

E-learning in the Jordanian Higher Education System: Strengths, Weakness, Opportunities, and Threats

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Abstract: E-learning concepts have become the main concern for many countries. Jordan is one of those countries which have adopted the E-learning projects and the Jordanian universities have started to implement E-learning projects aiming to improve the effectiveness and efficiency of the educational process for both teachers and students. The purpose of this paper is to describe and review in a constructive way the current status of E-learning in Jordan higher education, and shed light on the strengths, weakness, opportunities, and threats of implementing the Jordanian higher educational system.

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1. introduction

The remarkable progress in the field of information and communication technology (ICT) and the wide use of internet in the most daily life activities has led to radical changes in the traditional teaching process (Wang et al., 2003; Tao et al., 2006). Higher education sector must keep up with these technological changes through providing ideal learning environment. The students also have high expectations about the use of ICT in their education. The labor market began asking for new skills and qualifications which impose new trends and competencies to meet the needs of the new economy. So the curriculums are also subject to re-examination to keep pace with the modern requirements and available techniques, such as E-learning as a highly disruptive technology for education.

Prefix "E" occurs in many terms nowadays (i.e. E-business, E-government, E-commerce, and E-learning (Roffe, 2002). E-learning is rapidly growing as an acceptable way of education. Remarkable progress has been made in E-learning in couple of last decades (Raymond, 2000; Rao, 2006). A very simple definition defines E-learning as a learning which is supported and/or made possible by the use of modern ICT and computers (Hoppe and Bretnier, 2004; Lee et al., 2007; Learning On line, 2008).

E-learning is the "use of internet technology for the creation, management, making available, security, selection and use of educational content to store information about those who learn and to monitor those who learn, and to make communication and cooperation possible" (Mikic and Anido, 2006).

While OECD (2005) provided another definition of E-learning refers to the use of information and communication technologies (ICT) in different processes of education field to support and enhance

learning in universities. This includes the use of ICT technology as a supplement to traditional classrooms, online learning or mixing the both modes.

It is obvious that all researchers see E-learning as an ICT enhanced learning process, where ICT tools are used to improve the on distance learning process and activities.

E-learning will play a significant part in what appears to be a major restructuring of higher education across the world. Students can access E-learning anywhere and at any time of the day. It's "just in time- any time" approach makes the learning process ubiquitous and E-learning is often the most cost effective way to deliver instruction or information to students and instructors where it cuts travel expenses, reduce teaching time, and significantly reduces the need for a classroom/teacher infrastructure.

This paper is organized as follows: in section 2, views many previous studies about E-learning, discusses the challenges that face the development of E-learning system, and shows the Arab Countries Experience in implementing E-learning system. Section 3 reviews E-learning in the Jordanian Higher Education System being launched in Jordan, and how the King Abdullah the second himself is encouraging and supporting this vision. Many subjects have been included in this section, such as, vision and strategy of the E-learning in Jordan, E-learning in Jordan readiness, and the SWOT analysis.

2. Literature review

There is several research studies which have been addressed the various issues that are related to the E-learning as a quality of global higher education system. Some of researchers tried to define the E-learning (OECD, 2005; Sambrook, 2003) as

“communication and learning activities through computers and networks (or via electronic means)”. (Fry, 2000) tried to be more specific, he defines E-learning as “delivery of training and education via networked interactivity and a range of other knowledge collection and distribution technologies.” Wild et al, (2002) also had the same definition as Fry’s – they defined E-learning as the creation and delivery of knowledge via online services in the form of information, communication, education and training. (Bleimann, 2004) stated that E-learning is a self-directed learning based on technology, especially web-based technology.

The E-learners motivation and commitment to the E-learning program is one of the important challenges that face the success of the E-learning projects. E-learning is not suitable for individuals without self-discipline to complete all tasks independently. Many learners have a problem in confidence and experience with computers so that the E-learners should receive some type of E-learning training to avoid any difficulties (Wong, 2007).

Some Researchers suggested by allowing students to study on a schedule that is optimal for them and the beginning E-learners should be exposed to simple procedures to master the online material. the E-learners should be in a position to clearly distinguish and choose the best among them, in terms of quality (Shanna, 2011).

E-learning now receives more attention in the Arab world than before and some Arab countries have made good starts in E-learning such as the Arab Gulf and the number of students in these countries

that enrolling the E-learning courses is increasing. Part of the studies focus on the Arab region experiment in E-learning field and discussed the possibilities of implementing E-learning in spite of the social, political and economic difficulties in the Arab regions and finds that the quality of E-learning program in developing countries affected by less established technological infrastructure and less supportive cultural and socio-political environments (Abouchdid and Eid, 2004). And some researchers suggested to make changes in the policy-making process towards the management of education and the researchers state that a successful of E-learning program need a coordinated efforts between strong organization, instructional, program staff members and learners (Owen and Demb, 2004).

