Overcoming the barriers to implement electronic learning in Higher education (HE)

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Abstract

Technological innovations have not only brought benefits to business, but to Higher Education, worldwide. Colleges and universities are using E-learning to make learning more accessible and efficient. This paper assessed the attitudes of staff member towards challenges to embracing e-learning. However, Libya is a very wide State and the distribution of the population is concentrated in certain & specified areas make the academic education sometimes difficult either due to distance from the educational centres or due to lack of time or due to handicapped body or others. E-Learning system enables students of all ages and abilities the chance to learn anywhere, at any time and at their own pace. This paper aims to shed light on the role of e-Learning in the Libyan Education System and how it can be improved as well as discussing in general the effectiveness of this system in Libyan higher education by focusing on the factors that affect the up take of this system in Libya. Nevertheless, in this paper the semi-structured interviews with the senior leaders within two universities had been used to identify the factors that affect e-Learning. The paper concludes that at present “e-Learning” does not apply. Nevertheless this is not to say that it cannot be achieved in the future. It suggests that e-Learning requires a minimum technological plat form. However, this paper focuses on two public universities (University of Tripoli and the Al-Zawia University, and hence the generalisation of the findings outside of these universities cannot be validated. However, the paper’s findings appear to be intuitively general sable beyond the subject topic.

This paper can support capacity building in e-Learning systems in Libya by the identification of needs, which is an important initial stage in any capacity building programme. Overall This is an original approach to the evaluation of the status of e-learning in Higher Education (HE) in Libya.

Keywords: Overcome e-learning barriers; Attitudes towards e-learning, ICT infrastructure, e-learning Factors, Libyan Higher Education,

Introduction:

The World has been seeing rapid changes in all aspects of life. All countries have been Subject to fierce competition in almost all aspects of life including economic, and educational, along with the information technology revolution which achieved major shifts in improving computer applications, such shifts resulted in improving the competitiveness of the future graduates in the fields of construction & enterprise. In order to improve the competitiveness of the coming generations, traditional education should be revised and further developed through designing and introducing new educative programs using developed ICT facilities. Despite the importance of E-Learning in Higher Education (HE) and human development in Libya, implementation of E-learning is facing a number of challenges in Libyan universities. Those challenges can be summarized as follows:
Leadership; ICT infrastructure; Finance; Culture; Instructors & learners; Lack of Strategy; and Technical expertise. Regardless of these challenges the future is optimistic, offering innovative and advanced opportunities to implement e-learning.

The E-learning program, if established in Libya, will help to solve the problems resulting from a shortage of traditional education institutions that hold an increasing number of students who wish to study at university providing them with a chance to learn and promote scientific cooperation and research in order to reach every individual in the community. E-learning would also provide education for those who missed such opportunities and give provide them with knowledge of technological developments to continue in other areas of technical development.

**Definition of E-learning:**

There is a wide range of definitions for E-learning. E-learning offers opportunities to learn anywhere without being in a lecture theatre (Yieke, 2005); E-learning is defined as learning facilitated and supported through the use of information and communications technology. E-learning is no longer simply associated with distance or remote learning, but forms part of a conscious choice of the best and most appropriate ways of promoting effective learning. Khan (2000) defines that E-learning encompasses web-based learning (WBL); internet-based training (IBT); advanced distributing learning (ADL); and online learning (OL). More simply, E-learning can be thought of as anything that incorporates technology with interactivity to support learning, training and communication among groups and between individuals. Basically, technology has given us the opportunity to learn anywhere, anytime, and at our own pace. Additionally E-learning is using technology to deliver learning and training programs (Knowledge passed through the internet, network, or standalone computer). Therefore it is any technology-mediated learning using computers whether from a distance or in a classroom setting (Nicholas Croft 2010).

**Higher Education context in Libya:**

Libya is an Arab country located in Northern Africa and it covers a land area about 1,759,540 sq km. The capital of Libya is Tripoli and the main language spoken is Arabic. Italian and English languages are widely understood in the major cities of Libya. The total population of Libya is approximately 5.5 million, of which 1.7 million are students; over 270,000 of whom study at the tertiary level (Clark, 2004). El-Hawat (2003) reported that in the academic year 1975/76 the number of university students was estimated to be 13,418. This number has increased to more than 200,000 of which about an additional 65,000 students enrolled in the higher technical and vocational sector. The consequence of this rapid increase in the number of students in HE in Libya has resulted in an increase in the number of institutions providing HE. The university sector in Libya started in the early 1950s with the establishment of the “Libyan University”. It has campuses in Benghazi and Tripoli and it has grown over the years to incorporate Faculties of Arts and Education; Faculty of Science; Faculty of Economics and Faculty of Commerce, Law, and Agriculture.

