

The Virtual University: Trends and Challenges in Libya Elmergib University as Case Study

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ABSTRACT

E-Learning is playing a significant role in education to improve student's skills and teach them new ways for managing their knowledge and information. Recently few public universities in Libya have initiated limited attempts to use e-learning alongside traditional classroom. However, different obstacles are preventing successful adoption of this technology. It is obvious that effective ICT implementation should focus on understanding individual faculty needs. Then a thorough investigation is conducted in relation to the importance of implementing electronic education at Libyan universities, and including faculty members in every step of the planning and implementation of up-to-date technologies, as well as the challenges and solutions of ICT implementation. This paper focused on the overall scenario of virtual universities by narrative review of past researches.

The present research aimed to highlight challenges that hinder effective implementation of e-learning in Libya and recommend possible solutions to tackle them. A total of 70 respondents voluntarily participated in this research. They consisted of academic staff (N=8), professors in charge of e-learning (N=2), and undergraduate students (N=60). The method used to collect data is a survey instrument. Data was then analyzed and reported quantitatively and qualitatively. This provided in-depth understanding to the current status of e-learning in Libyan universities and highlighted major hindrances of its successful application. Based on this analysis, the study proffered many recommendations that should be considered in order to fully benefit from e-learning technologies and the possible of converting Elmergib university to virtual university.

Keywords: Information Communication Technologies (ICTs), e-learning, virtual university, e-university, challenges of e-learning .

1. Introduction

The impact of communications and information technology has extended to the fields of work, where the tremendous and successive developments in the field of communications and information have created a new reality that will bring about major changes in various aspects of economic, social, military, space and other life, and thus many new specialties

have been created, and then new areas of work. In addition to the decrease in demand for some specialties and other jobs.

In the recent years, we have seen exponential growth of Internet-based learning. The transition to online technologies in education provides the opportunities to use new learning methodology and more effective methods of teaching. The major perspectives of using e-learning can be generalized as follows: an opportunity for overcoming the limitations of traditional learning, such as large distance, time, budget or busy program; equal opportunities for getting education no matter where you live, how old you are, what your health and social status is; better quality and a variety of lecture materials; new consortia of educational institutions, where a lot of specialists work in collaboration, use shared resources and the students get freedom to receive knowledge, skills and experience from other universities [1].

On the other hand, with the emergence of the Corona (COVID-19) pandemic globally at the present time, it has led us to resort to alternative methods to obtain high-quality education, and virtual education is one of the important means by which we can take advantage of modern technology to provide this type of education to students, as virtual education university students and others of students can acquire any kind of knowledge that they wish to obtain.

In Libya, there are significant differences in the perceptions of Libyan academics as to the potential use of the Internet for research purposes and the likely benefits from Internet access. To avoid potential problems in using the Internet for research purposes, a study by a Libyan researcher in 2012 [2] mentioned that there are a number of factors that could keep staff in Libyan universities from using the internet for academic research purposes, and the study proposed several solutions to reduce the level of resistance displayed by some members of academic staff to the wide use of ICT tools and implementation of the national ICT policy, the most important of these factors: lack of access to specialized on line databases, lack of internet access, low speed of connection, quality of the information source, system availability, lack of skill in the English language, technical difficulties, high cost of Internet connections, lack of training, computer support and Internet skills, social factor and lack of encouragement and incentives from the educational institutions.

Today, many of high educational institutions have begun to use e-learning, so there is a need to know a new term called virtual university, which is an educational platform that simulates all university services through the Internet by creating a campus environment in accordance with criteria to be determined by academicians specialized in educational institutions [3]. Improving education systems in universities has become an essential concern for all nations, with a considerable amount of research being conducted in this area, particularly in terms of studying tools to facilitate the learning process and thereby improve the outcome and quality of national higher education systems. In the context of contemporary higher educational systems, Information and Communication Technology (ICT) is considered an essential tool to facilitate the acquisition of cognition and knowledge [4].

