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Abstract

The main goal of this paper was to investigate the university students' readiness for E-learning during the Covid-19 Pandemic. The rationale was to explore students' readiness for the various E-learning platforms, examine the challenges faced by students in the use of the E-learning platforms (module) during Covid-19 Pandemic and also investigate the benefits of the use of the E-learning platforms. This study adopted a survey research design. From the 2019/2020 academic year of the University of Health and Allied Sciences, 345 students were selected by convenient sampling method. Their readiness for E-learning during the Covid-19 pandemic was assessed by a self-developed questionnaire. Data analysis was done using descriptive statistics. The study revealed that more than half (62.9%) of the students were not ready for the use of e-learning platforms with a level of study associated with readiness even though 91.6% of the participants had basic computer skills before the pandemic, 36.5% had prior experience with the use of E-learning platforms before COVID-19 Pandemic.

Introduction

Online learning is not new to students in the University, neither could it be new to distance education. It is an indisputable fact that the COVID 19 and its related impact has made educationists to re-consider opportunities for teaching and learning online. In the world today, COVID-19 pandemic is constraining many academic institutions to quickly adopt to distance and online education. We are presently in a highly sensitive situation and must respond with various and accessible methods of learning such as the use of e-learning platforms and mobile learning applications. Learning is a continuous cycle that happens as knowledge is expended, regardless of the time and location (Aldhafeeri & Khan, 2016). Hence, learning does not need to be a formal instructional course; many can learn without going to the classroom. Students like to share encounters instead of continually sitting in a lecture hall or theatre (Aldhafeeri & Khan, 2016).

The closure of academic institutions has unfavourable outcomes on students example the inference of education will result in students being denied the chance for development and advancement. Hence, online computerized learning applications can address this issue with effective access to these electronic platforms and offer fast connectivity to the internet (UNESCO, 2020).

E-learning systems are playing a significant role during the COVID-19 pandemic. E-learning platforms can help educational institutions to control, plan, convey and track the teaching and learning processes (Martins & Baptista Nunes, 2016). Moreover, its main objective is to support teachers and academic institutions to encourage student education during times of the closure of schools. Also, the majority of these e-learning platforms are free which can help guarantee consistent training during the coronavirus pandemic. Therefore, the provision and utilization of

online learning resources for e-learning is becoming the problem most academic institutions are facing during the COVID-19 pandemic.

Additionally, e-learning platforms are significant information sources, because they are ubiquity (accessibility at anyplace and anytime), minimal cost, easy to use, and intuitive character. E-learning platforms such as Blackboard have many special features that would be important for use during this COVID-19 pandemic. Utilizing these platforms during this time could be more functional. For instance, through e-learning platforms, students can still receive instructional manuals and some learning activities from instructors on their personal computers or cell phones while in their homes. Likewise, students can easily gain access to learning content on their cell phones since they can be connected to mobile networks or to local remote networks. One way to deal with e-learning is the utilization of Learning Management Systems thus, Learning Management Systems helps to arrange and control e-learning activities within a system such as students' enrolment, assignments, examination, course outline, planning of lessons, messages, schedule and essential course materials (Oliveira, Cunha, & Nakayama, 2016). By changing over from traditional learning approaches, students will be empowered and appreciate the use of e-learning platforms like Blackboard every day at any time. This will present special advantages like an increment in acceptability and proficient learning services through an improved network with their instructors (Naveed et al., 2017).

Since the accomplishment of e-learning platforms relies upon students' readiness and acceptance to utilize this platform (Almaiah & Alismaiel, 2019; Almaiah & Alyoussef, 2019). it is imperative on institutions to make e-learning platforms readily available to students and instructors (Arkorful & Abaidoo, 2015). Studies on this topic are still at their outset stage where the perspectives on the students are not completely investigated. In addition, there are limited studies on the challenges

and factors that influenced the usage of e-learning systems in education during the COVID-19 pandemic in Ghana. It is against this backdrop that this paper seeks to:

1. Explore students' readiness for the various E-learning platforms (module) that the University of Health and Allied Sciences (UHAS) has deployed for its students during the COVID 19 pandemic.
2. Examine the challenges faced by students in the use of the E-learning platforms (module) during COVID-19.
3. Investigate the benefits of the use of E-learning platforms (module) at University of Health and Allied Sciences (UHAS).