Libya has a history of sending university students abroad. In 1978, more than 3,000 students were studying in the United States alone. However, by 2002 those figure had dropped to just 33 as a result of sanctions imposed in 1986, which restricted travel to the United States by Libyan nationals. According to the British Council (British
Council Press Release, 2003) the United Kingdom signed a cultural agreement with Libya at the end of 2003 which is expected to result in an increase in the number of Libyan students studying in the UK. Officials from the British Council estimate that there were more than 3000 Libyan students enrolled at British institutions of higher and further education in 2004; of those, 90 percent are said to be on Libyan government scholarships. (Clark, 2004).

Methodology

This study was conducted during the period from August to September 2009. Involving two main universities in Libya, University of Tripoli and the Al-Zawia University. Each university was visited by the author, conducting face to face Semi-structured interviews. Observation and the collection of supporting documentation will also be utilized for triangulation purposes. The numbers of interviewees in the two case study organisations were 16 in case study “A” and 15 in case study “B”, Table (1).

Table 1. Interviewee groups from the two case study organisations:

<table>
<thead>
<tr>
<th>Position of the interviewees</th>
<th>Referred in the findings</th>
<th>Case “A”</th>
<th>Case Study “B”</th>
<th>Total each level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dean of the Faculty, Registrar and Administrative manager</td>
<td>Senior Leader (SL)</td>
<td>3/3 “One from each level”;</td>
<td>3/3 “One from each level”;</td>
<td>6;</td>
</tr>
<tr>
<td>Heads of Academic Departments</td>
<td>Heads of Academic Departments (HODs)</td>
<td>6/12;</td>
<td>6/9;</td>
<td>12;</td>
</tr>
<tr>
<td>Staff member</td>
<td>Academic staff and administrations’ office (STM)</td>
<td>7;</td>
<td>6;</td>
<td>13;</td>
</tr>
<tr>
<td>Total each cases</td>
<td>---</td>
<td>16;</td>
<td>15</td>
<td>31</td>
</tr>
</tbody>
</table>

Analysis of attitudes towards major challenges in applying E-learning:

In this paper, the attitudes of staff members were identified through data collection. How these attitudes would affect the implementation of E-learning is as follows:

Leadership support:

The transition from traditional delivery methods to the implementation of E-learning environments inevitably involves the management of change (Betts, 1998). The need for support from an organization's leaders in order to begin and maintain any new approach to learning is addressed in the works of Abdelraheem (2006) and McPherson and Nunes (2006). Moreover, Liaw et al. (2007) went further by stating “instructors’ leadership is a crucial factor to affect learners’ attitudes to implement E-learning”. If leadership fails to understand currently emerging futuristic technologies and their potential to develop a vision and strategy to support and enhance learning, acceptance of E-learning will be slow if not impossible (Minton, 2000).

From the viewpoint of the interviewees commitment and support by the leadership is one of the most important factors. The adoption of a new way of doing business or of a new technology is unlikely to succeed if it does not have widespread organizational support, and especially if it does not have acceptance from the leadership. The project that has considerable support gives the people who are working on implementing the project more confidence that the project will proceed to a successful conclusion. This study concluded, after analysis, that leadership support is an important factor
for e-learning implementation in the Libyan Higher Education.

This study concluded that SL support is important for all e-learning implementation stages. Furthermore, HOD and STM can play a major role in the implementation of e-learning initiatives. The positive commitment, enthusiasm and support from all three levels for the implementation of e-learning are crucial for both Faculties and Universities to deal effectively and efficiently with new concepts, processes and/or technologies. This factor has been reported by many authors (among them Nunes (2006). Participants from the two categories (HOD and STM) have acknowledged that previous projects had been successful when supported by a senior leader.

The author saw in both cases that there was a lack of knowledge among a few on the SL level generally on e-learning concepts, which makes e-learning less effective if implemented. Therefore, this study suggests that in order to gain support and acceptance from senior leaders, it is crucial for them to understand the issue and what it can provide for higher education. Moreover, they need to know what the project requires and how to implement it.

