Barriers to E-Learning in Higher Education System in Iran

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Abstract:
In recent years, use of technology in learning environments has become a serious necessity so that most universities in Iran are now somehow enjoying the benefits of e-learning systems. Sometimes, however, there are limitations that reduce the effectiveness of such systems. Methods: The statistical population of this descriptive survey (field) study include all postgraduate students of Islamic Azad University, Tehran Medical Sciences Branch. Using random sampling, 200 individuals were selected as the sample group. A researcher-made questionnaire was used to collect data, whose validity and reliability were confirmed using exploratory factor analysis and Cronbach's alpha. The one-sample t-test and the Friedman test were used to analyze data and prioritize components, respectively. Results: After data analysis, 6 components were identified as the most important barriers to e-learning at Tehran Islamic Azad University of Medical Sciences. The most important components are as follows: 1- Lack of adequate software and hardware facilities. 2- Low speed and numerous problems during implementation of educational process. 3- Lack of training courses for students. 4- Students' inability to search and obtain information from the Internet. 5- Experienced teachers' unwillingness to apply e-learning. 6- Lack of clear instructions and rules in this regard. Discussion: E-learning plays a significant role in students' educational success so that nowadays, very few classes deprived of use of technology can be found. However, the effectiveness of e-learning method has been questioned. Therefore, necessary infrastructure must be provided in order to achieve better results.

Keywords: Barriers, E-Learning, Higher Education

Introduction:

Human life has had many vicissitudes in the way of achieving perfection and advancement since the very beginning of history. What has been observed within the recent years indicates the ever-increasing development and marvelous rate of changes with the help of information technology and increasing growth of knowledge and public awareness. It is obvious that the old methods of generating and distributing knowledge which were designed according to face-to-face communications are gradually losing their effectiveness, and it seems essential to make use of new tools. In order to meet this requirement, E-learning, which is an evolved form of old teaching and learning methods with the use of information technology, was rapidly introduced as the preferred method of learning in the knowledge age.

By late 50s, a transition started worldwide which later became known as the third wave. Ever since, information technology, as the leader of this pioneering wave, has constantly brought new inventions for the humankind. These innovations have been appearing so frequently and rapidly that a newer product with better features, easier use, and less expenses is presented before its predecessor has finished its full development and publicizing process; and thus the older product leaves the scene to the newer innovations.

The development of educational system is one of the main challenges with which educational policymakers are faced in the realm information and communication technology. Revising the educational system is considered to be one of major subjects which should be taken into account due to the dramatic impact of technology and its growing influence on different elements of educational system. Thus, a coordinated system can be designed to constantly participate in the realm of information so that its consistency and durability would be guaranteed (1).

In such cases, one of the modern and efficient methods of developing the education and providing every enthusiast with a learning opportunity in every place and at every time is to benefit from the advantages of the Internet and E-learning. Cruzan and Anderson stated, "E-learning will definitely resolve all the educational and learning problems in the 21st century, and the Internet is the main principle in the development which has been caused by E-learning."(2)

The traditional method of teaching, which is currently followed, cannot keep up with the rapid progress of science and knowledge movement and the continuously changing needs of societies in the informatics world alone. On the other hand, education does not end in higher education facilities, and it must continue during the professional career. Therefore, familiarity with new education methods will indicate its importance.

The application of modern education methods is so important that some experts have considered the mastery over these methods to be more important than a teacher's knowledge and information (3). The emergence of information technology and E-learning courses has been surprising in the universities and colleges in the United States for the recent years so that 70% of them have pointed towards the use of E-learning (4 and 5). However, computer-assisted learning has its own constraints such as the fact that it may not be an appropriate substitute for the teacher, human and

emotional interactions, and the face-to-face communication established in the classroom (6). Other researches indicate that virtual education will be successful and efficient in case the educational content is properly compiled and evaluated (7).

Research Methodology

Population, Sample and Sampling Method

Given the fact that this paper aims to investigate the barriers for E-learning in higher education system, the research method is descriptive-applied survey. The statistical population of the present research includes the entire students of higher education at the Islamic Azad University Medical Branch of Tehran. 200 individuals were selected as the sample group through random sampling method. Finally, the data obtained from 193 questionnaires were analyzed.

Research Tool and Data Collection Method

In this research, an author-designed questionnaire was used to collect data. It had three sections (introduction, research demographic variables, and research questions) and 20 questions which were designed according to the five-item Likert scale. In this test, Cronbach's alpha has been estimated on a sample including 21 individuals (***α=0.89***). The content validity and exploratory factor analysis were used to evaluate the validity and reliability of the test. After conducting the factor analysis on the collected data, 8 questions were deleted from the research, and the data obtained from 12 questions were analyzed.

Findings

Table 1: The Results of Single-Group t-test for Comparing the Current State of E-Learning with the Desired State

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Item		Mean		Standard Deviation		Mean Difference	t	sig
ITEMS	Teachers' Ability to Search for and Acquire Information on the Internet	Current 3.20	Desired 4.43	Current 1.19	Desired 0.78	1.21	10.06	0.000
	Students' Ability to Search for and Acquire Information on the Internet	2.03	3.22	1.41	1.2	1.29	-0.38	0.000
	Holding Teacher Training Courses	2.07	3.01	1.16	0.75	0.94	8.41	0.000
	Holding Student Training Courses	2.35	3.91	1.33	0.97	1.56	3.94	0.000
	Teachers' Tendency to Teach in E-Learning	2	2.72	1.16	1.17	0.72	9.33	0.000
	Students' Tendency toward E-Learning Courses	3.4	4.45	0.99	0.78	1.05	12.42	0.00
	Having a Long-Term Plan	3	3.22	1.29	0.83	0.22	6.5	0.000
	Having Guidelines and Clear Regulations	2.43	3.65	1.22	1.56	1.22	1.39	0.000
	Sufficient Software and Hardware Pieces of Equipment	2.43	4.42	1.17	0.86	2.12	6.73	0.000
	Having Experts Supervisors	3.31	4.36	1.27	0.93	1.05	8	0.000
	Insufficient Speed	2.74	4.4	1.12	0.85	1.66	9.08	0.000
	Insufficient Budget	3.7	4.45	1.12	0.76	0.75	10.35	0.000

According to Table 1, it can be stated that the discrepancy between the current and desired states is considered to be a type of desire or preference because all the calculated values are larger than the critical value. Therefore, the difference between the current state and the desired one can be considered to be a barrier for implementing and benefiting from E-Learning. To prioritize the components, the discrepancy between the current state and the desired state has been calculated for each component. The results are reported in Table 2. Since the main research problem was to identify and prioritize the barriers for E-learning and they were considered to be a type of gap or distance, the prioritizing criterion was based on the observed differences. Therefore, the more distant these two states were, the higher priorities the barriers were given.

Table 2: Mean and Priority pertaining to E-learning Barriers

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Requirement	Barrier Severity	Barrier Priority
Insufficiency of Hardware and Software Equipment	2.12	1
Low Speed and Various Problems during the Execution of Learning Process	1.66	2
Lack of Student Training Courses	1.56	3
Students' Inability in Searching for and Acquiring Information on the Internet	1.38	4
Teachers' Reluctance to Adopt E-learning Methods	1.29	5
Lack of Guidelines and Clear Regulations in this Field	1.22	6
Teachers' Inability in Searching for and Acquiring Information on the Internet	1.21	7
Students' Reluctance in E-learning Courses	1.05	8
Lack of Expert Supervisors	1.05	9
Lack of Teacher Training Courses	0.94	10
Insufficient Budget	0.75	11
Lack of a Long-Term Plan	0.22	12

According to the information on Table 2 and given the mean difference between the current state and the desired state (difference between two situations), the most important barriers for E-learning are as follows: insufficient hardware and software equipment (2.12); low speed and various problems during the execution of learning process (1.66); lack of student training courses (1.56); students' inability in searching for and acquiring information on the Internet (1.38); experienced teachers' reluctance to adopt E-learning methods (1.29); and lack of guidelines and clear regulations in this field (1.22).

