Factors Affecting the Adoption of E-Learning: Jordanian Universities Case Study

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Abstract

Innovation in learning is always the main interest of any educational institute to develop their learning models. E-learning is one of the most innovative models in education. This paper investigates and analysis the factors that influence the adoption of e-learning systems in Jordan as one of the third developing countries. The investigation has been done in the high universities, public and private.

A new model has been presented in this research. The results of this research has been shown that the legislations issues, human factors, infrastructure, economics and web content had a significant impact on learning goals and objectives. Therefore it is difficult to have a complete e-learning system in Jordanian universities. The novel contribution of this research is achieved by using the results of investigations and analysis to assist in building of a theory that will be tested through quantitative methods in the future.

Keywords: E-learning; Jordanian Universities; Quality; integration.

1. INTRODUCTION

The concept of the learning (Watkins et al (1993), McCrea et al (2000)) has grown exponentially with the technological era related that today, corporate learning and the corporate learning organization have ascended to a position of strategic status in the context of managing and growing the project. Identification the knowledge-based economy, the paradigm shift in the way education is viewed and delivered, and huge knowledge gaps as significant trends that have given rise to e-learning (Urdan & Weggen (2000)). The increase in complexity and velocity of the work environment brought about by technological changes are also major issues that have fueled the demand for e-learning. The shift from the industrial to the knowledge era is presented by (McCrea et al (2000). Rapid technological change, the ever shortening product developmental cycles, lack of skilled personnel, enterprise resource planning, and migration towards value chain integration and the extended enterprise as being prominent contributors to the e-learning value chain. The robust economy and the increasingly competitive global business environment as central to the e-learning movement is recognized by (McCrea et al (2000, Tim L et al. (200)) .

These composed trends which contribute in driving e-learning systems and show the importance and benefits of e-learning which increases the adoption for this new technology and speedup motivation for creating a new e-learning model in Jordan.

Very few researches study the adoption and use of e-learning technology in the third developing countries. It is very important to reveal that the new technology adoption might be completely different from country

to country and from nation to nation. Therefore, this research investigates the factors that influence this variety in the adoption of e-learning systems.

This paper begins with the definition of e-learning. The second part explains the diversity of e-learning practices in terms of persons, computer and technology literacy and social factors. The third part explains a comparison between traditional education and e-learning. In addition, the objectives, advantages and disadvantages of e-learning are outlined after the quality and content section.

2. E-LEARNING DEFINITIONS

The term of e-learning involves using the Internet as a communications medium where the instructor and students are separated by physical distance (Cooper (1999)).

While"online",''technologically-integrated'','multimedia-based'',and "e-learning" are familiar terms that describe a new approach to instructional delivery. Studies show that universities quickly adopt these delivery modes. Analysts of this growth estimate that online learning is increasing 30-40 percent annually (Howell & S.L. (2003)). E-learning 'is a complement to other forms of learning and not a replacement. It should form part of an articulated approach to learning'(Ashwin & A. (2005)).

3. THE DIVERSITY OF E-LEARNING PRACTICES

No educator will be especially surprised to learn that success in a Web-based learning environment is heavily influenced by what the student brings to the learning situation. There is evidence that students with certain learning styles (e.g., visual) or behavioral types (e.g., independent) do learn better in the Web environment. Conversely, aural, dependent and more passive learners may not do as well. It is this sort of insight that leads some to propose that the potential for maximal learning results when instructional approaches are matched to student learning styles and are supported by appropriate technologies (Blum (1999)). Furthermore, students with a high motivation to learn can do better by learning online and they will be more independent.

"Our brains may also be the reason why we can become so involved with our computers. As a result of 35 laboratory studies, (Reeves & Nass, C. (1996)) concluded that it is the psychology of the relationship between us and the computer that is important, not the fact that one member of this so-called relationship is a piece of technology. They came to this conclusion after experiments where subjects were asked by the computer to evaluation its work. Subjects responded politely and seemed not to want to hurt the computer's feelings. But, when asked by one computer to Evaluation another's work, subjects were more likely to offer criticism"(Katrina   A. M. (2003)).