**Technological infrastructure:**

Lack of public awareness on ICT and weak data communications infrastructures are two of the main factors affecting e-learning (Karmakar and Wahid, 2007). An organization that wants to implement E-learning should attain at least the minimum hardware requirements and the software required. The hardware part of E-learning includes the physical equipment that must be present to supply E-learning, e.g., servers and networks (O'Neill et al., 2003; Ettinger et al., 2006). O'Neill et al. (2003) suggested that the success of the technological infrastructure also has implications for the success of virtual learning; malfunctioning hardware or software can both be barriers which can cause frustration and affect the learning process. Valentine (2002) agreed with O'Neill et al. that hardware and tool malfunctions can be greatly detrimental to the effectiveness of E-learning.

Another important factor covered within this paper is the required technology infrastructure to implement E-learning in Libyan higher education. The data from the interviews revealed that interviewees in Case “A” (with a reasonably established infrastructure) were willing to implement E-learning initiatives; while interviewees in Case “B” (which lacked appropriate infrastructure) wanted to participate in the implementation of E-learning initiatives. To be successful such a programme needs to have an infrastructure that is capable of supporting and enabling the execution of E-learning. (Croft N. 2011).

Therefore, this paper suggests that the Higher Education in Libya needs to have in place good quality technology in all universities. At the moment in terms of technology there is a dissimilarity between the two case studies; for example, Case Study “B” has shortages of computers despite the fact that they have a plan to fully computerize the university as a part of their effort to develop a technological culture which encourages and promotes the use of technology in day-to-day activities and tasks.

The requirement for this technological infrastructure was identified by respondents as an important part of their work, and as a basic need to launch E-learning programmes. The study data
showed that Case Study “A” enjoyed the best technological infrastructure capability, while Case Study “B” showed the lowest standard of technological infrastructure, but the author expects the level of technology use among Libyan Staff member will increase in coming years, as the plan is to provide the university in Case Study “B” with computers and sufficient technology.

**Funds:**

The consideration of the initial cost as well as the continuing costs of installing, maintaining, using and upgrading technology, and the human capital costs to support E-learning, is very important (Valentine, 2002). Marengo and Marengo (2005) demonstrated that the costs of technological infrastructure include digital content costs, maintenance costs, content hosting costs, hardware and software costs and costs of E-learning staff. Staff costs include tutoring costs, administration and management costs and Expert in Multimedia Technology (ETM) costs. In addition, Marengo and Marengo (2005) stated that, in cases where the hardware and software supplied by the faculty to circulate the contents (software, document, etc..) are not sufficient, the E-learning evaluation needs to take into account the cost of items, such as the purchase of a server and its relative software. The lack of money can be problematical for the implementation of E-learning particularly with the continuous labour costs of instructors (Cho and Berge, 2002; James-Gordon et al., 2003; Berge and Muilenburg, 2006).

The majority (87.5%, 14) of the interviewees agreed that the university has enough financial resources to cover the expenses and technical requirements of adopting and providing E-learning (Figure 1). The author found in the interviews that this factor was not of significance to the interviewees. They confirmed that the entire funding for any project comes from a single source; that the government is based on political decision-taking and thus if the universities decide to adopt E-learning, there would be no problem in funding. Only one STM from Case Study “A” responded ‘don't know about the availability’ in answer to this particular question.

Most of the interviewees stated if they wanted to request anything the university is able to afford it. One senior leader from Case Study “A” and another one in the same position in Case Study “B” reported that if a decision is taken on the adoption and implementation of any project, such as E-learning for example, it will be passed together with a budget from the finance sector and that a decision on E-learning implementation must come from the General People’s Committee of HE. The author agrees that this is the system in Libya in all public sectors.