Literature Review

The Concept of Electronic Learning (E-Learning)

Education and Technology

It is important to understand the meaning of educational technology in order to successfully use information technologies in educational institutions. In today's world, educational technology is commonly used (Agormedah, Adu Henaku, Ayite, & Apori Ansah, 2020). When compared to traditional classroom instruction, educational technologies provide students with a more effective and understandable learning experience. This approach facilitates learning by allowing students to gain learning instructional material that gives the instructor positive feedback (Ozcan & Genc, 2016; Simpson & Richards, 2015). It is important to understand the educational standard, age requirements, and student readiness when implementing technology in education. These elements are similar to those that are taken into account in other educational and instructional models

(Bagriyanik & Karahoca, 2016; Ceylaner & Karakuş, 2018; Saintika, Astiti, Kusuma, & Muhammad, 2021).

In today's world, educational distribution over the internet has established itself; this term is also known as E-learning. E-learning is described as education provided over the internet without the need for both the teacher and the student to be physically present at the same time (Clark & Mayer, 2016). Students who study by e-learning have unlimited access to the course material and can use the materials however they see fit, as long as they stay under the instructor's guidelines. This form of education has financial benefits, making it a perfect model (Garcia Laborda, 2007). Many educational activities are facilitated by e-learning environments. E-learning resources can include text, sound, basic graphical displays, video presentations, animations, simulations, games, testing systems, and interactions with feedback (Bicen & Uzunboylu, 2013; So, Chen, & Wan, 2019; Yangoz, 2017).

E-learning, on the other hand, is a technological tool for teaching and learning. In general, computers and the internet are required for knowledge and skill transfer. Computer-based computing, web-based learning, interactive education, and digital collaboration are also forms of e-learning tools. The internet, audio or videotape, CD-ROM, and satellite TV are all used to provide content. Image, media in the form of text, animation, and streaming video and audio can be used in self-paced or instructor-led e-learning. CBT (Computer-Based Training), WBT (Web-Based Training), and IBT (Internet-Based Training) have all been used as synonyms for e-learning (Internet-Based Training) (Rennie & Morrison, 2013). Easy web-based training that does not involve the installation of software or CDs on your device is an example of an e-learning feature (Yagodzinski, 2003). To watch, listen, and observe as teaching experts explain each tutorial on the

computer screen, all you need is an internet connection and a web browser (Rapanta, Botturi, Goodyear, Guàrdia, & Koole, 2020).

Challenges associated with the use of E-learning platforms

Several types of research have looked at the difficulties that come with implementing e-learning. There is proof that the implementation of electronic learning programs has failed when organisations and their stakeholders remain unprepared (Aydin & Tasci, 2005; Borotis & Poulymenakou, 2004). Furthermore, people are sticking to outdated pedagogies and traditions, making it impossible for them to move to newer technology and update previous systems (Watkins, Leigh, & Triner, 2008). Carr (2000) believed that students' perceptions of on-line learning were negative as a result of previous encounters, which resulted in high dropout rates and low learner engagement. Low student satisfaction with the online learning environment was discovered to be one of the other reasons (Kenny, 2003). Despite this, research suggests that students and teachers alike are delighted with online education (Ali & Ahmad, 2011).

The growing number of students enrolled in distance education promotes online learning as a viable alternative to conventional classroom instruction. Many students were pleased with the education they got online according to Zaheer, Babar, Gondal and Qadri (2015). The study revealed that e-learning will promote higher education in countries where higher education institutions are scarce. Tutorials, student participation, style of teacher, method of evaluation, material, learning atmosphere, and tools used were all found to contribute to student satisfaction (Zaheer et al., 2015). The dilemma at hand is not one of the limitations of higher education institutions, but rather one that necessitates emergency remote teaching because social gatherings, like educational institutions, are considered a danger to the dissemination of the COVID-19

pandemic and have been shut down. As a result, the focus of this research was on the difficulties that students are likely to encounter in online learning.

