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The Challenges of E-learning Implementation among University Students in Yemen

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Abstract

E-learning is related to the use of electronic systems and applications within the learning processes. E-learning facilitates the possibility of remote interaction between students and experienced teachers/professors. In particular, E-learning facilitates an efficient way using appropriate information and communication tools and mechanisms. This study investigates the challenges that affect the E-learning implementation among university students in Yemen. This study aims to identify the factors that can affect the students' E-learning environment. A quantitative approach is employed in this study. Questionnaires were distributed to the higher education students who were studying either in public and private universities in Yemen. Research results indicate that there are significant factors including internet discussion, technology access, motivation, and important factors for success towards the E-learning implementation in universities in Yemen. This study also shows that E-learning implementation at Yemen is still at infancy stage in education system. Nevertheless, it is recommended to use E-learning platforms as the presentation of supporting materials instead of continuing the virtual teaching. This study reveals that cultural differences, technology enhancement and education policies are vital to support the implementation of E-learning in Yemen's universities.

Keywords: Internet Discussion, Technology Access, E-Learning Implementation, Yemen

Introduction

E-learning is executed as a teaching process that uses technologies, for example, CD-ROM, Internet or devices that have linked/supported by the internet (Bergadano, 2019). It is a process that dissociates the teacher and student learning interaction by computer-generated reality through electronic learning (Krouska et al., 2019). This makes the learning interaction a significant square. In this sense, the content of the knowledge is considered to be the main factor determining effective E-learning. Therefore, the E-learning process can include content related to learning objectives and the emphasis is placed on teaching methods and the use of media devices, including examples and practices that help students to learn in this process. According to Karkar et al (2020), E-learning is considered as an educational system that can

reach each remote individual on a web-based premise, with the help of extensive communication networks or nearby communication networks. In conventional learning environments, lessons are taught in classrooms and/or laboratories using different teaching technologies, while it emphasizes that students should be at the computer in E-learning approaches.

E-learning approach covers various electronic tools and mechanisms as part of the education process. This learning process includes web-based and Internet-based applications, as well as other electronic technologies, for example recorded videos in CDs and conferences that are conducted based on Internet applications as well as their features. The key factors that make the E-learning process attractive are the methods or approaches that provide learning opportunities around the world with temporal and spatial flexibilities (Meskhi et al., 2019). The student is unable to complete the individualized teaching-learning process considering the appropriate stages for the speed of individual learning. In another dimension, students can access lessons at any time ease of access to academic arrangements, and get quick respond for their problems. Hence, it is claimed that the teacher connects with the student due to different internet technologies (Aldholay et al., 2020).

Yemen is going through difficult and harsh conditions (Yassin et al., 2019). These conditions started in 2011, when the demonstrations were overthrowing the government through the Arab Spring, and events continued until the war began in 2015 (Isaac et al., 2019). All these wars and imbalances have led to the destruction of the infrastructure, economy and all aspects of development in the country. In fact, the education systems in Yemen have been facing lots of problems and shortcomings since the sixties, but it was improving slowly till 2011, when all educational systems fall. Education in general has been completely affected by these conditions, and therefore, E-learning has been severely affected and is facing many problems and obstacles in Yemen (Al-Absi and Yordzhev, 2019). E-learning depends on a strong and fast internet, but Yemen suffers from few and slow internet lines (Isaac et al., 2019).

Yemeni students in universities have no desire and motivation in moving towards E-learning. Despite all these, the blackout in Yemen constitutes a major impediment to accessing technology (Isaac et al., 2019). All of these obstacles and problems are among the most important challenges facing students in Yemeni universities in the direction towards e-learning. Through the above mentioned, the problem of the current study is summarized in identifying the challenges facing e-learning implementation in Yemeni universities. The constant evolution of technology, as well as the impact it has on education, constitute a motivation that drives institutions to think about the future of learning (Srivastava et al., 2020). In addition, as indicated before, it is evident that the demand for virtual education is growing due to its advantages, among which are the lean for learning throughout life; the use of technology; cost reduction; and its contributions to inclusion and access to higher education considered as one of the challenges of e-learning (Mohamed and Samsudeen, 2019).