"Social presence" (i.e., the degree to which a person is perceived as real in an online conversation) is a strong predictor of satisfaction with computer-mediated communications (Gunawardena & Zittle (1997)). This skill the production of "immediacy behaviors," since they reduce the "social distance" between instructors and students. In this study, these types of behaviors were positive predictors of student learning and course satisfaction (Arbaugh & J. (2001)).

4. QUALITY AND CONTENT:

One of the most natural questions that is raised regarding online education (or any educational innovation) is whether it is effective or more effective than what is currently in place. In the case of online education, many comparative studies have conducted and more are undertaken to show that online learning produces equivalent or superior educational results to traditional face-to-face instruction. in general the question of whether e-learning is as effective as face-to-face learning has largely been answered by advocates of e-learning with a yes ,''nearly all comparative studies show that e-learning is as effective as classroom instruction'' (Carliner,S.(2002)). In order to make online education work efficiently, large number of students must enroll in courses and degree programs taught by relatively few faculty assisted by instructors aides (Alison A & Carr-Chellman (2006).). Using e-learning technology and innovations in learning methodologies can assist many students to achieve and gain multiple learning goals and objectives.

In any remoteness education situation we need to remember that students are not electronic machines, they are human beings with their proper educational needs and cultural context. E-learning platforms are useful

tools to help learners to accomplish their educational and learning activities, to instruct at a distance, to overcome time and space barriers. E-learning platforms do not substitute the human part of the educational process of teaching and learning (Fernando J. & Mortera-Gutierrez (2003)).

Table (1)   Description of the Objectives, Advantages and Disadvantages of using E-learning System in universities.

Attributes description	Details
E-learning purposes and objectives	Providing a platform to enhance both traditional face-to-face and e-learning system for students. New learning models are needed to bridge the skills gap and demographic changes. Solving Limitations of both time and physical space in the classical learning, Expanding the learning opportunities of students who are facing difficulties that are preventing them from attending traditional one. With the multi platform e-learning environment learning would occur at any time during the day and from any where in the world. Private educational university competitive highly desire Provides flexibility, efficiency and using workflow functionality application (Corkill et al. (1987)). E-Learning as a solution to National Specific Problems (Fayek & M. (2004)): Over-crowded classrooms. High price of traditional educational books. Chance for talented students. Active participation in the international educational community. Enhancing the level of national education .
E-learning advantages	E-learning system advantages for student: Building programmed work for students with the excellent support of educated websites made the task of e-learning easier (Saddington & Clark (2006)). Provide guidance for students depends on the level in which this application is integrated in to teaching (Saddington & Clark (2006)). Encourage students to become more autonomous learners Encourage students to make a different kind of use of both contact and non-contact time. In order for students to take full advantage of many of the e-learning innovations and technologies

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In this work, the main problem is building a new educational learning model. The degree of adoption of the

new technology and the trends driving e-learning system including the difficulties forces implementation in our country as a part of the Arab region and Middle East are taken into consideration. The model consists of several variables depending on the real requirements and demands of the universities within the available resources and environment.

It is obvious that e-learning implementation has many factors that can change the attitude of the people to adopt this new model of education. It is so difficult to cover all the factors; the researchers study the factors within public and private universities in Jordan in e-learning implementation. The next section explains this case.

5. CASE STUDY: PUBLIC UNIVERSITIES

The growing of technology knowledge underpins universities represented by the ministry of higher education) to adopt new vision for learning. This vision is implementing the e-learning principles in universities through different phases.

The ministry of higher education implemented the e-learning project in three phases. The first phase is the establishment of the infrastructure and content.

The second phase is the use of e-learning management systems as a supportive tool for the traditional education. It is done through using Internet and other multimedia tools. Finally, the third phase is that: Migrate from simple supportive e-learning tool using e-learning management systems to a complete content of e-learning system. It provides e-learning content, virtual class system, e-exam, e-video and studio, electronic content management, sharing tools and all the management works for the universities in Jordan.

