Issues and Challenges of using E-Learning in a Yemeni Public University

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Abstract

Yemen is confronted with several challenges in implementing e-learning in public universities. Thus, this research paper aims to identify and addressed the major issues and challenges faced by a public university in Yemen in establishing e-learning as a successful medium of imparting learning process. These challenges and barriers are discussed in detail. Many issues of e-learning relevant to the context of Yemen are also identified based on literature review. This paper also discusses the enabling factors and benefits for using e-learning. Two separate research methods are implemented: A survey and an interview to study the respondent's individual learning experience and what are the challenges and problems of using e-learning from their point of view. This study was conducted at Hodeidah University. Two major groups of informants are used and they are academic staff and administrators in the university. Findings show that barriers such as lack of quality e-content, lack of awareness, lack of skills, lack of foreign language skill, attitudinal hampering, infrastructural obstacles, cultural barriers and high rate of computer illiteracy in addition to barriers related to integrating e-learning into traditional education methods are the major challenges of implementing e-learning. The results show that all the obstacles can be categorized into five dimensions which are a human constraints, administrative constraints, technical constraints, financial and physical constraints. The results also revealed that factors such as technical suppor, social and cultural support of e-learning, financial support for instructors and faculty members, improving working conditions, improving technological background knowledge, improving foreign language skill, providing royalties on copyrighted materials and academic staff attention in professional development are the important issues in implementing e-learning in any public university in Yemen.

Keywords: E-Learning, Public University, Yemen

1. Introduction

Information technology achieved robust growth which made it a requirement for e-learning to occur quickly. Inventive thinking about gaining new knowledge as well as the competence to manage professionally within the existing resources are required to meet new problems and challenges. The rapid growth of e-learning comes as a result of the integration of technology in education which has been influenced by the advent of the Internet and other Information Technology[1]. In the last ten years, the use of e-learning is increasing and has become a system offered by most schools and institutions of higher education all over the world. Currently, e-learning is the common term used to describe the various uses of information and communications technologies to enhance learning and teaching using new strategies. This comprises computers, Internet, mobile phones, Learning Management Systems (LMS), Televisions, Radios and any other technological tools that can use to improve and increase teaching and training activities and develop the learning processes. E-learning is also a uniting term used to define the fields of online learning and teaching, web-based training and management, and technology delivered instruction[2]. It simply means working in an electronic environment. In education and training, e-learning is a technique that is developed from online learning which authorizes to share information and learning at any time and place. In[1] stated that for an institution to be able to adopt e-learning it must provide sufficient and credible technical infrastructure

to support e-learning tools. Moreover, instructors and students must have the skills that are prerequisite to utilize e-learning.

According to[3] instructors must also design their courses to integrate e-learning efficiently into the teaching process. In[4] stated that successful implementation of of e-learning across any institution depends on different issues, such as, the accessibility of technology, and how lecturers and students are supported in the use of technology.

The transformation of learning method can present new challenges and problems which are associated with the changes in the instructors' cultural background and enlarging the scope of training for instructors and learners. These parts need to be implemented successfully to gain an inclusive enrichment of learning practices of students and staffs, which are improved through the proper use of technology. Unfortunately, developing countries like Yemen is still away from getting the entirely benefits from e-learning because of the high cost of infrastructural development and poor public access to internet and other ICTs. Although the government is committed to implementing ICT in the education process, learning in an e-environment is still a big challenge in Yemen because of several issues and challenges. Therefore, this study sets out to identify the issues and challenges that face the implementation of e-learning in public universities in Yemen as a successful medium of imparting education.

2. Literature Review

Despite all the obstacles faced by e-learning in Yemen, the Ministry of Higher Education has laid the basis for e-learning projects through development in ICT infrastructure, information Technology systems, and information services in the public universities. In recent years, the ICT area has received a great attention in Yemen. It witnessed a sequence of developmental and transformational phases aimed at creating an information rich society. Yemen is competent to achieve a number of accomplishments in the the infrastructure part, developing projects, improving opportunities for the flow of information, electronic applications, the right to access information, and promoting new skills and capabilities[5].

The review of the existing settings and assessing the rudiments and indictors of development towards the information society. The information area in Yemen is considered one of the economic sectors that need promotion and motivation of competition.