Students' perceptions of online learning barriers, on the other hand, have been documented. Administrative concerns, academic skills, social experiences, technological skills, learner confidence, time and support for studies, expense, and internet connectivity, and technical problems, according to Muilenburg and Berge (2005) are some of the difficulties associated with online learning. In light of this, this study explored students' challenges in coping with e-learning in the COVID-19 period, as well as whether students were able to study online.

Materials and Methods

The study adopted a survey research design and a quantitative research approach. The study population included mainly students studying at the University of Health and Allied Sciences in 2019/2020 academic year (UHAS SOIS, 2020). The total number of students at the university as of the 2019/2020 academic year was 3,345 students. In this study, a convenient sampling method was used to select respondents for the study. A set of questionnaires was used for the data collection. The study adopted an online sample size calculator called Raosoft sample size calculator which uses the formula: n= Z^2p(1-p)/d^2 .

Where: n = sample size, Z = confidence level,

p = estimated proportion, d = margin of error.

Adopting this formula and using the confidence level of 95%, an estimated proportion of the population as 50%, and tolerated margin of error of 5%, a sample size of 345 participants was selected for this study. The administered questionnaire was coded and entered into Microsoft

Excel. The data were cleaned, validated, and exported into IBM SPSS Version 22.0. Data was presented in tables.

Results and Discussion

Demographic Characteristics of Respondents

Three-hundred and forty-five students took part in the study, comprising of 177 (51.3%) females and 168 (48.7%) males and an average age of 26.9±16.4 years. One-third (33.9%) of the students were in level 400 with a majority (36.5%) from the School of Public Health (SPH). Most of the participants were urban dwellers (40.0%), followed by Semi-urban (30.7%), then Rural dwellers (29.3%). The average age at which participants had their computer use debut was 15.1±6.5 years. See Table 1 for details.

Table 1: Respondents demographic characteristics

Parameter	Frequency	Percentage (%)
Total	*345*	*100.0*
Gender		
Male	168	48.7
Female	177	51.3
Level of Study		
100	79	22.9
200	71	20.6
300	74	21.4
400	117	33.9
Masters	4	1.2
Schools		
School of Allied Health Sciences (SAHS)	47	13.6
School of Basic and Biomedical Science (SBBS)	20	5.8
School of Medicine (SOM)	15	4.3
School of Nursing and Midwifery (SONAM)	101	29.3
School of Pharmacy (SOP)	36	10.4
School of Pharmacy (SPH)	126	36.5
Current place of Residence		
Urban area	138	40.0
Rural Area	101	29.3

Semi-urban area	106	30.7

Parameter	Mean	Standard Deviation
Age	26.94	16.423
Age of debut in computer usage	15.11	6.504

Students Readiness for the E- Learning Platform

Table 2 presents the association between students' readiness in using e-learning platforms and students' demographic characteristics. This was categorized based on the level of positive feedback on questions regarding how prepared students were for e-learning. A score of 70.0% and above was classified as "Ready", from 50.0% to 69.9% was classified as "Averagely Ready", below 50.0% was "Not Ready". More than half (62.9%) of the students were not ready for the use of the e-learning platform, 92(26.7%) were averagely ready with only 36(10.4%) ready. In association with demographic characteristics, only, Level of study showed a significant association at p=0.032.