6. THE RESEARCH METHODOLOGY

A qualitative research was used for induction (McDaniel & Gates (1996). That is, the qualitative approach to data collection discovers information from the perspective of the interviewee about the phenomena, such as behaviors and attitudes, that are not directly observable, that is, 'in someone else's mind' (Patton(1990)). The findings of the qualitative research are not used to test a theory and make generalizations about a population; but rather, to build a theory for further testing, through quantitative methods (Aasker et al. (2001)).

This induction characteristic of qualitative methods was a requirement for the first stage of this research for two reasons. Firstly, e-Learning systems in an Internet environment are a relatively new topic in Jordan and Arab region public and private universities. In the early stages of theory development, where phenomena are not well understood and the relations between phenomena are not known, in advance used quantitative research methods can lead to inconclusive answer (Denzin et al. (1994))). A qualitative method was required to explore this complex topic in depth with experts who have studied and/or applied (instructors, students and technical's) their knowledge practically to generate ideas rather than to evaluate ideas. That is, qualitative research allowed for flexibility in the gathering of information and a Semi-Structured exploration of issues in a less structured format, with a smaller number of respondents than quantitative methods (De Ruyter et al. (1998)). This information will be used to assist in the building of a theory that will be tested through quantitative methods in the next method of this research. The second reason for using a qualitative method was the type of information this research is intended to gain in the first stage of data collection. The depth and detail of qualitative data required to understand complex phenomena could be obtained only by getting psychologically close to the phenomena under study. 'The closer the researcher gets to the phenomenon, the clearer it is understood (Carson& Coviello (1996)). Qualitative research allowed us to a gain semi-structured understanding of underlying reasons and motivations and to obtain 'rich', 'real', and 'deep' information with 'non-statistical' data analysis. In summary, the complexity of the research subject warranted a semi-structured exploration that is only possible through qualitative research in the first stage of this research.

This research utilizes an unstructured interview with the Information and Communication technology in

Education (ICTE) students in Jordan University. They are instructors in high universities and professional. They are using the e-learning systems that are implemented by the ministry of higher education in their universities.
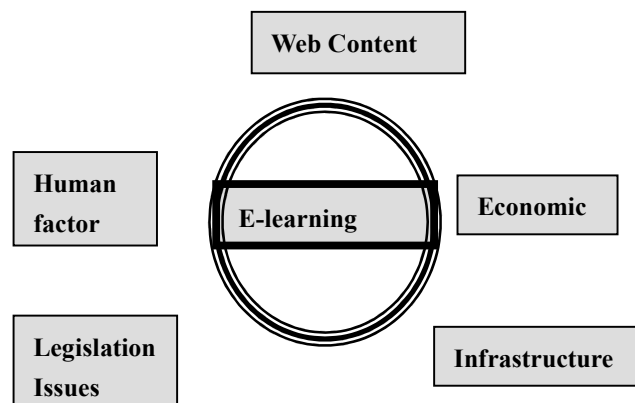
The researchers use each interview for collecting the information required from the respondents and in explaining the data results (Nair & Riege (1995)). The unstructured interview is often seen as an informal interview that is not structured by the standard list of questions. Field-workers are free to deal with the topics of interest in any order, and to phrase their questions as they think is best suited (Nichols, Paul (1991)). An unstructured interview is particularly useful for a preliminary study in order to test what the responses might be to a particular issue (Seidman (1998)). In this phase, the researchers asked those instructors who are content developers and users of e-learning system open-ended questions. Although the researchers knew what they wanted, the open-ended questions enabled the researchers to obtain what they were looking for.

The answers of the questions are summarize and analyzed with the cooperation of the interviewed instructors. The analysis focused on the frequencies of concepts in answers and how they are related to each other. Again, the derived concepts are discuss with the interviewed instructors and filtered.

The result is a framework depicts the main factors that influence the e-learning adoption in high universities. This framework is being discuss and approved by the interviewed instructors.

7. THE RESULT OF ANALYSIS

The Factors of E-learning Adoption Model in Jordanian universities.

