



A Pragmatic Study on E-Learning System for Higher Education in Developing Countries

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ABSTRACT

The Internet has become one of the greatest inventions of mankind for learning and sharing of useful information through electronic means. For some years now, the developed nations have adopted the use of the e-learning system. Presently, the COVID-19 outbreak has given rise to the adoption of the e-learning system by many countries of the world being the most viable alternative for teaching and learning. This paper uses a pragmatic approach to evaluate the benefits and challenges associated with the e-learning system. A survey was conducted among students in a higher institution and a total of one hundred and twenty-five responses was gathered from the online questionnaire to know the likely challenges faced by students with the e-learning system and also at an online researchers' forum. The result shows that 30.40% of students complained about weak internet connectivity from the questionnaire administered which is also the major problem in most developing nations, and for optimal performance of the e-learning system, there should be adequate provision for strong internet connectivity, standard IT infrastructure, and user-friendly e-learning platform.

KEYWORDS: COVID-19, e-learning, learning platform, survey, teaching.

1. INTRODUCTION

The evolution of modern computer and smart devices revamped the learning structure, the need for e-learning has risen remarkably and will continue doing so, as society starts adapting to social distancing, it is imperative to note that electronic learning has come to stay been the most viable approach for learning especially during this pandemic period. Many higher institutions of learning have adopted the e-learning process as an important tool and it is gaining an educational foothold worldwide (Abou El-seoud et al., 2009; Gunasekaran et al., 2002). The emergent of the e-learning system is influenced by several factors which include but not limited to ease of access, flexibility, availability, reduced cost of training, and convenience (Odegbesan et al., 2019). E-learning is known as the use of information and communication technologies to provide access to online learning/teaching resources (Arkorful & Abaidoo, 2014). In a broader view, e-learning can be defined as the use of computer and Internet technologies to disseminate an array of results through media such as the internet, computer, visual tapes, audio, satellite broadcasting, and compact drives to provide learners with utmost flexibility regardless of time and place of learning (Ghirardini, 2011; Poonam, 2015; Shahmoradi et al., 2018). Similarly, e-learning includes the use of the internet and other relevant teaching aid to produce learning materials, teach learners, and also regulate courses in an organization (Pande et al., 2016).

The efficiency of the electronic learning system requires adequate planning and teaching to improve the quality of learning and the general performance of the students. E-learning can suit the needs of both active and passive learning (Liu et al., 2020). The study investigating the effectiveness of e-Learning has increased nowadays (Noesgaard & Ørngrreen, 2015), which prompt a practitioner studying in a developed country to assess the strengths and weaknesses of different e-learning platforms from the viewpoint of a user from a third world country (Adzobu, 2014).

The global COVID-19 pandemic has made e-learning system the safest and easiest way to impart and acquire new skills, e-learning system is useful for creation of informative online sessions, supplementary lessons for students, webinars, e-



mentoring and online conferences (Adelakun, 2020d). Several e-learning authoring tools/learning management system platforms help lecturers/tutors to deliver lectures with ease. It also provides the learners with the flexibility to learn at a remote location and also gives room for the exploitation of additional knowledge (Epignosis, 2014). It is paramount that all e-learning platforms must be responsive, user friendly, and also easy to use irrespective of the device used for connectivity (Adelakun et al., 2020f).

E-Learning platform can be defined as an array of online interactive programs that give learners access to knowledgeable resources to enhance educational delivery, class management, and prevention of submission errors through the Internet (Ghirardini, 2011; Benta et al., 2014). Several educational institutions and organisations use different e-learning platforms to deliver and manage their learning processes. Technological prerequisites of the approach adopted should be kept to a minimum to increase the participation and implementation (Kamba, 2009).

There are several benefits associated with e-learning which include but not limited to: enhancing the student Information Technology skill, making available swift and enormous access to learning resources, easy distribution of learning resources, ability to serve a large number of students at low cost, quick creation and revision of study materials, it promotes active and independent learning, flexibility: lectures can be taken at any location, it promotes a carbon-free environment, it offers self-paced learning and personalization, it enhances retention capability (Noesgaard & Ørngreen, 2015; Adelakun, 2020d).