Table 2: Association of Readiness to E-Learning with demographic characteristics

Parameter	Readiness				P-Value
	Not Ready	Averagely Ready	Ready	Total	
Total	***217(62.9%)***	***92(26.7%)***	***36(10.4%)***	***345(100.0%)***	
Gender					
Male	103(61.3%)	49(29.2%)	16(9.5%)	168(48.7%)	0.560
Female	114(64.4%)	43(24.3%)	20(11.3%)	177(51.3%)	
Level of Study					
100	48(60.8%)	21(26.6%)	10(12.7%)	79(22.9%)	0.032
200	52(73.2%)	13(18.3%)	6(8.5%)	71(20.6%)	
300	46(62.2%)	18(24.3%)	10(13.5%)	74(21.4%)	
400	71(60.7%)	36(30.8%)	10(8.5%)	117(33.9%)	
Masters	0(0.0%)	4(100.0%)	0(0.0%)	4(1.2%)	
Current Place of Residence					
Urban area	85(61.6%)	39(28.3%)	14(10.1%)	138(40.0%)	0.930
Rural Area	65(64.4%)	24(23.8%)	12(11.9%)	101(29.3%)	
Semi-urban area	67(63.2%)	29(27.4%)	10(9.4%)	106(30.7%)	
School					
SAHS	32(68.1%)	11(23.4%)	4(8.5%)	47(13.6%)	0.070
SBBS	9(45.0%)	7(35.0%)	4(20.0%)	20(5.8%)	
SOM	12(80.0%)	3(20.0%)	0(0.0%)	15(4.3%)	

SONAM	75(74.3%)	19(18.8%)	7(6.9%)	101(29.3%)	
SOP	18(50.0%)	12(33.3%)	6(16.7%)	36(10.4%)	
SPH	71(56.3%)	40(31.7%)	15(11.9%)	126(36.5%)	
Age (years)	27.1±20.0	26.9±7.0	25.8±6.7	26.9±16.4	0.897
Age at debut with use of computer (years)	15.1±6.5	15.5±6.6	14±6.3	15.1±6.5	0.520

Source: Field data,2020

On the resources needed for e-learning, the most important requirement according to the students was the internet (96.5%), followed by devices such as computer, smartphones and many more (92.5%), with the least significant being a separate room (12.8%). Close to 94.0% of the students have used the UHAS LMS platform for e-learning, 75.9% have ever used Zoom, 30.2% have experience with WhatsApp Messenger.

The student's most preferred e-learning platform was the UHAS LMS (57.7%), followed by Zoom (27.8%) and the least preferred ones were Viber call (3.0%) and Moodle App (3.0%). See Table 3 for details.

Table 3: Resources and preference of E-Learning Platform

Parameter	**Frequency**	**Percentage (%)**
Total	***345***	***100.0***
Resources needed for online class		
Devices	319	92.5
Internet	333	96.5
IT skills	189	54.8
Special software applications	135	39.1
Electricity	80	23.2
Separate room	44	12.8
Platform used for the E-learning		
UHAS LMS	322	93.6
Zoom	261	75.9
Google Classroom	29	8.4
Google Meet	9	2.6

Microsoft Team	2	0.6
Facebook Live	1	0.3
WhatsApp Messenger	104	30.2
Viber call	4	1.2
Moodle App	1	0.3
Most preferred platform for E-Learning		
Unanswered	14	4.1
UHAS LMS	199	57.7
Zoom	96	27.8
Google Classroom	9	2.6
WhatsApp Messenger	25	7.2
Viber Call	1	3.0
Moodle App	1	3.0

The most used device for e-learning was smart phone (55.1%), followed by Laptop (34.2%), then Personal desktop Computer (5.5%). More than 70.0% of the participants do not share their devices with other family members. More than 50.0% use Vodafone for e-learning, followed by 44.9% who used MTN and 3.8% who used Airtel-Tigo as an internet service provider. Most of the respondents (60.9%) did not have internet connectivity all the time, only 39.1% had internet all the time. Two-hundred and fifty-one (72.8%) were not satisfied with the internet speed. Close to 72.0% experienced higher charges during the lock-down compared to normal days. See Table 4 for details.