8. DISCUSSION:

This research represents a practical investigation into factors and characteristics that influence the new e-learning model.

As seen in our new model in, the legislations issues, human factors (training, resistance), Infrastructure, Economic and web content (Language option, Multimedia, Content quality) had a significant impact on learning goals and objectives in our study.

The rare of legislations that control the use of Internet and guarantee the security and privacy of whom use the Internet were restrict the access of students to the e-learning system. Moreover, the students have not always a reliable access to the Internet. The reliable access is a coherent connection to Internet, continually web site updating, and reasonable server on-line service.

The legislations of the Ministry of higher education in Jordan require students' attendance to class's requirement for competitions of there study and the instructor can't develop there own e-learning object and if they do they can't use it inside the university. As a result of that, it is difficult to have a complete e-learning system in Jordanian universities.

According to both user and developer, the main barrier is the minds and resistance of change to adopt any new technology. They suggest to have enough training to use a system for both students and instructors and we add the technical's persons of the university who response about the labs in each university, as well as have ICDL as basic requirement for a job and promotion...

The technical infrastructure influences the adoption of e-learning in Jordanian universities. There is a shortage in the infrastructure. The numbers of PCs, laptops, and data shows are inadequate. Furthermore, the internet connection in the universities is not reliable, as well as the equipped halls/labs for e-learning are inadequate, for example; in many universities, one computer for three students.

For most of instructors and students, the economic factor influences the e-learning adoption. The economic factor is the income of the both instructors and students. Therefore, these people are not capable to have computers and internet connection in their homes. Nevertheless, very few students and instructors have computers, they are not able to connect them to internet through broadband line or even dial-up connection.

The most common complaint from user view was the English language of application. The majority of e-learning systems do not provide a language options to an end users. Therefore, students and instructors will not be capable to understand the instructions and manuals related to the system and that will influence their attitudes to use the system. The interactive interface is not always available and that will not make the learning process interesting, especially the majority users of such systems who are between 12-18 years old. They are used to play games with many interaction options and when they use the e-learning system with few or non interaction options, they feel bored. Course's content and materials which are shown on the web are neither high quality nor new. The high quality courses content is the newest edition books, chapters' slides, online practice exams, paper practice exams, courses' timetables, and interactive tools related to courses such as animations, pictures, and sounds.

Our study yield information that may be useful in guiding for extra and future research. It addresses the realistic key factors that are essential to adoption and effective integration of e-learning strategies, initiatives, and programs for universities in our country.

9. CONCLUSION

By incorporating e-learning innovations and technologies, students have other learning ways and alternatives. They assist them in meeting the changing demands of the marketplace where complex problems and uncertainty are ever present. Just as ministry of higher education must find creative ways to continue their competitive edge through the introduction of new technologies and services, universities should take practical steps towards meeting the needs of their students. Introducing e-learning tools and resources may be one way that assists students in achieving the multiple learning goals of exploration, communication, and collaboration beyond the framework and boundaries of the traditional classroom. Our research is preliminary an investigation for the factors that influence the adoption of e-learning systems, as well as seeking information about fact which has not been tested yet in the study domain literature. For that reasons, this information will be used to assist in building of a theory that will be tested through quantitative methods in the future.

10. LIMITATIONS OF THE RESEARCH

As results for this research, there is a list of limitations for adopting of e-learning in Jordanian universities

•Process of integration of the e-learning system is still at the beginning.

•E-learning systems within the Jordanian universities are almost not used as it proposed to be used.

•The instructors teaching load is high and thus slow down the adoption of e-learning system.

•The limited budgets and experts of such projects lead into implementation delay, insufficient training, and late adoption.

•Most of the Learning Objects LO of e-learning is not tested well.

The limitations are opening new opportunities for new researches that can contribute more to our

knowledge. This section suggests related areas of research where additional investigation may be rich.   It will be a good contribution, if the factors of e-learning adoptions model are validated with all universities, public and private in Jordan. In addition, this model can be checked with any adoption theory. Therefore, we can test to what extent these factors affect the adoption.

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