Conclusion

The quality of education and research are among the concerns which the university systems always attempt to fulfill. Many considerable efforts were made in order to improve the quality of higher education continuously in many countries in the recent years. An educational system has the necessary quality when it has no flaws. Because the flaws of a system are considered to be its defects and disadvantages; as a result, the desired outcome will not be achieved.

Therefore, as the first detection step, it is necessary to remove every defect or deficiency in a system, and the correct detection leads to the improvement of instructional programs and curricula. Generally, it can be stated that information technology is extraordinarily capable of modifying and reforming teaching and learning activities in all higher education institutions. It provides facilities to design modern and scientific environments, a fact which was not feasible before. Therefore, many universities are willing to hold E-leaning courses to benefit from IT capabilities in the form of E-learning or online learning. However, various researches indicate that the improvement of E-learning is faced with many problems and difficulties in the educational system.

They may impose large costs on the educational institutions because the policy makers and educational planners are not familiar with them. Given the findings of the current research, some suggestions were made. Using the experiences of successful virtual universities, the necessary standards were provided for the evaluation of learners and teachers in the virtual university. Also, some plans were made to control and evaluate all the efforts made in virtual university and to detect new education approaches such as cooperative learning, autonomous learning, interactive cooperation, and the problem-solving approach. So they could be conveyed to the learners and teachers. Also, some training courses would be planned and held for the learners and teachers on the virtual university. In this regard, it is essential that the officials evaluate the necessary changes in objectives, content, and teaching methodologies and revise the ways in which traditional courses' certificates are granted so that they would be compatible with E-learning.

Given the advantages and available opportunities, familiarization and advertisements in virtual education, determining a responsible organization which operates under the supervision of the Ministry of Health and Medical Education and the Ministry of Science and Communication Technology in this field, preparing the development infrastructures and creating virtual learning have defined a proper structure. Also, the necessary sections, positions and human resources are defined in this organization.

Then it attempts to set strategies, relevantly determined long-term and short-term objectives, and the desired time, expense, and human resource to conduct a research in each field. A research and development unit, as the most important unit, must collect and analyze up-to-date information on virtual university. In this regard, communications can be made with the research and development units from successful universities in the work so that their experiences and knowledge can be exploited. Moreover, some training courses can be planned for governmental policy makers in order to make them familiar with the importance and advantages of virtual university.

Therefore, the financial and moral support is provided by the government. The briefing sessions can be held for private sectors to familiarize them with the virtual university, and their financial and intellectual support can be attracted, too. Benefiting from organization's technical specialist in virtual learning, we have attempted to familiarize and teach the learners and teachers. In E-learning, the universities can familiarize people through websites. English teaching and learning organization insists on needs assessment, demand creation, and provision of education at a comprehensive level and in different forms (such as workshops, manuals, journals, CDs, and self-supporting applications) so that it could be helpful to consider encouragements in these environments.

Also, it is vital to design and implement motivational and supportive mechanisms such as providing facilities, improving the knowledge and skill, financial helps for purchasing technology and using it in order to increase the enthusiasm in virtual learning. Some plans should be organized in order to determine the cost, time, resources and technologies which are required to improve the hardware infrastructures and to specify the priorities.

Using the internal experts and available technologies, then the necessary measures would be taken and the essential supervision would be done. More budget and time should be allocated to the improvement of necessary infrastructures in order to create and develop virtual learning in the organization and also to elevate the culture in the virtual university. The general objectives of implementing the activities are as follows: supporting the infrastructures in the university, generating the networks, establishing the development center of communicative infrastructures which would be appropriate at all levels of the university, generalizing the public access to the network and computers, making policies at the university and supervising ICT processes (8).

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