New technologies associated with E-learning have created opportunities and threats to the institutional structure of higher education, the learning patterns of individuals, and learning certification systems. Recent efforts in the field of online education in the Arab world can be divided into the governmental efforts to create structures for complete programs and higher education efforts (Guessoum, 2006).

Statistics on access to computers and ICT applications in the Arab world show a serious digital divide between Arab countries and the developed world. The World Economic Forum (The Global Information Technology Report, 2012) presented a comparative assessment of 142 economies from both the developing and developed world, accounting for over 98 percent of global GDP as shown in Table 1.

Table 1: An Economy’s Performance in Some of the Indicators Composing the NRI and Provide Rankings For the Indicators.

Country	Government prioritization of ICT	Capacity for innovation technologies	Laws relating to ICT	Mobile network coverage, % pop	Internet bandwidth (kb/s) per Internet user	Secure Internet servers per million population	Availability of latest technologies
Bahrain	7	117	33	100	62	47	22
Egypt	71	83	83	99.4	89	106	110
Jordan	47	92	74	99	92	70	42
Kuwait	114	90	110	100	76	41	58
Oman	19	57	30	97.6	93	62	45
Qatar	8	11	20	100	57	49	31
Syria	95	134	129	97.5	123	141	119
UAE	11	32	27	100	55	40	25

If Middle Eastern governments would develop and enhancing world averages and enhancing university

competitiveness through E-learning they need changing in polices to encourage improvement and make considerable financial and resource investment.

3. Discussion

The Hashemite kingdom of Jordan is located in the Middle East with 6,249,000 populations for 2011 and an area of total 88778 sq km, according to Jordanian Department of Statistics (2011). 75% of the Jordanians are under 30 years of age. Department of Statistics in coordination with the Ministry of Communications and Information Technology (MOICT) carried out a survey “The Use of Information and Communication Technology in Home” in 2011. The survey covered a sample of households’ amounted to about 3340 family to ensure representation at the level of the kingdom: the urban, rural areas and regions. The main results were:

- A marked increase proportion of households owning a personal computer or laptop to about 61%, compared with about 56% in 2010. This percentage has been increasing compared with last year by about 5 percentage points. The report also showed high percentage of households has internet in their homes according to Table 2.
- Most Jordanian families (98%) have a mobile phone line and 86.4% of Jordanian households have more than one line.
- More than half of households do not have personal computers because of the unnecessary need for a computer, and this percentage is decreased from last year, with more than two-fifths of these families who do not have personal computers due to lack of financial capacity and this percentage increased from the previous year by 1%.
- Regarding Internet availability, about 35% of the families have Internet service at home, compared to 22% in 2010, and the survey showed that most Internet users are in the age group (15-24) years old and are students with bachelor degree and higher as shown in Figure 1.

Table 2: Distribution of Households by the ITC Indicators, 2007-2011 (Percentage)

Indicator	2011	2010	2009	2008	2007
PC or Laptop	61.2	56.1	54.3	39.3	35.7
Internet	35.4	21.7	18.4	22.0	15.6

Because of the sharp growth of internet and mobile users, and the high literacy rates considered to be the highest among other countries in the region. The

demand for E-learning in Jordan is expected to rise in the next few years (Hinnawi, 2011).

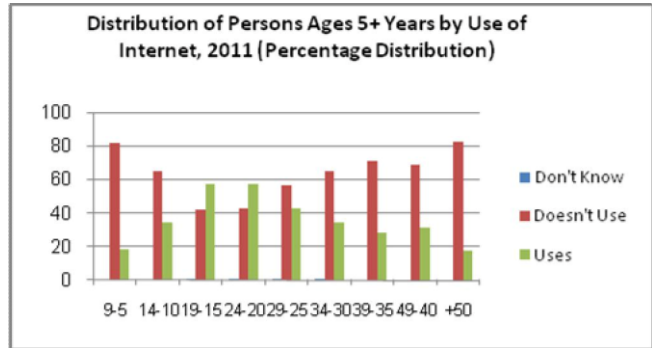


Figure 1: Distribution of Persons Ages 5+ Years by Use of Internet, 2011 (Percentage Distribution)

Vision and Strategy: The E-learning initiative in Jordan is a national initiative of his Majesty King Abdullah II which is part of a larger national IT strategy to grow internet use, where his Majesty King Abdullah II strongly believes that the Information and Communication Technology (ICT) sector offers great potential to positively shape the future of education systems in the kingdom (Pepper and Rodgers Group, 2006).(Ciborra and Navarra ,2005) stated that "Jordan is a textbook case for its vision to become the Singapore or Bangalore of the Middle East in the adoption of new information and communication technologies".