2.1 Initiatives and Projects For ICT Infrastructure and Development of New Services

The information and communications sector in Yemen is witnessing fast developments that stand out through the development of private sector investment in information and communications technology[5]. The initiatives and projects are considered the most important aspect for progress in this sector which aiming at developing the ICT infrastructure. In this regard, the current five-year strategy confirmed and approved a number of ICT projects. New encouraging settings were prepared for giving licenses to ISPs. A national plan was also prepared to offer inclusive communication services. Furthermore, Next Generation Networks (NGN) were installed and activated with regard to the ICT Infrastructure. Additionally, a number of fiber optic paths were implemented[5].

2.2 Internet Infrastructure

Since 1995, Yemen has been linked to the outside world through a fiber optic network and through an undersea cable from to a number of Arab countries and South-East Asia and Europe. The (Dial-Up) telephone lines in Yemen remained the means available for users to access Internet. The ISDN service was available for users since 2001. As a first stage, at the end of 2006, the Ministry of Telecommunications and IT in Yemen declared the launch of wireless Internet service (Wi-Fi)[5].

2.3 ICT in Education and Training in Yemen

In 2004, World Bank listed Yemen within the Fast Track Initiative for the Development of Education.

Currently, there are more than (605) schools equipped with computers labs and Internet access was introduced to 55% of the schools. In 2007, a computer course was provided in secondary schools, and the computer course book were distributed to the schools. In addition to, copies of technical manuals for learning resource centers were printed and distributed to a number of schools in the republic.

February 2009, a project -Yemen Innovations in Technology- Assisted Learning for Educational Quality-

(INTALEQ) was launched to teach science and math through the web science in secondary education. The project was implemented in 20 schools. Additionally, a number of ICT colleges provided students with Internet. Yemen confirmed a national strategy for Primary Education (2003-2015), the national strategy for higher education development (2006-2010), and the national strategy for Technical Education and Vocational Training (2005-2014). Most of these strategies are looking forward to fulfil the main objectives of the integration of IT in the different educational stages.

2.4 E-Learning in Yemen

Yemen entered e-learning field on a limited level. The Institute of telecommunications collaborated with Jordan Telecom institute to provide distance learning services. In addition, in 2005, some educational institutions conduct ICDL examinations via the Internet. Morever, in 2003, a branch of the CISCO Academy was established in Yemen. On the other hand, in 2007, an IT center has been established in the Ministry of Higher Education as part of a project to link Yemeni universities to a single information network[5].

Furthermore, more than 732 teachers were trained in the computer field. A number of public and private universities facilities are also established to enable the teaching of ICT disciplines such as Computer Science, Engineering and Programming, Communication Engineering, and information Technology, however, however, the set of courses are not being updated to keep up with new developments. Additionally, Some private universitities and academic institutions are introduced a number of online courses for students to study through the internet to start applying the distance learning gradually. Where distance learning applications are still in their infancy. Otherwise, there are no real applications of e-learning.

2.5 Reasons for E-learning

2.5.1 Accessibility

E-learning give students a chance to study individually and access to course material when needed at any time and any place without the stress of missing important information[6].

2.5.2 Low Delivery Cost

The materials of e-learning has no expiry date after developed and uploaded online. It also could be utilized anywhere in the world[7].

2.5.3 Bridging the Gap

E-learning decreases the gap between theoretical and practical learning where many internet websites provided online learning and training[8].

2.5.4 Deep Learning

In e-learning, students are required to participate with information available on the internet which encourages active learning[8].

2.5.5 Shared Learning

E-learning increases shares learning by promoting interaction among students from various backgrounds.

2.5.6 Freedom of Speech

In a research study, the learners considered e-learning as a facilitator of expression freedom to concentrate on deep learning[9].

The existence of new technology does not ensure successful implementation because of the use of technology will brings new challenges. Thus, understanding the views and perceptions of users related to the technology requirements is extremely important. It is important to meet the concerns of the students in order to increase the educational perspectives of e-learning. Therefore[1,10] proposed that the use of adaptive e-learning style, which permits adaptation according to the information and performance level of the individual user. In[1] also stated that ignoring relevant issues may possibly lead technical problems, learners' frustration, and reluctance to the use of e-learning.