2. Paper Objectives

In this research, the main focus is on Libyan academic staff and student perspectives of what are the key challenges to the use of e-learning in higher education. And how successful the idea of converting the higher education system to a virtual education system by using e-learning. According to the best of the authors' knowledge, this area of research is unexplored in Libya because e-learning is a new experience in all Libyan universities. Hence, the present paper seeks to:

- identify the current status of e-learning application in Elmergib University.
- highlight challenges that hinder the effective integration of e-learning.
- recommend possible practical solutions that can be followed to address such barriers.
- The possibility of converting Elmergib University into a virtual university.

3. Related Works

In this part of the paper, as shown in Table 1 we give some experiences of Arabic countries to achievement and practical situations in which the concept of virtual university has been applied and works well. The papers recommended that is the issue of improving the quality of education can be addressed through the use of ICT. This approach will provide the opportunities for modernizing the education content, expanding the access to education, transferring the teaching sessions from traditional audiences to virtual ones and ensuring their flexibility, enhancing the learner's independent work and optimizing the teaching process. In order to realize the concept of the application of distant technologies in education, it is important to make global changes in the education system as a whole and, first of all, the classic university model should be changed into the electronic university model.

Table 1: Related Works

Country name	References	The experiences
Saudi Arabia	[5]	The KAU university created a program that underwent rigorous course development and quality control to engage students more actively through asynchronous technologies-virtual classrooms for every face-to-face hour of every course- with synchronous components, using a learning management system developed in-house to integrate with all other university system.
Iraq	[6]	In this research, a simple prototype has been implemented to introduce some e-learning tools and technologies to the traditional education in the technical college of Mosul to let the students and faculty staffs get used on it. The prototype was implemented using Microsoft Windows 2003 server with other supporting servers and software.
Jordan	[7]	This study identified prevalent faculty perceptions toward the use of e-learning tools in higher education at one public Jordanian university, explored the level of integration of e-

		learning at the UJ, and examined the factors that are related to faculty's attitudes toward the use of e-learning tools, and probed what one academic institution can do to improve the utilization of e-learning at its campus.
Algeria	[8]	This research trying to assess the experience of E-learning site of the University of Ouargla and the extent of professors response and students to this modern method through the use of a tool for education, communication, knowledge sharing, publishing information and even conduct examinations on the line.
Syria	[9]	This study aims at exploring the impact of electronic services provided the Syrian Virtual University(SVU) on student satisfaction, the results indicated that the relationship between electronic services dimensions and student satisfaction at the SVU were positively significant except for the bulk SMS dimension.

4. Virtual University

In virtual university the term virtual is taken form computer science where ICT based experience transferred original experience in virtual reality, become popular in the 1990s [10].

"virtual university" emerged about 1995. Website of the International Council for Distance Education(ICDE) defines virtual institutions as "institutions which offer programs only by electronic means, and which are not open universities" .

Wikipedia offers more inclusive definitions:"A virtual university provides higher education programs through electronic media, typically the Internet".

Virtual universities are new types of education institutions that fully realize potential opportunities of ICT, offering educational programs with the application of only e-learning and distance learning technologies. Virtual universities do not have buildings, student dormitories, campus, cabinets for administrative staff, and lecture halls. It consists of collaborator, co-workers, trainers, educators, technicians, employed and interactively educated learners who live in remote distances, often beyond the national boundaries using modern ICT. This model has not been fully implemented yet. It faces serious difficulties, particularly the problem of virtual university accreditation, in other words, gaining public trust, obtaining the right to provide the diplomas and certificates and appropriate degree [11].

Generally there are some functions of virtual university. Firstly, create learning environment for collaboration in the development and use of emerging technologies that are needed to develop virtual education model, secondly, support services to students, which would include assessment of current skills and knowledge, advice regarding academic plans, quality, and record of learning, finally, improve the management in the organization,

planning, design and delivery to learners of programs, curricula and courses that are pertinent to the human resource development [12].

4.1 Major differences between the traditional university and virtual university

in view of the promising hopes of virtual universities in development of education, the following is a comparison between virtual universities and traditional universities, with mentioning the advantages and disadvantages of each (Table 2) [13] [14] [15] [16] [17].