The vision of E-learning in Jordan is “Enhancing the quality of education and inspiring lifelong learning through eLearning”. Jordan has endeavored towards building a knowledge-based economy, where the generation and the utilization of knowledge will contribute significantly to an economic growth and wealth creation.

Building a knowledge-based economy that will enable Jordanians to become entrepreneurs and participate in ICT industry is one of the priorities of the government (Institutional Studies and Practices, 2010). This is demonstrated through the Jordan Education Initiative project (JEI) (<http://www.jei.org.jo>) which considered one of the most important projects, which was launched in 2003. This project is totally related to E-learning and lifelong learning opportunities in Jordan educational system.

This focused on a partnership development with Cisco systems to create an effective model of internet-enabled learning (Cisco, 2005). The mission of the Jordan Education Initiative (JEI) fits with Jordan's vision for the future of education. It will create a model for effective Internet-enabled learning that can be replicated and implemented in other countries in the region.

Jordan has a very good and reliable infrastructure for Information and communication technology. Jordan Universities are interconnected to the internet via 155Mbps link. The Jordan universities have robust, reliable network infrastructure up to the advanced standards. Also, all Jordan universities are connected to centralized integrated e-library system.

Jordan through the MoICT launched an initiative entitled: "Laptop for every University Student". The aims of this initiative supporting the usage of ICT tools in the educational process by providing a laptop for each student in the Jordanian public and private universities at an affordable cost along with wireless technologies and internet access and a four years' maintenance.

Jordan has rapidly expanded its higher education system although it has not yet produced a sufficient qualitative leap (Sabri and Al-refae, 2006). As the world's University sector moving forward with E-learning, Jordanians universities are trying to respond accordingly. E-learning offers alternative approaches to Jordanian traditional higher education institutions, encouraging them to re-evaluate the way they operate. In doing so, it provides potential to accommodate new information and communication technologies to enhance the student learning experience (Al-adwan and Smedley, 2012).

The Ministry of Higher Education and Scientific Research (MoHESR) has formed an E-learning steering committee to draft a national E-learning strategy with a mission:

"To support institutions of higher education in their move towards embedding eLearning appropriately using technology to transform education into a learner centric system that is internationally distinguished in its quality and impact, to foster innovation and excellence in teaching and learning, and to support employability of lifelong learning".

The national E-learning strategy for higher education highlights the following seven strategic goals for adopting E-learning in Jordan universities (MoHESR, 2007):

- 1) Enable institutions to adopt eLearning and facilitate widening access to learning.
- 2) Support institutions in their strategic planning with a holistic approach to embedding eLearning including implementation, administration, and change management.
- 3) Create a culture and awareness for E-Learning.
- 4) Establish a robust integrated virtual learning environment.
- 5) Assure the quality of eLearning and its impact on students' teaching, learning and assessment experience.
- 6) Promote learning and educational technologies research that focuses on student learning rather than on technology and on faculty and staff development.
- 7) Lead the move towards instilling lifelong learning and enabling connections between academic learning and experiential learning.

Despite the aforementioned strengths factors, a study about the adoption of E-learning in Jordan indicated that the expectations in using E-learning in higher education institutions are still below the international level (Al-shboul and Al-smadi, 2010). The study identified factors that have an impact on adoption of E-learning in higher education institutions in Jordan:

- 1) The use of E-learning tools requires the higher education institutions to change their teaching methods, which cannot be easily changed.
- 2) Lack of technological skills related to using E-learning systems, where lack of such skills among teachers and students will lead to lack of interest in E-learning applications or resistance to use it.
- 3) In some cases, the administration refuses to provide financial support and qualified staff necessary to facilitate the use of E-learning applications.
- 4) Some institutions do not believe in the usefulness of E-learning and therefore do not seek to pay attention to its application.
- 5) Some teachers believe that the use of such applications reduce their role in the educational process.
- 6) Lack of interest in training in the absence of adequate technological capacities of the teacher and the learner will lead to the failure of those applications.

E-learning in Jordan Readiness: From Schreurs and Moreau (2008) point of view, E-learning readiness refers to how ready the Organization is on several aspects to be able to adopt E-learning

applications. The Economist Intelligence Unit (2009) has been defined E-readiness as a measure of the quality of country's ICT infrastructure and the ability of its consumers business and governments to use ICT to their benefit. When a country uses ICT to conduct more of its activities, the economy can become more transparent and efficient.

With reference to Jordan e-readiness, the Economist Intelligence Unit and IMB (2009) indicate that Jordan e-readiness index is one of the highest in the Middle East and North Africa (MENA) region. Jordan overall score 4.92 with values for the criteria

as shown in Fig2. This result was based on six criteria used to rank countries' e-readiness, which are:

- Connectivity and technology infrastructure (overall weight 20%)
- Business environment (overall weight 15%)
- Social and Cultural environment (overall weight 15%)
- Legal environment (overall weight 10%)
- Government policy and vision (overall weight 15%)
- Consumer and business adoption (overall weight 25%)

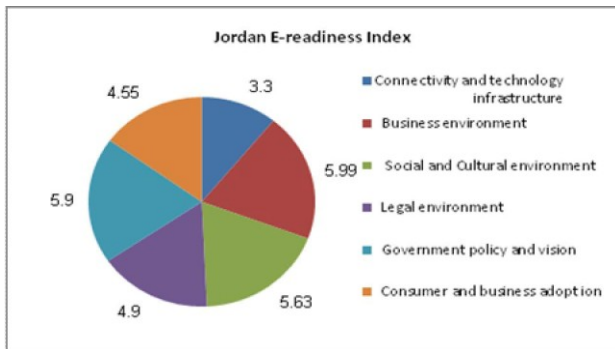


Figure 2. Jordan Connectivity, Business, Social, Legal environment, Government policy, and Consumer adoption

4. Results

SWOT analysis is one of many tools that can be used in an organization's strategic planning process .SWOT refers to strengths like high quality and reliability of telecommunications infrastructure. Weaknesses, like lack of source for training E-learning course developers. Opportunities like high ratio between students and faculties, and Threats which means any unexpected risks that might affect the launching or implementing of such a project like, lack of E-learning culture in addition to the fear of E-learning. SWOT analysis of the E-learning system in Jordan is shown in Table 3.

Table 3: SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> - His majesty king Abdullah the second's encouragement and support to such development, and to all of the IT and ICT developments as well, "Jordan will become an IT hub for the region". - Jordan is already well endowed with telecommunications infrastructure, The quality and reliability is above global standards, and IT industry is growing rapidly. - Mobile penetration is growing rapidly and reached 98%, mainly due to significant drops in mobile charges. - The belief and the strong ambition in developing such a project. - Jordanian Universities have robust, standards-based information technology network infrastructure, including hardware, software, and applications for intra-university connectivity; and global connectivity through the Internet. - Jordanian Universities are connected to centralized integrated e-library system. - Some Universities have invested in eLearning tools (VLE and Content Development tools) 	<ul style="list-style-type: none"> - ELearning experience is immature in all Jordanian Universities and it is scattered among some departments/faculties without consistency. - There is no common definition of E-learning as they range from using computers for learning to purely distance learning. - There is no shared vision of E-learning for Jordan; some decision makers see E-learning as a luxury form of education, a replacement of faculty, a way to reduce budget deficit, etc. - Despite our skilled human resources, there is no source for training eLearning course developers and instructional technologists. - There is no Jordanian eLearning community. - E-learning needs commitment and leadership support from University presidents, deans, and departments' heads.
Opportunities	Threats

<ul style="list-style-type: none"> - Increasing number of high school graduates will increase the number of students heading to universities and other higher education institutions with no space or capacity to absorb them. Many are looking to eLearning as a possible solution. - The Students to Faculty ratio is very high, eLearning is perceived as a possible solution to address this symptom. - There is a strong desire to improve the quality of education in Universities; eLearning is perceived as one of the solutions. - E-learning can provide the solution to many students who can go outside Jordan to get education, which saves the country hard currency. - Universities can collaborate in producing e-content for shared University's requirement courses. 	<ul style="list-style-type: none"> - PC/laptop penetration is 61.2% and is growing annually, but it is still behind desired levels due to affordability issues. - Internet penetration in Jordan is only approximately 35.4% - The MOHESR, Universities, and private sector need to cooperate rather than direct or indirect competition in content development. - ELearning needs strong cooperation/collaboration between MOE, MOHESR, MOP, MOICT, and Universities. - There is a lack of E-learning culture and there is some fear of it, especially among faculty, who do not have a clear understanding of their role in E-learning (will they be replaced? What happens to the course materials I have worked so hard to develop? Who will take care of my students? Still there are some concerns.
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5. Conclusion

E-learning is a new trend of education system, where students deliver their materials through the web. This paper viewed many previous studies and researches about the E-learning, to explore the effectiveness and restrictions of the recently launched E-learning in Jordan. Despite of strained resources, Jordan has given good attention to education in particular. The achieved progress in using the modern technology, computers and networks in Jordanian public and private Universities it becomes a must and it is supported with the royal vision. This is one of the reasons for success this project. The desires to build a knowledge economy and expand educational opportunities through technology in Jordan are other reasons for the success. The results of this paper showed that Jordan has sufficient awareness of the importance of E-learning, what are the factors that help in the success of this project, what are the challenges that help in failing such project. All the parties of E-learning are fully aware that the implementation process is gradual and needs patience, encouragement, and continuous technical support. As a consequence, Jordan E-learning system becomes the most advanced and developed in the Arab world.

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