2.6 Issues and Challenges of Implementing E-Learning

Despite the advantages of implementing e-learning, there will be several obstacles and challenges that must

be overcome them in order to reinforce the efficiency of e-learning. These challenges are summarized as implied by[10]:

2.6.1 Awareness

There is a lack of awareness among the individuals in general, particularly parents, of the usefulness and effectiveness of e-learning. Most of the people feel that the traditional method of learning is more effectiveness and better than e-learning.

2.6.2 Low Adoption Rate

Generally, most of the institutions around the world are enthusiastic to adopt e-learning. However, problems such as lack of e-content, lack infrastructure, has led to low implementation of e-learning.

2.6.3 Bandwidth and Connectivity Issues

The design of interactive e-learning content requires the use of multimedia and software to design the course. However, downloading of e-content will be slow, due to the limitations of bandwidth and internet connectivity. And this will influence the easiness of e-learning and creates frustration among students.

2.6.4 Lack of Quality E-Content

Presently, Yemen has a lack of good quality of e-content. This is because the shortage of specialist and expertise, and massive financial resources which are necessary for preparing and developing the content of e-learning. Thus, most of the e-learning contents have low impact on students.

2.6.5 Difficulty in Engaging Students Online

Engaging students have effectively been one of the most important issues in defining the success of any e-learning project. E-learning demands a high level of motivation however, there is a lack of self motivation among students. Students find it complicated to transform from the traditional style of learning to the e-learning style.

2.6.6 Language Barrier

Most of e-learning contents are written in English. And this also considered one of the issues that has hindered the successful implementation of e-learning, especially in non-English speaking countries like Yemen. Although, a lot of students like to engage and enroll in the programs of e-learning, however, they are hindered to do so because of low self-confidence in understanding the contents of English written materials. Thus, students who have low skills are not expected to join e-learning programs because of the spacious use of English in the content of e-learning. A research study conducted by[11] in Palestine, the researchers found out that most of the students realized that the language was an obstacle to e-learning. This result is also in agreement with previous studies in differnt developing countries.

2.7 Challenges that Face Higher Education in Yemen

According to[12] the learning and training process in Yemen need to make an effort and increased the resources for the development of learning in two sides which include quantitative and qualitative approaches. Universities in Yemen still used the traditional styles in teaching and learning which include notes and pen which are not proper for e-content and do not correspond with any new upcoming. According to[12] the challenges that are facing the higher education in Yemen were divided into two types of challenges external challenges and internal challenges, the external challenges comprised of two sides: Firstly, globalization and its impacts in increasing the cultural exchanges. Secondly, the role of universities and their efforts to keep the national identity in the massive flow of information, development projects and programs and preparation the society with high values and strong cultural background that help in a rationalistic opening with other cultures, the promotion of development the Information and Communication Technologies (ICT), in addition to the knowledge explosion which requires from Yemeni government to look earnestly for a method of developing the abilities of the universities and other higher education institutions in Yemen, particularly the main public universities and the scientific research centers.

With regard to the internal challenges, according to the research paper they were: how to raise the capacity of the universities, the shortage of investments in higher education by the private sector, weakness of internal competence, the limited development of research studies, the social requirements, and the lack for professional development.

3. Methodology

3.1 Data Collection

In this study a quantitative approach was used. A questionnaire instrument and semi-structured interviews were used to collect information about the participants' perception of e-learning and the major challenges and problems that face the implementing of e-learning in public universities in Yemen. All research questions addressed through the use of a questionnaire and interviews instruments. The research was conducted at Hodiedah University, Hodiedah, Yemen as a sample of the public universities of Yemen and because of this university has large support from the International Bank to implement e-learning. The participants of this study comprised administrators and academic staff (Lecturers) at Hodiedah University. Selection of lecturers who distributed the questionnaires to them were not random, but they were selected by age groups where half of them were under the age of forty and the other half over the age of forty for diversity in the information that were obtained. The interviews conducted with the administrators at the university and e-learning Center. A normal collection method was employed to collect respondents' perspectives about the issues and challenges of implementing e-learning in a public university in Yemen.