Table 4: Device usage and internet availability for E-Learning

Parameter	**Frequency**	**Percentage (%)**
Total	345	100.0
Devices used for the E-learning		
Smart phone	190	55.1
Laptop	118	34.2
Tablets	18	5.2
Personal desktop computer	19	5.5
Sharing of device with other family members		

Share	101	29.3
Do not share	244	70.7
Internet service provider used for online learning		
MTN	155	44.9
Vodafone	176	51.0
Airtel-Tigo	13	3.8
Surfline	1	0.3
Availability of Internet at your place of residence		
Available all the time	135	39.1
Available sometimes	210	60.9
Satisfied with the speed of internet		
Satisfied	94	27.2
Not satisfied	251	72.8
Difference in expenses on internet during lock-down compared to normal days		
Higher expenses	247	71.6
Lesser expenses	23	6.7
No difference	75	21.7

Table 5 presents the basic skills available for E-Learning during COVID-19 pandemic. Three-hundred and sixteen (91.6%) had basic computer skills before the pandemic, 126(36.5%) had experience in the use of E-learning platforms before COVID-19 pandemic. Majority of the participants (88.4%) agreed that the University was offering an e-learning mode of teaching during the pandemic, 40.5% spend up to 2 hours in online learning in a day, and 70.7% were trained on e-learning before e-learning implementation. More than half (55.0%) of the students' first place of use of E-learning Platforms was from the institution with 269(78.0%) agree to a partial availability of resources to join the class in the online mode of education.

Table 5: Basic Skills available for E-Learning during COVID-19 pandemic

Parameter	**Frequency**	**Percentage (%)**
Total	***345***	***100.0***
Basic computer skills before COVID-19 pandemic		
Had Basic Skills	316	91.6

No Basic Skills	29	8.4
Experience in the use of E-learning platforms before COVID-19 Pandemic		
Experienced	126	36.5
None	219	63.5
University offering E-learning mode of teaching		
Offer	305	88.4
Do not offer	40	11.6
Hours engaged in online learning per day		
Up to 2 hours	140	40.5
2-4 hours	130	37.7
4-6 hours	32	9.3
6 and more hours	43	12.5
Training on E-learning before implementation		
Trained	244	70.7
No training	101	29.3
First place of use of E-learning Platforms		
From institution	190	55.0
Self-paced	113	32.8
Assisted by family/friend	42	12.2
Availability of resources to join the class in the online mode of education		
Available all the time	69	20.0
Partially available	269	78.0
Not available	7	2.0

The benefits, challenges, and modifications for effective E-Learning are presented in Table 6. Among the benefits of the e-learning, development of new skills came first (65.1%), followed by Innovative learning (45.7%), then Flexibility (32.2%). Most of the participants (66.1%) were mostly disturbed by family members during e-classes. Among the general challenges, the most prominent is Access to internet surfing (97.4%), followed by Stress due to learning (93.6%), then Interaction with teachers (91.6%). The least challenge was Access to software applications (22.6%). The most significant modification for better e-learning was Training on uses of E-learning/online learning use (78.4%), followed by Useful websites (21.2%) then Online library facility (15.7%).

Table 6: Benefits, Challenges, and Modifications for effective E-Learning

Parameter	Frequency	Percentage (%)
Total	*345*	*100.0*
Benefits		
Flexibility	108	32.2
Time Management	106	31.6
Innovative learning	153	45.7
Interest	73	21.8
Easy access	36	10.7
Development of new skills	218	65.1
Increased motivation	51	15.2
No benefit	31	9.3
Disturbance from your family members during E-class		
Mostly	228	66.1
No disturbance	117	33.9
General Challenges		
Access to software application	78	22.6
Access to internet surfing	336	97.4
Managing Electronic devices	307	89.0
Interaction with teachers	316	91.6
Stress due to learning	323	93.6
Time management	229	66.4
Motivation towards learning	226	65.5
Modifications for better E learning		
Training on uses of E-learning/online learning use	240	78.4
Useful websites	65	21.2
Recorded videos	45	14.7
Live sessions using Facebook	26	8.5
Lecture notes	37	12.1
Webinars	34	11.1
Online library facility	48	15.7
Educational TV programs by National Media	35	11.4

Discussion of findings

Admittance to high caliber and rich training is the principal objective of any schooling framework. One of the significant destinations of advanced education is to give quality schooling

(Tuntirojanawong, 2013). The nature of advanced education intends to satisfy the desires of people and society. As per the after-effects of COVID-19, e-learning has become the new appropriate technique for impacting students across all backgrounds (Alhassan, 2020). This kind of training (e-learning) employs the use of computers and requires internet advancements (Rasouli, Rahbania, & Attaran, 2016). It also fosters changes in our experiences and perspective on learning and it is an amazing method of learning in higher education (Tuntirojanawong, 2013).

In this study, more than half (62.9%) of the students were not ready for the use of e-learning platform with a level of study associated with readiness even though 91.6% of the participants had basic computer skills before the pandemic, 36.5% had prior experience with the use of E-learning platforms before COVID-19 Pandemic. This is contrary to studies by Alhassan (2020) and Ali (2016) who argued that nursing students were ready for e-learning based on their usage of smartphones. However, the use of smartphones was the same with this study, where the most used device for e-learning was smartphone (55.1%), followed by Laptop (34.2%), then Personal desktop Computer (5.5%). More than 70.0% of the participants do not share their devices with other family members. On the contrary, the participants of this study posited that the most important requirement is the internet, before electronic devices such as computers, and smartphones. The major challenge of e-learning has to do with internet access because most of the respondents claimed they do not have internet connectivity all the time. Another challenge about internet connectivity was the high charges of internet access as well as the internet speed.

The student's most preferred e-learning platform was the institutional UHAS LMS, followed by Zoom and the least preferred was Viber call and Moodle App. This was mainly because they were trained on the usage of the UHAS LMS and have become more conversant with its usage because

that was the institutionally recognized platform for e-learning during the COVID-19 lockdown. This shows that education and enforcement of an e-learning platform are feasible.

From the study, it was gathered that among the recognized benefits of e-learning by the respondents were, development of new skills, followed by Innovative learning, then Flexibility of using e-platforms. This was backed by (Rasouli et al., 2016) who claim that in e-learning, the instructor-focused style of teaching and learning is swapped with a student-centered approach. It additionally gives incredible adaptability in showcasing philosophy, content administration, coordinated and offbeat communication among educators and students, arranging and structure of courses, instructive undertakings lastly understudy appraisal (Ünal, Alir, & Soydal, 2014). In this sort of training, the teaching-learning method goes beyond the classroom, leading to conceivable teaching and learning without limits (Rasouli et al., 2016)

Most of the participants were disturbed by family members during e-classes, students were challenged by access to the internet, stress due to learning, and participants missed out on interaction with teachers. The most wanted modification for better e-learning according to the students are training on the uses of E-learning/online learning use, development of user-friendly e-learning websites, and access to Online library facilities. This was also shown elsewhere (Ünal et al., 2014) that developing training programs for the students in order to help them to understand e-learning better, making its benefits more clear, offering better internet infrastructures with more computer and mobile technology facilities can help students increase their readiness levels.

Conclusion and Recommendations

In conclusion, although engaging students in this pandemic era can be good to keep them active and busy with studies, there are a lot of challenges that should have been addressed before the

pandemic era. For instance, the blended approach should have ushered students to online learning before the change to complete online learning. An organization's business environment, infrastructure, material, training process, history, human capital, and financial factors should all be considered when implementing e-learning. Any of these questions were not taken into consideration prior to the introduction of e-learning at the University of Health and Allied Sciences.

Based on these findings, the following are recommended for policy and practice for effective management of E-learning during the Covid-19 pandemic in Universities in Ghana. Firstly, to assist address accessibility issues, internet operators should ensure that internet connectivity is strong and also reduce the cost of internet bundles for both students and institutions. Secondly, the government should assist students to get laptops and tablets as some students rated challenges with phones and laptops as an important item. Thirdly, institutions must be pragmatic in introducing students to the various e-learning platforms to enable them undertake the online learning without difficulties. Lastly, the ministry of education should encourage tertiary institutions in Ghana to use the blended approach where most of the interactions should be done using a conventional approach but conducting assessment and assessing course materials should be done online.

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