Table 2. *Major differences between the traditional university and virtual university*

Traditional university	Virtual university
A primary source of learning is the teacher.	A facilitator of educational resources is the teacher.
The teacher guides the student.	The student learns self.
Learning independently and not groups.	Learning collectively through student interaction.
The same thing is taught to all students.	Every student learns what he wants according to his circumstances.
Time and place limitations.	Time and space flexibility.
Being know to the teachers and the students and cultivation of social community.	There's no face to face interaction between teacher and student.
More expensive to provide.	Cost-effective for learners.
Immediate feedback.	Lack of immediate feedback in asynchronous e-learning.
Result by test mark.	Result by electronic work file
Educational environment is school .	Providing higher education opportunity for anyone in different major and prestigious universities and potentially available to global audience.
Subject matters are size limited & selected.	Variety of educational techniques in e-learning.
Educational interaction is direct, face to face.	There are technological limitations and when one is offline or the system fails, it cannot be used.
Supervising of the students is periodically face to face , limited in time.	Supervising of the students is difficult.
Motivating students.	Students are more motivated to learn(due to their self-centeredness).

4.2 Importance of Virtual University

The importance of virtual university can be derived in the following points:

- Promotes formal and informal learning.
- Enhance capacity of distance learning.
- Transfers the form of distance education system into new digitalized form.

- Provides educational opportunities to students who would otherwise not have them.
- Provides education to increasing number of students.
- Smash boundaries of culture, distance and nations.
- Rubs the blueprints of mortar institutes and stops degradation of efficiency de to building bricks.
- Boosts education capacity with limited costs.
- Give the chance to equip with knowledge to working adults.

4.3 Tools of virtual university

The virtual universities system is built to suit all user's needs so that they can acquire knowledge. The system often includes student-teacher communication tools, test tools, and other create the main tools bellow:

A. Content Management System(CMS):

The main content management of the university on internet is interested in the means of delivering the content of the courses [18].

B. Learning Management System (LMS):

This system often includes the management of courses, online discussions, courses and homework [19].

C. Human Resources Management System

strategies that contribute to the implement it is the human resources management of the University"s objectives [20].

D. Library Management System :

This system contents of a large amount of scientific resources and data that the student needs during his study at the university[21].

E. financial Accounts Management System:

The purpose of this system is to manage the salaries of the employees of the university of teaching and administrative staff in addition to managing the tuition fees for students and all accounting matters related to the needs of the university equipment [22].

F. Exam Management System :

This involves the use of ICT in the presentation and processing of evaluation materials, the e- assessment include exams with a multiple choice questions constructed on machine grading this technology provides a more intelligent access to applications and users [23].

5. Research Methodology

This research sought to identify the main challenges in e-learning and convert the Libyan universities to virtual universities. Generally, responses were classified into either external or internal factors. The former is related to educational institutions or current circumstances in Libya. The latter, on the other hand, is associated to intrinsic features of users themselves.

Table 3 depicts these two categories. The interesting result is that both academic staff and students highlighted similar challenges. This suggests that decision-makers, leaders, and e-learning administrators should exert great effort to address them.

Table 3: *External and Internal Factors*

	N of lecturers= 8	N of students= 60
External Challenges	%	%
Low internet bandwidth	22.97	62.5
Insufficient financial support	18.91	25
Inadequate training programs	54.05	62.5
Lack of technical support	20.27	25
Frequent electricity shortage	6.75	12.5
Internal Challenges	%	%
E-learning literacy	31.08	50
Lack of awareness, interest, and motivation	47.29	75

5.1. External Challenges

External challenges include technical implementation of e-learning. Looking at the results in Table 3, many lecturers (22.97%) and most students (62.5%) agreed that low internet bandwidth is one of the issues hindering successful application of e-learning in Libya. Users need a long time to upload or download, for example, pictorial learning materials such as videos, and graphs. It is noteworthy that students have identified this issue more than lecturers because they may not be able to afford.

Another hindrance towards e-learning application in accordance with lecturers (18.91%) and students (25%) is the shortage of funding. However, more attention should be given for the requirements of e-learning integration.

In addition, Table 3 shows that most lecturers (54.05%) and students (62.5%) pointed out that intensive training programs are required in order to enhance user skills towards computer and e-learning technologies. Undoubtedly, lack of individual skills can negatively affect their intention to use e-learning.

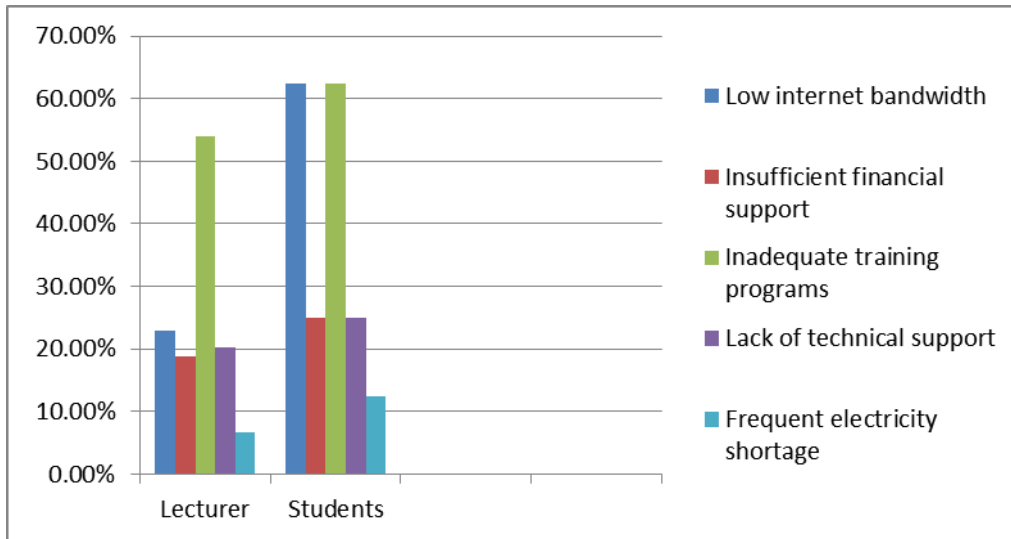
Successful implementation of any technology cannot be achieved without professional technical staff to set up and maintain it. As demonstrated in Table 3, instructors (20.27%) and students (25%) found that there is a lack of technical support to address issues that users may face. This means that preparation of professional staff should be a first step before launching a system (we mean here convert the traditional education system to virtual education system). As such, any failing in the system can be directly tackled to prevent user disruption.

Furthermore, results in Table 3 also demonstrated that few lecturers (6.75%) and students (12.5%) considered frequent electricity shortage as a factor that negatively influenced successful e-learning implementation in Libya. On the other hand, people use many

alternative methods to get their minimum requirements of electricity. This may explain why only a few participants have mentioned this as a challenge that affects the application of e-learning.

Looking at Figure 1, we see that there are obstacles to activating the online educational system and transforming Libyan universities into virtual universities. But with the current state of students staying home due to the Corona pandemic, we used social media and a Google platform to give lectures. And this step is considered relatively successful in order to save time and not to miss the semester specifically for graduate students.

Figure 1: External Challenges



5.2. Internal Challenges

Internal challenges are more relevant to user willingness to move from traditional to more advanced teaching and learning approaches. Additionally, some users believe that e-learning means delivering learning content electronically by, for example, computer, iPhone, and mobile devices, whether offline or online. E-learning, however, entails a much wider concept than this superficial perspective. It includes exploiting the advantages of e-learning malleability to integrate pedagogical and learning theories [25].

The results in Table 3 exhibit that many lecturers (31.08%) and half of students (50%) consider e-learning illiteracy to be hindering the effective integration of e-learning. Unsurprisingly, modern instructional technologies have recently been introduced to the Libyan Higher Education context. Therefore, older teaching members and those from humanitarian fields are unfamiliar with such technologies.

