canada, the UK, Australia and China are the pioneers in E-Learning employment at medical education area. In American medical sciences universities such as Harvard, Columbia, Boston and Michigan, medical courses (mostly basic sciences) are held online. In Manchester and Sheffield Universities of Britain and Chinese Medical Sciences Universities, lots of effective actions have been made in this regard [4].

E-Learning is a newborn industry in Iranian educational technology and distance learning. However, educational centers and institutions- particularly universities- try their best to present a suitable pattern for Iranian educational and cultural structure in E-Learning field. In addition to the advantages inherently offered by E-Learning, one of the important causes for necessity of organizing Iranian e-learning centers and institutions is the increasing educational demand particularly higher education. Nevertheless, it has become a specific social issue according to limited educational resources and capacity in current system. Therefore, since the number of applicants for higher education has increased and present in-person courses are not sufficient and also a major part of the applicants is composed of the employed experts with social and familial responsibilities so they are not able to attend in-person courses as full-time students, the traditional training methods will be no more accountable for the great demand of education [5]. Therefore, higher education as the most important educational entity has suggested e-learning (not low level but deep and lifelong) and virtual university as an alternative or supplement for traditional learning [6 & 7]. Currently, e-learning courses compose an important part of higher education and plenty of universities, institutions and educational organizations are rapidly developing and implementing this training means [8]. This means is one of the ways to make higher education more pervasive and developed [9]. Although e-learning is still rapidly growing, it is still in initial stages of development [10].

Nonetheless, medical sciences universities and colleges are not excluded from these changes and revolutions and they therefore must coordinate themselves with such huge changes. Medical sciences universities and colleges entire the world tries to make optimal e-learning methods in medical education field, realizing these changes and revolutions. In doing so, online training, video conference and telemedicine have been welcomed in recent years [11].

For e-learning development, the technology is seen as a vital factor in most of papers. This factor includes having infrastructure, network, software and hardware [12].

Doctors.net.uk (as the largest independent network of physicians in the United Kingdom) was awarded in 2008 as the best e-learning institution in health department. Their e-learning service has been launched since 1998 and the courses are often held online along with discussion and self-learning groups. The curriculums are implemented as the case-patient. The

relation between each curriculum and associated websites, magazines and inline resources and databases is well-drawn and a space is considered for users to store of medical documents (images and so on) [13].

The excellence of e-learning as a method for learning is well-logged in education. Despite this dominance and superiority of e-learning in the educational environment, the learner's preparedness for such a new environment is seldom evaluated [14]. However, according to growth and expansion of e-learning, students' preparedness is necessary to be realized and evaluated as the success predictor in online curriculums [15] and effective expansion of e-learning will not be successful without attention to preparedness and attitude of users, students and scholars for this technology [16]. Therefore, what should be paid into attention prior to implementation of e-learning system is that organizations need to pass a process which assures electronic implementation success before launching e-learning project and investment on it. This process is to study preparedness for e-learning implementation [17 and 18]. Several studies have shown that students need a certain degree of self-discipline, self-direction and personal initiative for success in e-learning [19].

According to above mentioned text and also since human resources preparedness to enter e-learning field is one of the most important factors which can play a determinant role in e-learning success/failure [20, 21 and 22] and expansion of e-learning will not be successful without attention to preparedness and attitude of users, students and scholars, therefore their participation preparedness is required to be studied in e-learning system before implementation of such a system. In this regard, according to fundamental role of students in educational systems, the necessity of this group's preparedness to employ e-learning is clarified.

Methods

The research is an analytical survey that was conducted on a sample of students of Hamadan University of Medical Science in the second semester of 2014-1015 where Morgan's sampling formula was used.

The statistical universe includes all students studying in Hamadan University of Medical Sciences from the college's medicine, health, nursing, pharmacy and allied health. According to the collected statistics and information from educational deputy, the total number of students was 3,615 during the research. The study was conducted in Hamadan University of Medical Sciences in March 2015. Morgan's sampling formula was used to obtain sample volume. The minimum sample size is 351. A standard questionnaire was used to measure students' e-learning needs which were used formerly in similar studies. The validity and reliability of the questionnaire was approved by the researchers.

This questionnaire had 26 questions provided by five-point Likert scale and consisted of two categories of the questions.

The category 1 is associated with properties of statistical sample including gender, educational group, level of education and college and the category 2 offers the questions concerned with students' preparedness level to participate in e-learning which consists of 6 factors: access to technology (questions 1-3), online skills and communications (questions 4-12), incentive (questions 13-15), learning ability through medias (questions 16-18), internet group chats (questions 19-21), important means for success in e-learning (questions 22-26). Five-point Likert scale was used for scoring- i.e. strongly disagree to strongly agree range for which the scores 1-5 were considered, respectively. The statistical methods included ratio test of a society, t-student test of a society, t-student 2 test of an independent society, mean values

comparison on few independent societies (one-way ANOVA) and Shapiro-Wilk statistic which was conducted by the software SPSS.

Results

The findings on the first question (How prepared are the students of Hamadan University of Medical Sciences to participate in e-learning?) showed that the minimum, maximum and mean possible score for preparedness of students of Hamadan University of Medical Sciences were 23, 115 and 69, respectively, then if mean score gets greater than 69, preparedness of students of Hamadan University of Medical Sciences can be mentioned to be higher than average.

In the similar studies conducted by Kaur and Abbas [23] in Malaysian University, the findings showed that the studied learners are in average level for e-learning and also their technological preparedness is in a high degree compared to cultural and scientific preparedness. Karimi [24] also qualitatively evaluates and analyzes e-learning capacities in Iranian higher education system. In terms of preparedness for e-learning, his findings indicate that most of students, professors and managers are in the levels average, good and average, respectively. Also, there is a significant difference between students, professors and planners in terms of preparedness.

The assessment on the second question (do the students of Hamadan University of Medical Sciences have e-learning preparedness in terms of access to required technology, online skills and communications, incentives, the ability to learn through media, the skills for group chats and important issues for success in e-learning?) indicated that it is higher than average in terms of access to technology, it is lower than average in terms of online skills and communications as well as incentives, the ability to learn through media, the skills for group chats, and important issues for success in e-learning and generally preparedness can be argued to be lower than average level. In a study entitled "Preparedness of Urmia University Students to participate e-learning system" Maleki et al., [25] evaluated the students preparedness in an average level and concluded that the students are in the level not-prepared in terms of access to required technology and incentives to participate in e-learning. The results of this study are in line with those of above-mentioned study. HosseinAli [26] analyzed preparedness of Egyptian Tourism College students and the results showed low and improper preparedness of students in that college.

In reply to the third question (Is e-learning preparedness of the students of different fields in Hamadan University of Medical Sciences different?), it was found that mean preparedness of the students in different fields are not same so that the highest and lowest preparedness were gained by Midwifery and Health Education students, respectively. Similar studies were carried out by Maleki et al., [25] who found no significant difference in this regard.

Findings on the fourth question (Is e-learning preparedness of the students of different grades in Hamadan University of Medical Sciences different?) showed that mean preparedness of students in different grades are not the same so that the highest and lowest preparedness are for bachelor and PhD grades. In similar studies by Maleki et al [25] in Urmia University, the master students have the highest preparedness which is due to higher usage of these students from such means as PC and internet to do the researches.

In reply to the fifth question (Is e-learning preparedness of the students of different genders in Hamadan University of Medical Sciences different?), it was found that mean preparedness of the male and female students are somewhat same, in other words, gender had no significant impact on students' e-learning preparedness. Similar studies were carried out by Maleki et al., [25] who found no significant difference in terms of gender.

Discussion

Present study aimed to specify preparedness of students of Hamadan University of Medical Sciences to participate in e-learning system. In doing so, such factors as access to technology, online skills and communications, incentives, the ability to learn through media, the skills for group chats and important issues for success in e-learning were analyzed.

According to findings of this study, students of Hamadan University of Medical Sciences are in moderate level of preparedness to participate in e-learning system. Therefore, it can be found that, in order to set up e-learning in Hamadan University of Medical Sciences and thereby providing the means for the first factor access to technology, these facilities and actions are required to be provided: high-speed internet, hardware and software associated with means of learning about the implementation of e-learning at Hamadan University of Medical Sciences.

Regarding the second effective factor in e-learning, mainly online skills and communication, empowerment of students and professors in electronic interactions should be taken into consideration. In addition, in order to implement this system, a powerful technical team which is in charge of e-learning support should follow up the affairs associated with e-learning.

Concerning the factor incentives, the students' interest, belief and real desire towards e-learning should be made and this is feasible through designing such plans as training workshops and e-learning courses so the students can experience these courses and get familiar with real advantages of e-learning.

On the fourth effective factor (i.e. learning through media), the students' ability to make communication with video clips content, online information and books, the ability to note while watching a computer video, and the ability to realize course content which is played through video should be of high importance. Therefore, prior to implementation of e-learning, the required trainings should be held to improve this ability among the students.

Regarding the factor group chats which is one of the effective issues in e-learning success, the existing weaknesses on internet interaction should be eliminated by empowerment and training for students.

Regarding the last factor (i.e. important issues for success in e-learning), in addition to learners; preparedness, these factors also should be taken into consideration: powerful technical support, useful curriculums design, e-learning resources and materials preparation, holding the supplementary courses along with in-person and face-to-face training courses in order to get familiar with advantages of e-learning.

The results from other questions indicated no significant difference between genders but master students had higher preparedness for e-learning.

The results from this study showed that the students of Hamadan University of Medical Sciences have a preparedness of lower than average to participate e-learning system and plenty of aspects should be considered in order to implement e-learning system. Therefore, just one study will not be sufficient and thereby infrastructural and technological factors such as faculty members and university administrators should be paid into attention for the next studies.

Conclusion

The students of Hamadan University of Medical Sciences are not-prepared in terms of access to required technology and participation in e-learning system.

Acknowledgement

Educators and students at Hamadan University of Medical Sciences are deeply appreciated for helping us in this research.

Financial Resources

Present study was conducted as the research project number 9211304115 which was financially supported by research and technology deputy of Hamadan University of Medical Sciences.

References

Campbell N. E-teaching, e-learning and e-education. A paper to inform the development of the ICT strategy in New Zealand for the Ministry of Education <http://cms.steo.govt.nz/NR/rdonlyres/C11315DE-804A-4831-AB75-D4E77393DD8/0/eteaching.htm>. 2001.

Commission internationale Sure Le duct ion pour le vigt et unie me si ecle, Rapport de La Commission, Synthese preliminaire, Unesco, Paris, 1995.

Ruth, S. & Shi, M. Distance learning in developing countries: Is anyone measuring cost-benefits?, *TechnoLogia*, 2001, pp. 35-38.

Sharpe R, Benfield G, Roberts G, Francis R. The undergraduate experience of blended e-learning: a review of UK literature and practice. Higher Education Academy. Available from: www.heacademy.ac.uk/4884.htm. 2006.

Yaghoobi, J. and A. Others, Desirable characteristics of students and faculty members in learning Yet-mail in Higher Education of Iran: Virtual Students' Viewpoint. *Journal of Research and Planning in Higher Education*, 2008. 48: p. 162. [Persian]

Johnston, J., Killion, H.I., & Oomen, J. Student satisfaction in the virtual classroom. *The Internet Journal of Allied Health Sciences and Practice*. Available at www.ijahsp.nova.edu/articles/vol3num/Johnston%20-%20Printer%Version.pdf, 2005.

Ghazvini Fotohi, F. and Z. Khazaei, Moral evaluation of Virtual University. *Ethical Issues in Science and Technology*, 2009. 1,2. [Persian]

Thaufeega F, Crowe N, Watts M. Institute and learner readiness for e-learning in the Maldives. 2015.

Smart, K. & Cappel, J. Students' Perceptions of Online Learning: A Comparative Study. *Journal of Information Technology Education*, 2006. Vol. 6., 201-219

Zandi A. Introduction of E-learning at new education technology and merge that in medical education planning. *Iranian Journal of Medical Education* 2004;1:59. [In Persian]

Newell LE. E-learning readiness assessment for Crowley independent school district. Available from: www.crowleystar.net/Index. November 21, 2006.

The Doctors.net.uk model of e-learning. Available from: <http://Doctors.net.uk>.

Kamalian, A. and A. Fazel, Prerequisites investigate the feasibility of implementing e-learning. *Journal of Technology Education*, 2010. 1. [Persian]

Watkins, R., D. Leign, and D. Triner, Assessing readiness for E-learning. *Performance Improvement quaterly*, 2004. 17(4): p. 66-79.

Dray, B.J., et al., Developing an instrument to assess student readiness for online learning: a validation study. *Distance Education*, 2001. 32(1): p. 29-47.

Bach, S., Haynes, P., & Smith, J.L. *Online Learning and Teaching in Higher Education*, Open University Press, 2007.

Oliver R. Assuring the quality of online learning in Australian higher education.2001.

Hung ML, Chou C, Chen CH, Own ZY. Learner readiness for online learning: Scale development and student perceptions. *Computers & Education*. 2010 Nov 30;55(3):1080-90.

Seied Naghavi, M., Attitude of teachers and students to e-learning: a survey of e-learning in universities. . *Journal of Research and Planning in Higher Education*, 2007. 42: p. 157-176. [Persian]

Mosaddegh, H., S.K. Kharazi, and A. Bazargan, Conducting feasibility of e-learning in Yazd Gas Company. *Journal of Science and Technology*, 2011. 3: p. 566. . [Persian]

Dupin-Bryant, P.A. Pre-entry variables related to retention in online distance education. *The American Journal of Distance Education*, 2004. 18(4):199-206

Habley, W.R., & McClanahan, R. What works in student retention: All survey colleges. Iowa City,IA: American College Testing (ACT).2004.

Kaur, K. and Z.W. Abas. An Assessment of E-Learning Readiness at the Open University Malaysia. in *International Conference on Computers in Education*,. 2004.

Karimi, A., Qualitative evaluation and analysis capabilities of e-learning in higher education system in Iran, 2006, Tarbiat Modares University Tehran. [Persian]

Maleki Marasht, M., A. Ghaleei, and S.A. Mousavi, Assessment of Readiness for College Students University e-learning system. *Knowledge Science (Library and Information Science and Information Technology)*, 2012. 5(18).[Persian]

Hussen Ali, I. E. Measuring Students E-readiness for E-Learning at Egyptian Faculties of Tourism and HotelS. in: *The 6 International Scientific Conference eLearning and Software for Education*, Bucharest, April . 2010. 15-16.