The questionnaire submitted to the e-learning center in Hodiedah University to distribute them to the targeted participants. The research developed a questionnaire composed of two sections:

Section 1: General information about their perceptions toward e-learning.
Section 2: Issues and challenges that are facing the implementation of e-learning in the university.

In the developmental stage, the questionnaire reviewed by experts in the e-learning center at the University of Hodiedah who with wide experience and keen interest in e-learning. In this study, of fifty distributed questionnaires, thirty seven were returned and analyzed. Open-ended questions were used. With the help of the e-learning center of the university, a high response rate from the faculty members and staffs was achieved. Interviews were conducted with some administrators by asking them specific questions related to the subject. The interviewees comprised the manager of the e-learning center in the university and others who have a direct influence on the implementation of the e-learning project such as academics and staff.

3.2 Data Analysis

The narrative analysis technique was used in the analysis of data obtained through questionnaire and interviews. Paper and pen were used during the interviews and then transferred to the computer.

4. Findings

The findings of the study show that both the staff and the administrators at the university are well aware of the importance of e-learning program. However, on the issue of implementation, there are many challenges. This section presents the findings of administrators and academics staff perceptions of e-learning project and to identify what is the challenges that face the implementation of e-learning in the university from their viewpoints.

Based on the feedback from the interviews and open-ended questionnaire, the following are some of the views expressed by the participants who are made up of administrators and academic staff in Hodiedah university.

4.1 Issues and Challenges of Implementing E-Learning

4.1.1 Views from Academic Staff Side

In relation to the participants' perceptions toward e-learning, the majority of participants have a general concept about e-learning, but most of them have a low level of awareness. Most of them prefer traditional learning model. One lecturer stated,

- *"I believe that e-learning is not reality ..and students will not take it seriously…"*.

And another wrote,

- "I*n my opinion, this is virtual ..I prefer to come to my classroom and use paper and pen"*.

Another lecturer wrote,

- *"I teach in the university from twenty years ago and I use traditional way in teaching and I can't change it"*.

Most of the participants from academic staff don't like to try e-learning. One of them wrote,

- *"I want to feel that I really teach ..I want to attend to the classroom ..meet my students …. "*

Some of lecturers mentioned that e-learning means use technology to learn and communication between teacher and students is a weak because the teacher will not be there. One lecturer wrote,

- *"I feel it is more difficult to give motivated to your students, the students will not physically there ..also, I will not spend my time with the students as traditional learning".*

One academic staff wrote,

- *"This form of education means no real communication between the student and lecturer, students and students and in my opinion this affects social communication between individuals .. exchange of experiences and prevents mixing between different segments of society…".*

Data relating to the questions about the challenges that are facing the implementation of e-learning in the university, most of the participants from academic staff asserted the importance of the infrastructure in the university.

The insufficient hardware and software in the university was considered one of the major challenges that are facing the implementation of e-learning. One of the academic staff wrote,

- *"The hardware and software that are available in the university are not enough and as I understand e-learning is learning in the labs using computers, and other hardware".*

And another one wrote,

- *"Where is the infrastructure that ensure the success for e-learning".*

Most of the participants wrote about the lack of power supply and one of them stated,

- *"Before any other challenge, where is the electricity supply which is the basic for any type of learning".*

Additionally, not all students have their own computers, one lecturer wrote,

- *"Me and some of my friends don't have computers and not all of us can use it.. because we don't have computer skills".*

Some of participants from academic staff mentioned that e-learning is difficult for students who live in villages where no electricity supply, computers and Internet connection, although these students really need for this style of learning to help them learn from their home. Another one wrote,

- *"I like this new style of learning ..but if any problem happened such as electricity cut off or slow internet connection, or any other techniques problems, I think with all these problems difficult to manage the class and time".*

Cultural factor and the perception of society about e-learning is also considered a major challenge in Yemen. One participant wrote,

- *"E-learning has become a necessary for a large segment of society who have to work and study at the same time but the challenge is in the society's perception for this type of e-learning".*

One of lecturer wrote,

- *"One of the main challenges from my point of view, in how we can persuade parents to accept and believe in eLearning as a form of learning because they don't believe that e-learning is real learning".*

Another wrote,

- *"Some students have to work to help their family, and they prefer to study in e-learning form, but what about the society's perception about their certificates and can they find work later?!!". And he added, " The success of e-learning depends on acceptance from society and to which extent they will accept it as a form of education".*

One of the these challenges that has impeded the success of implementing e-learning is the wide use of English language in the contents of e-learning, particularly in non-English speaking countries like Yemen. There is a lack of English language proficiency. One academic wrote,

- *"Most of our students face difficulty in reading and understand English documents, so from my opinion, this will be another challenge for us in addition to the lack of computer skills".*

And another lecturer wrote,

- *"For me the biggest challenge will be English language and I prefer to use any type of learning but in my mother tongue" Arabic content" because I and most of academic staff face problem in English language skills and difficult for us to learn in this age".*

Some of academic staff explained that e-learning needs spending more time in preparing the content. One of the academic staff wrote,

- *"e-learning need more time to spend in preparing the materials and activities that fit the course with low salaries, I think this is difficult for me and other faculty members.."*

One of the faculty members added,

- *"Where is the support for us as academic to spend most of your time to prepare affective materials and*

activities which are proper for this form of learning, I think this needs high salary. In addition to we will upload our materials online and will be available for everyone, we also need for providing royalties on copyrighted materials".

One of the faculty members added,

- *"I think also it is necessary providing royalties on copyrighted materials".*

4.2.1 Views from Administrative Side

Based on the feedback from the interviews that conducted with some administrators in the university, they explained the major challenges that they faced in the implementing of e-learning from their point of views.

One official at the university talked about the main challenges that they faced during their work,

- *"Many challenges faced the implementation of e-learning in public universities in Yemen and of course Hodeidah university one of them. We have technical challenges related to the infrastructure, computers, Internet connection speed,…etc. Another challenge is social barriers. We have a lack of awareness about e-learning, instructors, parents, students most of them don't believe in e-learning as a type of learning. We also need financial support to train the instructors, provide the content, prepare suitable labs and classrooms, we also have a problem in electricity supply… how will e-learning succeed under these conditions. We can overcome this problem in the university but what about the students?.... but we are on the way towards e-learning for at least a certain class of people who have no time to study on traditional way. Our government in Yemen has started to move towards eLearning and try to overcome some of the challenges, for example: All our students in secondary school study ICT skills before they reach to the university, instructors who want to work in public university have to pass ICT and ICDL courses and pass an extensive English course".*

The manager of e-learning center talked about the same challenges that was mentioned earlier and he added:

- *"In addition to technical and financial support, there are challenges such as the non-cooperation of faculty members, some of them do not have computer skills, lack of experience in the faculty members and they are not interested in professional development because they are not eager to change and they feel that e-learning system reduce their control of the instruction ..also*

me as a manager I need administrative support to facilitate some administrative procedures, not only at the university level, but at the Ministry level".

And another said,

- *"We also face a problem in the design of e-learning content and how to use effective strategies to ensure the effective access of information such as the use of multimedia, interactive materials and diversity of questions, in spite of all the challenges we seek to build a strong and effective approach in collaboration with the technical staff at the university for the success of the project".*

One of faculty members added,

- *"In addition to the physical and technical needs, e-learning needs an support through the workshops on awareness of the importance of e-learning, and have conferences. We can also invite faculty members for effective participation. This will encourage competition between the participants. During these workshops and conferences we will present concepts about e-learning and what is the best solutions and strategies. This is one of the challenges because most of faculty members don't have enough awareness about e-learning and this will reflected on the society as whole".*

Many faculty members are not satisfied with their work in e-learning and from the interviews with some faculty members, they also highlighted the following reasons for the challenges from their point of views: 1. High cost of living and low salaries, 2. Lack of adequate facilities in the university, 3. Lack of resources to attend conferences and workshops, 4. Lack of research facilities and funds, 5. Lack of teaching facilities, 6. Lack of electronic and print materials, 7. Poor work environment, because of many factors such as electricity supply and the slow of internet service,... etc.

Findings showed that barriers such as lack of awareness, lack of quality e-content, inconsistency of contents and methods, unavailability of proficiency, attitudinal hindering, social and cultural obstacles, infrastructural barriers, lack of foreign language proficiency and high level of illiteracy in computing, in addition to obstacles related to integrating e-learning into traditional learning and training systems are the major challenges of e-learning. The findings aldo revealed other challenges for implementing e-learning in a public university in Yemen which were: Instructors hesitate to

change; in addition to that some instructors do not have the proficiency and skills to use computers, and are not enthusiastic and keen to learn; furthermore, potential users are often unwilling and reluctant to gain the necessary skills to use new technology.