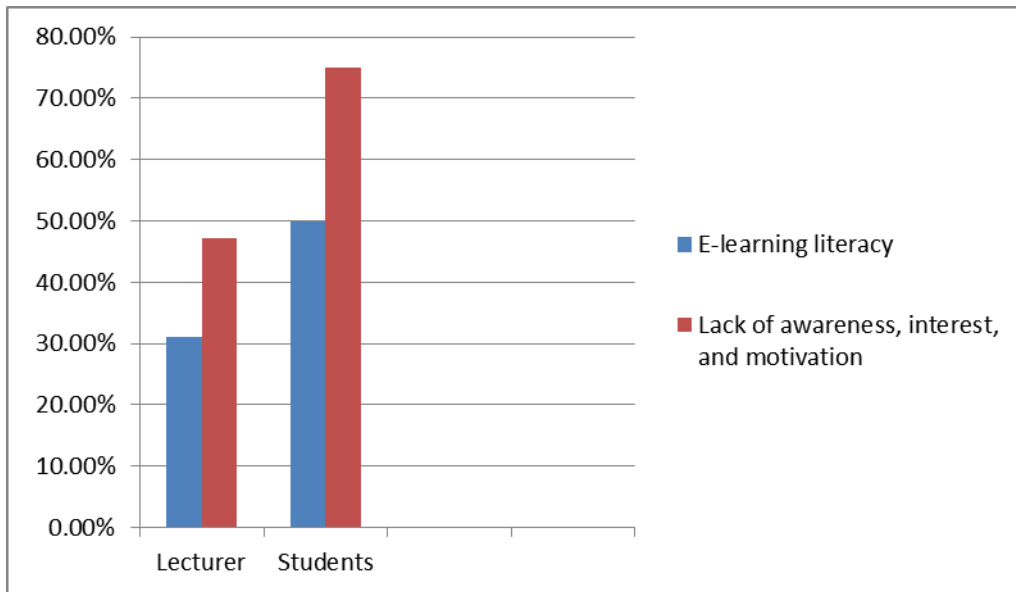
Table 3 also demonstrates that both staff (47.29%) and students (75%) pinpoint unwillingness, disinterest, and demotivation as other major challenges that hinder e-learning

uptake. Some users resist any new experience. Respondents mentioned several aspects that could lead to such a negative attitude. For instance, the preparation of e-learning content requires more time than the traditional approach; e-learning will reduce teacher roles in educational practice; and the advantage of e-learning is limited to uploading electronic lectures only. Based on such perspectives, they have not found a difference between e-learning and other communication technologies such as email or even distributing written lectures in classrooms.

Accordingly, huge effort should be directed towards extending their academic understanding about the potential pedagogical impacts of e-learning on different learning aspects such as learner performance, satisfaction, and engagement. Academic staff should have an obligation to implement e-learning in order to fulfill the goals of all students more easily and enjoyably.

As shown in figure 2, a budget for establishing an integrated e-learning should be prioritized, as well as other necessary requirements. Also, a systematic strategy should be followed to implement e-learning. Since it is a new experience for Libyan universities.

Figure 2: Internal Challenges



6. Conclusions

The present research aimed to cast some light on major challenges that hinder effective application of use e-learning in virtual universities, and How effective is the transformation of Libyan higher education into a virtual education under realistic conditions. It was suggested to use e-learning methods and convert higher education in Libya into virtual education due to the Corona pandemic. Findings exhibited that the use of e-learning in Libya is still at a very early stage. In addition, it was illustrated that most public universities

have started limited attempts to apply either custom or open source e-learning applications, but the majority of academic staff still do not have enough knowledge and skills to use it properly. This investigation confirmed the findings of existing studies about obstacles to e-learning integration in Libya. Causes that led Libya to be later to implement e-learning may encompass the previous isolation of staff members from the scientific world, the delay of introducing e-learning technologies to Higher Education, and the continuous national instability and insecurity.

Pertaining to the present investigation, five external and two internal challenges were demonstrated as a result of the quantitative and qualitative analysis. The main barriers comprised, but were not limited to, low internet bandwidth, insufficient financial support, inadequate training programs, lack of technical support, frequent electricity shortage, e-learning illiteracy, and lack of awareness, interest, and motivation toward e-learning technology. The key issues as identified by the majority of participants were lack of training programs. Based on the discussed barriers, many recommendations were provided. We hope that following them can lead to effective e-learning integration in Libyan universities. It is hoped that in the near future we will witness evolution in the e-learning sector as in other neighboring countries. And similar to the results of the questionnaire, it became clear that transforming the computer department into a virtual department requires the spread of the Internet among students and professors, increasing their knowledge and their use of electronic learning methods.

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