Faced with the notable deficiencies in the quality of Yemeni education, it is imperative to take actions that contribute to reducing the gap with developed countries, especially if it is to join the Gulf Cooperation Council (GCC). On the other hand, it is convenient to take advantage of

the Yemen state investments in ICT, mainly the support of the training processes: broadband creates conditions that favour the offer of this type of programs, especially with the increase in coverage in the various regions of the world (Gulliver et al., 2018). In response to the growing demand for E-learning education in Yemen and in the world, thus the challenges towards the implementation must be defined well. In this regard, several previous studies such as Karkar et al (2020); Muilenburg and Berge (2005); Weber and Hamlaoui (2018); Barteit et al (2020) neglected the role of importance to succeed among the students, hence this ties the students to the e-learning in the long-term. Therefore, it is vital to investigate the critical factors that can influence the implementation of E-learning in Yemen higher education setting.

Literature Review

E-learning is related to the use of electronic systems and applications within the learning processes. E-learning facilitates the possibility of remote interaction between students and experienced teachers / professors (Drachsler and Kalz, 2016). Learning content is delivered remotely using an electronic device, such as the Internet, satellite television, radio, CD-ROM, to name a few. Harrison and Shortell (2018) included the consideration of electronic-based learning systems; for example, computerized joint work and virtual study rooms. E-learning is changing the direction of both global education and business readiness. The universal accessibility that E-learning offers, especially in developing countries, has attracted much attention from researchers in a variety of diverse cultures and contexts (Kelly, 2017) with numerous of them praising learning over traditional learning due to its combination of coordinated and non-concurrent structures (Johnson et al., 2017). There has been tremendous development in the arrangement of e-learning arrangements, raising expectations about the potential of E-learning (Bell et al., 2004). Despite such rhetoric, the protracted appropriation, dissemination, and exploitation of E-learning arrangements have been considerably less successful than initially projected (Strompolis et al., 2020).

The adoption of E-learning by universities implies a commitment to a pedagogical model in which students take greater responsibility for their education, contributing to the development of efficiency in the teaching process-learning, therefore, to the qualitative improvement of the educational model. For the implementation of these modalities, they have had to train their teachers, in order to make them competent to offer the same type of training to others. Meanwhile, they have had to make heavy investments to provide the facilities with an interconnected infrastructure through the networks, where teachers and students can access information resources in digital, audio and video formats, all necessary for the support, development and technical improvement of teaching and learning processes (Ali et al., 2018).

Previous studies have also shown that E-learning implementation and process have been progressively taking place in different countries. Ali et al (2018) stated that various previous authors contended that the implementation process of E-learning depended on the different countries' education settings. However, there have been very few systematic studies and practical actions that can offer clear directions regarding how this non-face-to-face process can be executed effectively. Previous studies have also suggested that the process should be for the incorporation of training actions in networks, whether they are carried out completely at a distance, E-learning, or in combination with face-to-face actions, in the educational field,

in order to offer quality education. According to O'Doherty et al (2018), research in the field of E-learning has gone through five major stages, namely reaction, learning, transfer, results, and return on investment.

Research Model and Hypotheses

According to Islam et al (2019), E-learning also has certain drawbacks. Among the reasons for low quality of E-learning are due to its concept which is at early stage, and the lack of infrastructures or facilities so as to support the process system. Indeed, the use of the Internet as fundamental means of transmitting information has its weaknesses which often associate with technical problems that the network still presents today: shortage of bandwidth in the networks, cost of connection and data storage. Although broadband has reached most companies, the capacity does not happen at students' homes or locality. In many cases, for the students, a long waiting time can discourage the learning and/or training process, and can cause dropouts (Pillai and Prakash, 2017). In addition, E-learning continues to have problem in terms of trust that links to the capability, capacity, knowledge and skills between parties involved in the use of E-learning platform including services providers, organizations, and the instructors/teachers (Chou, 2020). Previous literature such as Ellis and Roberts (2020); Azlan et. al (2020) as well as Zahedi and Dehghan (2019) found that the internet discussion skills relate to the E-learning implementation significantly.

Technology access is a tool that enables to obtain and process information, as well as to establish channels to record, store and disseminate new content. The use of these as a complement to face-to-face education, allows the student to have greater flexibility to interact with the available materials and with others, and perform their tasks in an asynchronous way. This means the students enter a new space, a virtual environment, where it is the centre of the educational process (Ehsani et al., 2019). These tools offer many possibilities to reform the study methodology and curricular content, and to access higher education, which in many cases are difficult for various reasons. Previous literature such as Yusuf and Widyaningsih (2020) as well as Mirzamohammadi (2017) found that technology access relates to the E-learning implementation significantly.

Virtual education has become a fundamental tool to motivate students to continue their higher education without interfering with their daily life. The virtual platform makes it more attractive and with a high degree of acceptance in the student population (Azar et al., 2017). However, the E-learning platform has been mistakenly perceived as many of the users taking E-learning as a simple instrument of offering information to the students and a repository of learning objects, rather than as a new teaching strategy that allows flexible training independently of the space and time, in which the students and the teacher are immersed. Furthermore, E-learning platform and mechanism can be seen as a conversion process from physical teaching and learning system to a network and virtual learning. In other words, the inclusion of E-learning in training institutions has only served to move from a university of the photocopier to a university of the printer. It has been believed that the simple fact of transferring printed materials to pdf or html, and their location on the network implied carrying out e-learning or pre-training actions. Therefore, the only thing that was being done was to change the mechanism by which the information was given to the students (Sun et al., 2019). Several previous literatures such as Ibrahim et al (2021); Tawafak et al (2020); Yilmaz (2017) found motivation relates to the e-learning implementation significantly.

To some higher education institutions, facing these series of changes and social requirements, have been forced to formulate the study plans and strategies they implement for the training of their students. This is often linked to traditional models, and it is evident how important the role of students involvement is, since much of the change is at their initial process of transition prior to the traditional model disposal (Majanja, 2020). Obviously, in the case of education in universities, "if the higher education systems want to respond to these challenges, they must examine the changes that are taking place in their environment since many of these changes have implications in the way learning is organized"; since to plan their study programs, they cannot remain distant from the students (Pour et al., 2019).

Currently, there are many research projects focused on this topic, aimed at demonstrating the effectiveness of different virtual education methods in undergraduate students, even going further and demonstrating associations between the various factors and academic performance. For example, a study by Makhdoom et al (2013), consisted of 121 fourth-year medical students from the Taibah University of Saudi Arabia. These students were divided into two groups at random: those taught by the traditional approach and by blended learning; in which, the authors sought to evaluate the effectiveness of blended learning in the study of family medicine as an example of a clinical medical science. The findings from the study showed that a mixed learning is significantly better than the traditional one in all the domains of the educational environment, except in the social perception, being the learning perception, the domain in which the greatest improvement was observed in the students. Additionally, the findings suggested that students are open to new learning methods. Thus, the blended learning approach is an effective method of teaching family medicine and can be applied to other medical sciences. Several previous literatures such as Alhabeeb and Rowley (2018) as well as Logan et al (2021), found important factors to succeed are related to the e-learning implementation significantly. Based on the above arguments, this research proposes the following conceptual model:

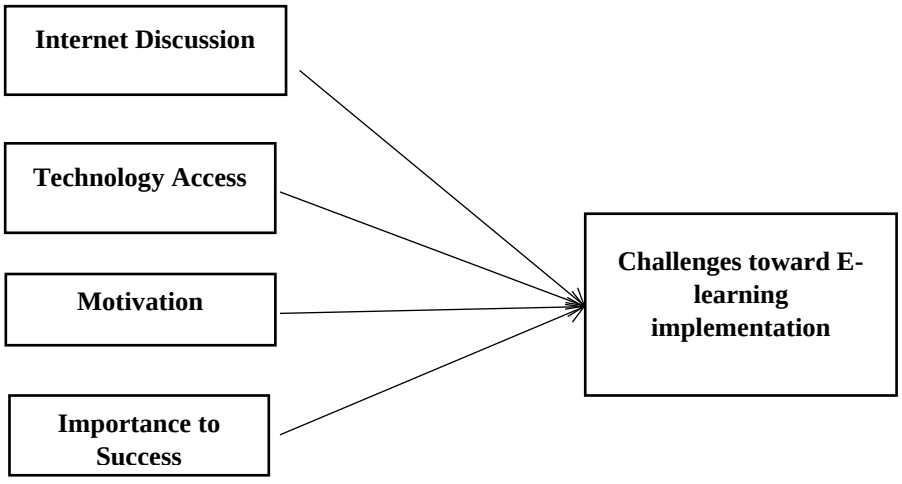

Figure 1. Research conceptual model

Methodology

This study focuses on all universities located in Aden, Yemen. The sample covers both public and private universities. For this current research, the questionnaire was adapted and duplicated from the study of (Embi et al., 2011). This study employs the quantitative approach because it provides proper methods and more accurate statistical results. This study employs

the random sampling technique method in the process of distributing the questionnaires. This technique gives an equal opportunity for each unit within the population to be selected as recommended by (Long et al., 2016). The sample size was determined as 335 students of the universities in the capital city of Yemen, Aden. The determinant of the sample for the study was based on the Krejcie and Morgan (1970) table. The collected data were analyzed using the SPSS software program version 21.

Data Analysis and Results

To achieve the research objectives, the descriptive statistics analysis was employed to clarify the respondent's profile. The process also utilized to assign factors in the research using the descriptive analysis to indicate the mean and standard deviation. Before proceeding to the inferential tests, explanatory tests were used; the purpose of conducting the explanatory test is to examine the respondents' profile, reliability and validity of the used model, data gathering and collected tests such as normality test, reliability test, and finally, the correlation and regression test was employed.

Respondents Profile

The respondents' profile test was applied for the current study for several reasons such as finding out the background of the variety of respondents in the study. This test is also used to make sure that all the population of the study had equivalent opportunities to participate in the study through the random sampling technique in the distribution of the questionnaires. The respondents' profile test had several areas of concern, mainly gender, age, educational level, and experience of using the internet.

Table 1 shows the profile of 335 participants who had participated in this survey. Findings revealed that the male participants are at 54.3%, while the male participants are at 45.7% of the total number of respondents. The table also indicates there were four ranges of age participating, namely 18-24 years old, 25-30 years old, 31-40 years old as well as41 years old and above. The age test revealed that the participants in the range of 18-24 years old is at 42.4%, 25-30 years old at 32.8%, 31-40 years old at 22.1%, and finally, participants in the range of 41 years old and above at 2.7% of the total number of respondents.

From Table 1, there are four types of qualifications possessed by participants, namely diploma, bachelor, master, and PhD. The education level revealed that the participants who had diploma qualification were 30 (9.0%) of the total number of respondents. The participants who had bachelor qualifications were 239 (71.3%) of the total number of respondents. The participants who had master qualifications were 53 (15.8%) of the total number of respondents. The participants who had Ph.D. qualifications were 13 (3.9%) of the total number of respondents.

There are three levels of experience using the internet for the students, namely less than 2 years, 3-4 years, as well as 5 years and above. The levels of experience using the internet revealed that 6.3% of the participants had less than 2 years of experience of using the internet, followed by 28.7% of the participants have 3 -4 years of experience, and 65% of the participants who have more than 5 years of experience in using the internet.

Table 1
Profile of Respondents (N = 335)

Category	Frequency	%	Category	Frequency	%
Gender			Education level		
Male	182	54.3	Diploma	30	9.0
Female	153	45.7	Bachelor	239	71.3
Age			Master	53	15.8
18-24 yrs	142	42.4	PhD	13	3.9
25-30 yrs	110	32.8	Experience (Yr)		
31- 40 yrs	74	22.1	Less than 2 yrs	21	6.3
> 41 years	9	2.7	3 to 4 yrs	96	28.7
			> 5 yrs	218	65.1

Descriptive Statistics

The descriptive statistics aims to identify the mean score, the standard deviation, and minimum and maximum values obtained for all the study's variables. A Likert-like scale was used in the scale measurement. For ease of interpretation, the ranges of five-point Likert scales were categorized into equal-sized categories of strongly disagree, disagree, neutral, agree and strongly agree.

The mean score for internet discussion, technology access, motivation, and importance to your success variables were 3.98, 3.84, 3.723, and 4.28, respectively. The results indicate that respondents are on high agreement with the statements regarding the challenges elements of internet discussion, technology access, motivation, and importance to your success towards E-learning implementation. Therefore, the samples in the study revealed that (i) internet discussion, (ii) technology access, (iii) motivation, and (iv) importance to your success in E-learning are crucial and have high impact towards the implementation of E-learning in public and private universities in Yemen. Furthermore, the standard deviations for the subscale variables (internet discussion, technology access, motivation, and importance to your success) were 0.688, 0.826, 0.916 and 0.724 respectively, which are close to the mean.

However, the mean score for the E-learning implementation was 4.06, which means that respondents highly agree with the challenges of internet discussion, technology access, motivation, and importance to your success towards E-learning implementation in public and private universities in Yemen. Furthermore, the standard deviation for the E-learning implementation was 0.795. The following Table 2 shows the results of the descriptive statistics.

Table 2
Descriptive Statistics for Study Variables

Factors	N	Minimum	Maximum	Mean	Std. Deviation
ID	335	1.00	5.00	3.980	0.688
TA	335	1.00	5.00	3.842	0.826
M	335	1.00	5.00	3.723	0.916
IYS	335	1.00	5.00	4.280	0.724
ELI	335	1.00	5.00	4.057	0.795

Note: ID: internet discussion; TA: technology access; M: motivation; IYS: importance to your success; and ELI: E-learning implementation

Correlation Test

A correlation test is used to identify the type of relationships between the independent variables and the dependent variable (Table 3). The correlation test is used to identify whether the relationships are positive or negative, if the relationships are significant or non-significant, as all these assumptions are defined after the results of the correlation test.

The correlation test was applied for the current study for the reason of identifying the level of relationships exist between the independent variables and the dependent variable. Based on Table 3, the correlation test has revealed that there is a positive and significant relationship between internet discussion and E-learning implementation with r = 0.526 and p-value = 0.000, which is the lowest correlation found. There is a positive and significant relationship between technology access and E-learning implementation with r = 0.683 and p-value = 0.000, which is the highest correlation found. There is a positive and significant relationship between motivation and E-learning implementation with r = 0.579 and p-value = 0.000, which is a moderate correlation found. Besides, there is a positive and significant relationship between importance to your success and E-learning implementation with r = 0.625 and p-value = 0.000, which is a moderate correlation found.

Table 3
Descriptive Statistics for Study Variables

		ID	TA	M	ITS	ELI
Internet Discussion	Pearson Correlation	1				
	Sig. (2-tailed)					
Technology Access	Pearson Correlation	.524**	1			
	Sig. (2-tailed)	.000				
Motivation	Pearson Correlation	.526**	.497**	1		
	Sig. (2-tailed)	.000	.000			
Importance To Your Success	Pearson Correlation	.525**	.519**	.488**	1	
	Sig. (2-tailed)	.000	.000	.000		
E-learning Implementation	Pearson Correlation	.526**	.683**	.579**	.625**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
**. Correlation is significant at the 0.01 level (2-tailed).						

Regression Test

A linear regression analysis was tested to predict the impact of the E-learning implementation in public and private universities in Yemen based on internet discussion, technology access, motivation, and importance to your success. The results for the regression analysis test are shown in Table 4. Through the obtained adjusted R2 that is 59.9%, indicates that internet discussion, technology access, motivation and importance to your success explain the level of challenges on the E-learning implementation in public and private universities in Yemen. The 59.9% presents that those factors have substantial impact on the E-learning implementation in public and private universities in Yemen. Based on the result obtained, there is a positive and significant impact from internet discussion, technology access, motivation, and importance to your success of E-learning implementation in public and private universities in Yemen. This means that these variables are among the challenges in E-learning implementation in Yemen; internet discussion (β= 0.063, t= 1.209, P<0.05), technology access (β= 0.387, t= 9.060, P<0.05), motivation (β= 0.184, t= 4.835, P<0.05), and importance to your success (β= 0.312, t= 6.411, P<0.05).

Table 4
Regression Test Coefficients of the Independent Variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	.299	.188		1.592	.112
	Internet Discussion	.063	.052	.055	1.209	.228
	Technology Access	.387	.043	.402	9.060	.000
	Motivation	.184	.038	.212	4.835	.000
	Importance To Your Success	.312	.049	.284	6.411	.000
Adjusted R Square: 0.599						

Dependent Variable: E-learning Implementation

Findings and Discussions

Internet Discussion

Internet discussion among universities students in Yemen is found to be challenging. As E-learning requires students to study independently, they find virtual discussion has led to inefficient communication with their friends and teachers. This internet discussion issue may be compounded should their peers have inadequate technology devices and knowledge (Almaiah et al., 2020). In addition, it is argued that the efficiency of internet discussion will be low if students and teachers have lack of knowledge in handling the device and platform. This internet discussion issue indicates that students-teachers' interactions will have low/failure interactive learning environments. It is contended that student-teachers and content interaction would affect the students' satisfaction in their learning process (Yilmaz, 2017). Students satisfaction is an important measure in ensuring the efficiency of E-learning implementation. The research posited that as students enjoying their online discussions with teachers and peers, they will have more meaningful results from technology-supported learning environments. Otherwise, students might stop E-learning and the implementation will be unsuccessful results (Hao, 2016).

Technology Access

The *technology access* for electronic learning is found to be crucial for universities students to adapt with the new learning mode process. Further, it is argued that the electronic access is relying heavily on Yemen's regulatory and policy setting in supporting the education system in the country. Technology access is one of the factors that shows the country effort in ensuring the capacity and ability of the technology implementation in universities. Findings from this study are in the same view of Islam et al (2019) that highlighted E-learning implementation can be challenging as the factors often derived from users demographic background such as age and geographical area, individual lack of knowledge and incorrect conception, as well as the lack of infrastructure. Indeed, the use of the Internet as the fundamental means of transmitting information has the technical problems that the network still presents today: shortage of bandwidth in the networks and cost of connection. Similarly, universities in Yemen seem to face the challenges when the capacity of broadband width has limitation, particularly in certain residential areas. This situation can hinder the students from being motivated to attend the classes since students have long waiting time that may lead to dropout (Pillai and Prakash, 2017). In addition, E-learning continues to have the problem of a

certain lack of trust both on the part of involving parties (students) and on the part of the group of teachers. In the context of accountability, IT support is critical for education program that utilize the digitalization tools and platform. For students, technology access should provide them with an easy access to information, accelerated learning and enjoy opportunities to practice what they learn as well as enable students to explore new subjects and deepen their understanding of different concepts.

Motivation

Findings from this study reveals that the challenges of E-learning implementation have led the students to have low *motivation*. Results from the regression test shows that the implementation of E-learning in the universities seems to be discouraging. The students are likely to feel monotonous and lonely in their learning environment. This situation worsens further, when the students unable to interact in group through online discussion. In addition, the students may feel the tension when they cannot pay attention to the duration of learning activities, frequency of activities, perseverance, and handling the obstacles and difficulties in using the technology. Motivation is crucial in determining the students to be diligent in learning and be willing to make use the best efforts in the learning process in order to achieve the best results throughout the learning process.

Importance to Your Success

With regards to *Importance to your success* variable as a challenge towards E-learning implementation, this study found that the majority of the participants had cultural challenges as they perceived the E-learning approach is not crucial for their success. In this view, cultural differences such as in Yemen can influence communication and interaction as well as participation through technology and create difficulties for learners. In some higher education institutions, to face the series of changes and social requirements, have forced them to rethink the study plans and strategies they implement for the training of their students, which are generally based on traditional models. It is evident how important is the role of students involvement, since much of the change is at their disposal (Majanja, 2020). Previous study such as Yilmaz (2017) contended that the implementation of E-learning as new classroom atmosphere is likely to meet resistance as people are sometimes attached to the traditional practice of pedagogies and propositions of learning environment. Thus, this current study reveals that when the students unwilling to adopt the new approach, this can result in failure to implement the whole process. This support the explanation beforehand which if students are not readily prepared and have low motivation factors to study online, intrinsically, they do not consider E-learning knowledge as a main priority for their study to success. Therefore, the implementation of E-learning in the universities in Yemen are still at infancy stage because universities and their stakeholders (i.e. staffs, teachers and students) are not prepared for the experience (Pour et al., 2019).

Conclusion

The current study has developed two main objectives, which are to investigate the challenges towards E-learning implementation among university students in Yemen, and, to identify which challenge has the highest impact on the E-learning implementation among university students in Yemen.

In general, outcomes from this study reveal that the use of E-learning in Yemen's universities are still facing some challenges. Findings from the survey show that internet discussion,

technology access, motivation, and importance to your success are significant towards the E-learning implementation in Yemen. These variables are mainly related to cultural differences, technology enhancement and education policies which require severe transition and transformation from traditional teaching and learning approaches to digitalization. Both students and teachers need to have a good grasp on technology and encouraging attitude towards E-learning for a successful learning ambience. This means relevant equipment, training and technology support have to be passed onto all academics for an institution to be successful in achieving a successful implementation of E-learning. All related parties involved in this transition process must communicate about the challenges and support both teachers and students for the new digital study approach. Universities are recommended to initiate a safe learning management system (LMS) to create and nurture the teachers and students to be able and familiar with the use of E-learning platforms. For example, the use of LMS is taken as a platform for presentation of supporting materials. Although some researchers claimed that E-learning gives very successful results, the motivation of the learners is high because these studies are not long-term and the application is short-term.

This current study also found that there is a need and rise of E-learning approach. In this context, this study contended that the delivery through Information and Communication Technology (ICT) using a wide range of virtual designs and instructional formats are pertinent in restructuring the education approach that relates to synchronous and asynchronous learning (Abumandour, 2020). In general, there is a reluctance to move from traditional training to a new training model. Furthermore, there is a tendency to think that virtual teaching is limited to imitating face-to-face classes using the available means. However, the different actors involved (students and teachers) should face virtual teaching not to imitate traditional teaching, but as a new approach of learning, taking advantage of the new capacities offered by information networks and changing the way of learning, such as Hybrid approach. Globalization also has forced teaching approach to be improvised. For example, teachers should encourage students to be more active in their training process participation and not limiting themselves to acting as a mere receiver of information (Chou, 2020).

Several advantages about this approach to be considered is that it offers a variety of learning modes that improve the knowledge and performance of students and is very useful. As it provides flexibility of time and space, the student can control the contents, their learning pace according to their needs, provides more opportunity to access education, and increases the quality of instructional content. For example, it favors the development of specific skills and abilities, such as effective communication, collaborative work, critical and reflective thinking (Gunesekera et al., 2019). For all these benefits offered by new technologies with electronic learning, the study plan and the way in which the information is delivered must be redesigned, which leads to an innovation in education. Job and Bubou (2020) indicate that this learning modality "in various contexts of medical education, seems to be at least as effective as traditional methods, such as lectures." In these cases, students report that they do not see it as a replacement for traditional training, but rather that it complements it, being part of a blended learning strategy.

Finally, it is imperative for the universities in Yemen to develop appropriate, purposive and defined course of learning that can match and can be easily embedded in E-learning environment. This strategy can enhance teachers' skills and knowledge and improve student's learning experience and support with regards to self-learning and digitalization. On the side notes, the regulators also should play their role in supporting and strengthening the implementation of E-learning in the universities as this could improve the education system in Yemen in a better way. Therefore, it is suggested that further research needs to be carried out on how University policy, Government policy and IT consultants can support and improve the implementation of E-learning in a higher learning institutions. In fact, future research is also suggested to investigate the effect of E-learning system towards students' knowledge and teachers' capabilities in managing their academic matters.

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