5. Discussion

Developing countries are faced with many e learning challenges. The research found out that instructors faced challenges with e-learning implementation that all instructors interviewed had little or no experience with online learning and teaching methods and as a result lacked confidence in the implementation of e-learning, slow Internet, and lack of software application and the poor ICT infrastructure. In fact, very few people have access to computers and the few who have access to the computer do not have knowledge how to use it and take full advantage of its use.

The concept of e-learning is seen to be attractive as a new style of learning which will affect positively on the development of learning and teaching in developing countries[13], with all these capabilities and possibilities there is no great efforts taken to support the implementation process. The study showed that e-learning in Yemen is still facing several challenges which are not only technological challenges,but also educational challenges, economic and financial challenges, as well as social and cultural challenges. This has been confirmed by[13] in research study in Russia indicating for the above challenges will progressively shift from technology issues onto learning process itself.

Changing instructors culture and background and motivating them to use technology in their learning and teaching is also considered to be one of the major challenges[4]. Faculty members have a preference to use traditional methods. In addition to, there are important technological isuues, which limit the developments[4].

According to the obtained results challenges such as lack of quality e-content, lack of awareness, lack of foreign language skill, incompatibility of contents, high rate of illiteracy in computer and skill unavailability, attitudinal hampering, infrastructural obstacles, cultural barriers are the main challenges of e-learning at Hodiedah university which are in agreement with the previous findings of some researchers such as[14–16].

The findings also showed that successful e-learning requires an appropriate computer infrastructure. The most significant aspects of computer are software and hardware. Availability of high quality software is the one of the main challenges in applying the new technologies in using e-learning which is in parallel to the findings of previous studies of the e-learning challenges for development of electronic enviroment in the universities which revealed that lack of appropriate and necessary software and hardware possibilities, the costs to access to internet and the low speed of the internet, limitation in bandwidth are among the main issues and problems that agreed upon unanimously by experts and the researchers[14–16].

The research also identified some challenges that hinders the implementation of e-learning in a public university in Yemen which includes: Instructors hesitating to change; in addition some of them do not have the proficiencies and skills to use e-learning and are not specially keen to acquire or learn new skills. These results are in consistent with[4]. The findings also showed that the instructors awareness and attitudes toward e-learning system need to be identified, discussed, and addressed to overcome the critical challenges e-learning implementation in a public university in Yemen.

6. Conclusion and Recommendations

Learning and teaching in an electronic environment is still great challenge in Yemen because of several issues and challenges. The main purpose of this research paper was to identify major challenges of using e-learning in public universities in Yemen. At the present time, due to several economic challenges, Yemen cannot afford wide access to all the latest fulfillments available for learning and teaching, in addition to enable new technologies and e-learning to be used widely in public universities. Some of these challenges included problems with access to computers and Internet, power supply, poor skills; low literacy etc.

Hence, all of the indicated challenges, based on the research and the literature review, are play a direct and major role in the level of implementing e-learning in public universities in Yemen. The results of the study from data collection by questionnaire and interviews showed that all the challenges and issues that face the implementation of e-learning in Hodiedah university

can be distributed in five dimensions which are a human constraints, administrative constraints, technical constraints, financial constraints and physical constraints. The results also found out that issues such as educational and cultural effectiveness in e-learning, technical support, social support, financial support and increase of income earning for instructors and staff, improving working circumstances, technological background, language skills, royalties on copyrighted materials and academic staff interest in professional development are the most important issues in implementing e-learning in public universities in Yemen. Based on the findings, the research paper suggests many areas for upcoming study. Conduct a follow up study on faculty members uses of e-learning systems in learning and teaching at any public university in Yemen to validate the outcomes of this study. The data obtained from this study, can provide information about what higher education institutions in Yemen can do to decrease and overcome the obstacles and challenges of e-learning implementation in public universities and other academic institutions of higher education where the level of technology integration has become a source of reliable data to assess university performance.

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