There are several online learning management system platforms with different levels of functionality and complexity, the table below displayed major e-learning platforms in use in no chronological order.

Table 1: Major Online Learning Management System

Zoom	Moodle	Edmodo	Google Meet
Google Classroom	Microsoft Teams	Blackboard	Edjet
Skype	IMO	Whatsapp	YouTube
Teachable	Learnworlds	WiziQ	Thinkific
LearnDash	Skillshare	Docebo	Slack
Edpuzzle	Cisco Webex meeting	Google Duo	Canvas
Sakai	Academy of Mine	Schoology	Showbie
itslearning	Adobe Captivate	Shift	Elucidat
Coursera	Articulate 360	Udemy	Podia
Kajabi	Ruzuku	Educadium	Paradiso LMS
CourseCraft	360 Learning	TalentLMS	OpenOlat
ATutor	ISpring Learn	Opigno	Ilias
Forma LMS	Latitute Learning	Coggnio	Eliademy
Dokeos	Claroline	Chamilo	DigitalChalk

Source: (Adelakun, 2020e; Dalton, & Turner, 2020; Ouadoud et al., 2016; Obeidallah & Shdaifat, 2020; Raouna, 2020; Parr, 2020; Ann, 2018).

This paper uses a pragmatic approach to evaluates the benefits and challenges associated with the e-learning system, several pieces of literature were studied, reviewed, analysed, and the suggestions pointed out was also worked on for effective delivery.

2. METHODOLOGY

In this study, two separate research processes were implemented: A questionnaire and a survey to study the respondent's individual learning experience. The first study used an online questionnaire for collecting quantitative and qualitative data from students of Federal Polytechnic Ilaro, which cuts across different cadres of students irrespective of gender, age, or departments. The second study used an online Question / Answer forum on researchgate to obtain qualitative



data from researchers and academics from different parts of the globe on their own e-learning experience as well as their advice for effective delivery.

Table 2 – Questionnaire On Major Challenges of E-Learning System

S/N	Major Challenges of E-Learning	Male Respondent	Female Respondents	Total number of respondents
1.	Social Isolation	8	3	11
2.	Feedback is limited	6	2	8
3.	High cost of using Internet	26	6	32
4.	Weak internet connection	28	10	38
5.	Low level of Assimilation	17	4	21
6.	Lack of Communication Skill development	12	3	15
	Total Respondents	97	28	125

Source: Extracted from the questionnaire conducted

After a pragmatic study of the questionnaire, the online questions and answers forum and also from information obtained from the review of similar studies, it is apparent that several challenges arise from the e-learning system. Some of the major challenges faced with the e-learning system globally include but not limited to; weak internet connection, high cost of using the internet, lack of human interaction, financial restriction i.e. lacks of computer / smart devices, adaptability struggle, technical issues, lack of self-motivation, intermittency of electricity supply, the complexity of the system, lack of perfect e-learning authoring tool/learning platform, social isolation, low level of computer literacy, lack of adequate awareness, low level of assimilation, feedback is limited, the credibility of the e-learning exam in a remote location cannot be ascertained.

3. RESULTS AND DISCUSSION

This paper has used a pragmatic approach to evaluate the benefits and likely challenges associated with the e-learning system. From the questionnaire conducted online, it is appalling that students face different challenges, Table 3 shows the percentage of major challenges with the e-learning system. Fig. 1 displays a chart comparing major challenges students faced with the e-learning system, and it is clear that weak internet connection and high cost of using internet are the major challenges faced by students with the e-learning system.

Fig. 3. displays the percentage of major challenges with the e-learning system, where weak internet connection has the highest percentage of 30.40% while low level of assimilation with 16.80%, lack of communication skill development with 12.00%, Social isolation with 8.80%, feedback is limited with 6.40% and high cost of using the internet with 25.60%. Similarly, from the question and answer forum from researchgate, the qualitative data obtained from different researchers/academics shows that different countries have different challenges and benefits, but the majority of researchers complained about weak internet connection and high cost of using the internet which is also similar to the survey conducted at federal polytechnic Ilaro, and it is also emphasized that credibility of e-learning exam in a remote location cannot be ascertained except a remote desktop software is implemented (Adelakun, 2020a; Adelakun, 2020b;. Adelakun, 2020c; Adelakun, 2020d; Adelakun, 2020e; Adelakun et al., 2020f).