The author concluded that funding is not a significant factor in Libya because if a decision is taken to implement E-learning, funding will be approved by the government, and thus in Libya it is a different scenario to that stated in the literature where other sources say that it is possible that E-learning could be undertaken either by the government or by private investment or by partnership.
Resistance to changes:
Resistance to change is one of the important factors affecting the implementation of E-learning (Minton, 2000; Cho and Berge, 2002; Berge and Muilenburg, 2006; Ettinger et al., 2006). This resistance to change in some countries is usually because of the high percentage of illiteracy in those countries (Karmakar and Wahid, 2007). Moreover, Habibu (2003) stated that resistance to change is one of the factors that should be considered when implementing E-learning. It relates particularly to non-technical issues which includes academic staff, administrators, and/or managers. This resistance can be divided into three main reasons: fear of ICT; lack of time to design, develop and maintain support for online classes’ materials, and fear of exposing the quality of work. Lecturers are one of the major factors that contribute to the success of E-learning. For lecturers, implementation of E-learning programmes represents a change in teaching style and materials. The precise nature of the change is difficult to quantify (O’Neill et al., 2003). O’Neill et al. (2003) stressed that human resources should be committed to the project at an early stage and lecturers should be selected based on their attitude towards technology. According to Liaw et al. (2007) personal attitude is a major factor affecting usage of IT. .. (Croft N. 2011).

Understanding a user's attitudes toward E-learning facilities is important for the creation of appropriate E-learning environments for teaching and learning.

The acceptance and implementation of electronic learning involves altering human behaviour and activities. The majority of the respondents (81.3%) agreed that there is a natural resistance to change for different reasons. The senior leaders believed that their Heads of Department and their staff members resisted change because they fear using technology; because they lack time to design on-line teaching materials; and because E-learning might expose the quality of their work and may lead to a reduction in jobs.

Resistance to change and staff culture are important factors affecting the implementation of E-learning. The implementation of electronic learning involves changing individual behaviour and activities and the majority of the
respondents agreed that there is a usual resistance to change and adoption of any new technology for different reasons.

In the two case studies, Case Study “A” and Case Study “B”, the majority agreed that the reasons for resistance to change are a lack of time, fear of technology and fear that the staff member is exposing the quality of their work. But some of respondents added other reasons which were: fear of losing their jobs, fear of using the English language and time pressures on their work load.

**Staff education/training:**

One of the most challenging factors for STM and universities around the world is technology and the need for continuous training for keeping up-to-date with advanced technology. Staff education and knowledge is another important factor for the successful adoption of E-learning systems. University staff members need to be aware of the need to continue learning and to utilise IT infrastructures to acquire and manage knowledge. Training to use E-learning systems will ensure that they can utilise the full potential and capabilities offered by ICT tools. If universities provided staff with adequate and quality training to facilitate the use of technology and E-learning systems then staff would, in all probability, find E-learning systems easy to use. It is important that universities promote and educate staff to use E-learning systems rather than forcing them to do so.

**Technical expertise:**

Lack of personal technological expertise in solving technical problems is one of the main factors affecting an E-learning programme (O’Neill et al., 2003; Berge and Muilenburg, 2006). Valentine (2002) added one overlooked factor in the success or failure of E-learning programmes, i.e. the role that technicians play in E-learning.

The author noted in the findings that there were disparities between Case Study “A” and Case Study “B”. In Case Study “A” it was noted that the most of the answers from SL, HOD and STM indicated that they have some professionals who undertake the maintenance of equipment (for example, computers) and that they also have some expertise in programming, multimedia technology and experts in information technology, and project management. In Case Study “B” most of the answers from the interviewees indicated that there was a shortage of such professionals who can maintain equipment such as hardware and multimedia technology; there was also a shortage of specialists in software programming such as project management and information systems.

**Strategy:**

From the literature and the findings, the setting up of a strategy was found to be an important factor for the implementation of E-learning in the Libyan case studies.

This study concluded that the strategy has not only to be directed from the leadership, it also has to be established within each faculty to enable all participants/staff to work towards realizing the goals and objectives of such a programme and to ensure that work is undertaken towards achieving the essential goal of implementing E-learning.

The findings revealed that a strategy for the implementation of E-learning in Libya was non-existent. This was supported by SL, HOD and STM in Case Study “A” and
HOD and STM from Case Study “B”. One of the STMs stated that the technology was available and the adoption of E-learning should be a part of the University strategy.

Therefore, this study suggests that Higher Education in Libya needs to have a comprehensive and clear strategic plan to implement E-learning programmes, and the author believes that postgraduate programmes with their fewer students could be used as a pilot for E-learning systems after an E-learning strategy has been introduced.

**Overcoming factors that affect the initiation of E-learning in Libyan HEIs:**

Overcoming the factors that prevent the implementation of E-learning programmes in Libya is very important to Libyan HE, because the country needs to develop its HE universities and education system to reach everybody in the rural areas and to face an increasing demand for higher education and a growing number of students. Therefore, it should take urgent steps to overcome these factors.