Table 3 – The Total Percentage of Major Challenges with The E-Learning System

Major Challenges of E-Learning	Total Percentage of respondents
Social Isolation	$\frac{11}{125} \times 100\% = 8.80\%$
Feedback is limited	$\frac{9}{125} \times 100\% = 6.40\%$
High cost of using Internet	$\frac{32}{125} \times 100\% = 25.60\%$
Weak internet connection	$\frac{38}{125} \times 100\% = 30.40\%$
Low level of Assimilation	$\frac{21}{125} \times 100\% = 16.80\%$
Lack of Communication Skill development	$\frac{15}{125} \times 100\% = 12.00\%$
Total	100%

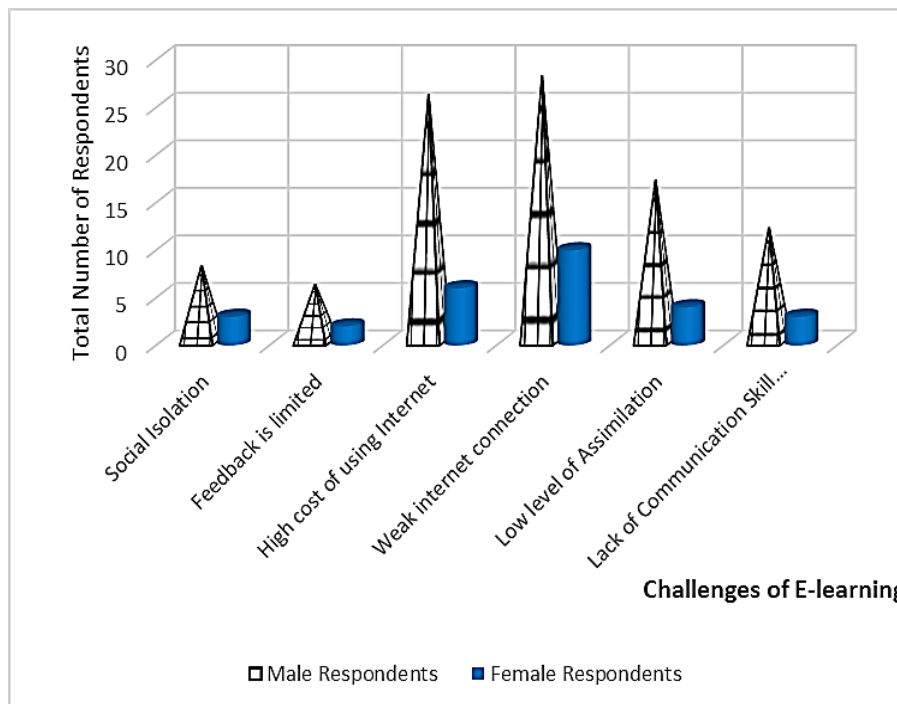


Fig. 1 – Chart comparing major challenges of e-learning system

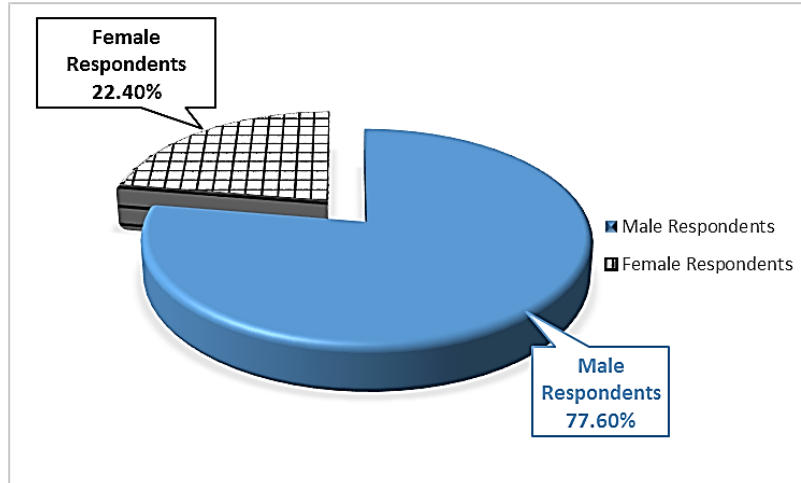


Fig. 2 – The percentage of male to female respondents in the e-learning system

It should be noted from the questionnaire conducted that 77.60% of male respondents participated while 22.40% were female respondents as shown in quantitative and Fig. 2.

$$\frac{97}{125} \times 100\% = 77.60\% \text{ Percentage of male respondents}$$

$$\frac{28}{125} \times 100\% = 22.40\% \text{ Percentage of female respondents}$$

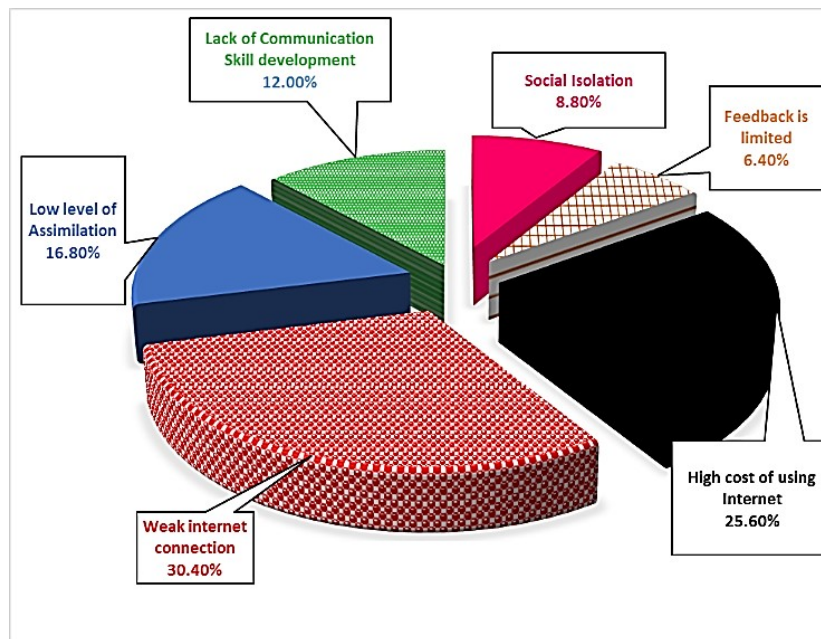


Fig. 3 The percentage of major challenges with the e-learning system

From all indications, in the years to come e-learning system will be adopted as the major form of learning globally, the e-learning system usage has increased especially during this pandemic period. However, for effective delivery and optimal performance of the e-learning system, there should be; establishment of standard IT infrastructure, adoption of expert judgment from developed countries, provision of strong internet connectivity at a cheaper rate, familiarizing



learners and teachers to the development and use of e-learning material, usage of a dynamic e-learning platform that is user friendly and easy to use, a remote desktop software should be adopted for credible exam administration, provision of stable electricity supply.

4. CONCLUSION

The need for e-learning has risen remarkably and will continue doing so, a suitable approach for effective delivery e-learning system must be put in place. This paper has used a pragmatic approach to evaluate the benefits and likely challenges associated with the e-learning system. It should be noted that some developing and less-developed nations are yet to adopt the e-learning system while those that have adopted it have more challenges with the transitioning. From the questionnaire distributed and obtained from the students of the Federal Polytechnic, Ilaro, the result shows that 30.40% of students complained about weak internet connection which is the highest, while 6.40% of students complained about limited feedback, the result is similar to qualitative data obtained from researchgate questions and answer forum. Furthermore, the credibility of the e-learning exam depends on the implementation of remote desktop software. Hence, for optimal performance of the e-learning system, there should be provision for modern technology, availability of well-trained personnel, provision for strong internet connectivity, standard IT infrastructure, user-friendly e-learning platform, and adequate awareness and sensitization on the usage of the system.

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