Firstly, as this study suggests in the discussion on strategy, ministry of Higher Education in Libya needs to have a complete strategy plan to implement E-learning programmes with specific guiding principles to follow in E-learning development, and should submit a draft to the universities on an E-learning strategy, so that they can commence preliminary steps to implement E-learning and encourage strategic projects in Libya HE. The strategy should encompass project management and educational objectives; technology infrastructure, training and usage support; comprehensive E-learning-related training programmes and a strategy for technical support and maintenance. (Croft N. 2011)

Another point is equality in the technical infrastructure in all Libyan HE universities and faculties. This is very important as it will enable them to share information, collaborate, and allow staff to gain knowledge and skills by technology. They should all have a good infrastructure as the researcher noted that there was a notable difference between the two case studies: Case Study A had a good infrastructure and Case Study B had a lack of infrastructure and in Case Study B many of the interviewees acknowledged the need to launch a technology infrastructure as a prerequisite for the implementation of E-learning initiatives.

Moreover, HE should organize seminars and workshops, lectures and conferences about the value and benefits of E-learning to increase the overall awareness of a technology culture and the fact that it should be launched at all levels in the HE universities.

The implementation of E-learning should be understood well in advance and awareness by staff in Libyan HE universities must be raised by staff attending lectures (there was a lack of attendance at such events in Case A), seminars and conferences. All this must take place in order to raise the awareness of electronic culture (Case Study B) within the STM to allow for the application of electronic culture, because currently the STM culture, especially within the older generations, hinders the implementation of E-learning.

Furthermore, Libyan HE should establish an independent training department to unify the training strategy in order to implement such a programme and to determine training objectives, needs & types, to provide quality training, and to
select targeted individuals and the quality of trainees for E-learning.

The training department should also respond to the training needs of each HE university with particular regard to E-learning and should implement a clear plan for training in order to increase the capacity and development of staff knowledge and skills.

The training should include technology especially training on computer skills, introduce ICDL and the internet and it should include training on the English language. Additionally if the STM gained more knowledge, skills, and experience of technology and became more ICT literate, then they would be more prepared to use such programmes.

The ICDL exists to assist individuals in performing their work and duties by using computers and to perform the required tasks. The ICDL system encompasses seven training units: the basic concepts of information technology; using a computer and managing files; word processing; spreadsheets; databases; presentations, and information and communications. ICDL courses will provide trainees with a solid foundation of basic skills to help them use computer skills efficiently and with full confidence especially for the older generation STM. New computers users and staff with a poor knowledge of the English language can use the Arabic version of ICDL.

In addition, there is a need to utilise training taken abroad if it is not available in Libya in order to increase the effectiveness of STM in the use of technology and to increase their technical skills so that they can be technically qualified.

As a result, training should have a strategy which should be addressed early on with other strategies and should encourage STM through a motivation and reward system.

A further point which should help overcome resistance to change is a reward system which is likely to increase energy, creativity, provide complete and better services and improve productivity from STM to help in the implementation of E-learning. Also this reward system should be aligned to motivate staff performance that is consistent with the universities’ strategy, to attract and retain people with the skills and knowledge required to conform with the HE strategic goals, and to create a supportive culture and structure. (Nicholas Croft 2010)

**Conclusion:**

The implementation of E-learning can create enormous changes within a Libyan HE university, so it can expect to face factors such as resistance to change as the institution changes the way instructors teach, managers manage, and reforms are undertaken of the current work process by changing boring routine work, eliminating bureaucracy, and improving transparency.

The factors affecting the implementation of E-learning should be well understood in advance and increasing awareness by the staff in Libyan HE universities must be raised by staff members attending lectures, seminars and conferences. The failure of Libyan HE Institutions to accept and develop a vision and strategy to understand the current emerging advanced technologies will seriously undermine any potential to implement the E-learning process. As a result, training should have a strategy which should be addressed early alongside other strategies and should encourage STM through a motivation and reward system. E-learning requires a minimum technological platform which
includes necessary hardware, adequate telecommunication capabilities and access to software. Lecturers should be selected based on their experience, potential and outlook toward new technology. Experts in multimedia technology have to support teachers in the activities of organization and management and, to some extent, the development of E-learning courses as well. The implementation of E-learning programmes represents a change in teaching style and materials.

This paper has contributed to the discussion how Overcoming factors that affect the initiation of E-learning in Libyan HE.

References:


