

## Online Learning in Higher Education During COVID-19 Pandemic: A Case of Ghana

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### Abstract

The COVID-19 pandemic has been a major concern across the globe affecting nation's socio-economic development including education. It has pushes many HEIs in world to move into remote learning as a substitute of in-person instruction. The study explored students' response to online learning in higher education in Ghana. The study was guided by three research questions. Descriptive survey design was adopted and online questionnaire was used to gather data from 467 students in a higher education of Ghana. The data was analysed using frequency and percentage. Overall, the study found that students had positive response to online learning. They knew of online learning and some of the platforms like UCC Moodle platform, Alison and Google classroom. They would also like to use other social media platforms. They would use smart phone and laptop for the online learning. However, they were not ready for online learning because they lacked formal orientation and training, perceived lack of constant access to internet connectivity and financial unpreparedness. Management of the university should provide resources to help students assess whether they are ready to take an online course and offer suggestions for preparation. Since internet accessibility is expensive in Ghana at the moment, management of the university should hold negotiations with Cellular operators for educational discount for distance students. Academic staff should provide instructional support through instructional activities that can help students in appraising their readiness, gaining the needed skills to learn online and consider using flexible approaches to teaching and deadlines to accommodate students with reliable Wi-Fi or broadband access challenges as well as emotional response to help student ensure smooth transition to emergency remote learning/teaching.

**Keywords:** COVID-19, e-learning, Higher education, Student readiness, Remote instruction

## 1. INTRODUCTION

The 2019–20 coronavirus pandemic is an ongoing pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (sars-cov-2) (WHO, 2020a). The outbreak was identified in Wuhan, China, in December 2019, declared to be a

public health emergency of international concern on 30 January 2020, and recognised as a world pandemic (WHO, 2020b). More than 2 million cases of covid-19 have been reported in 210 countries and territories resulting in more than 114,000 deaths, more than 438,000 people have recovered, although there may be a possibility of reinfection (Feng & Cheng, 2020; Politi, 2020). A lot have been said about the spread, symptoms and recommended preventions measures about COVID-19 which this paper cannot talk about it all.

The pandemic has affected educational systems worldwide, leading to the widespread closures of schools, universities and colleges as a result over 80% of the world's students (as of 21 April, 2020, approximately 1.723 billion learners) are not attending school (Crawford et al., 2020; Ebrahim, 2020; Day, 2020; Kokutse, 2020; Quinn, 2020; UNESCO, 2020a; UNICEF, 2020). About 191 countries have implemented nationwide closures and five (5) have implemented local closures, impacting about 99.4 percent of the world's student population (UNESCO, 2020a; 2020b). School closures have impacted several stakeholders like students, teachers, and families as well as economic and societal consequences (Barrett, 2020; Lindzon, 2020; Mitchell & Jamerson, 2020; Ngumbi, 2020; UNESCO, 2020; 2020d; 2020e). The closing down of schools have broadened learning disparities and have indignant susceptible students disproportionately (UNESCO, 2020b; 2020c).

In addressing this issue, UNESCO indorsed the use of distance learning programmes and open educational applications and platforms that schools and teachers can use to reach learners remotely and limit the disruption of education (UNESCO, 2020c; 2020d). On account of this recommendations, higher education institutions (HEIs) across the world have started operating remotely via online platforms for emergency remote teaching and learning as part of measures to reduce the spread of COVID-19 (Bozkurt & Sharma, 2020; Crawford et al., 2020), conversely, powered by the digital divide (Bozkurt & Sharma, 2020; UN, 2020; UNESCO, 2020f, Ziyu, 2020) due to inequalities among higher educations and socio-economic differences among students. Regarding this, many scholars questioned if HEIs are prepared for moving into digital era of learning (Houlden & Veletsianos, 2020).

Remote learning offers students with elasticity in where and when they learn. Students have more control in when and how they complete course learning activities. However, the online learning necessitates diverse qualities of students such as knowledge of technology use, time management and organization, and interaction using online technologies (Joosten & Cusatis, 2020). Students who enroll in online courses may have mixed levels of readiness and

preparedness that could likely affect their academic excellence (Hung et al., 2010; Yeh et al., 2019). To ensure high level of student engagement, HEIs can provide resources to help students assess whether they are ready to take an online course and offer suggestions for preparation (Joosten & Cusatis, 2020). Aside this, lecturers can also provide instructional support via instructional activities that can help students in appraising their preparedness and readiness (e.g., assessment), gaining the needed skills to learn online (e.g., orientation), and managing their expectations about learning online (e.g., course tours and tips), which can help increase students' chances for success in an online course (Joosten & Cusatis, 2020).

### **COVID-19 in Ghana**

In Ghana, the first case of COVID-19 has been recorded on 12th march, 2020 (Ghana Health Service [GHS], 2020a). The report from GHS indicated that two individuals who had returned from Norway and Turkey respectively tested positive for COVID-19 per the laboratory results from the Noguchi Memorial Institute for Medical Research (NMIMR) (GHS, 2020b). The cases of COVID-19 increased from two to four the following day and from four to six on the 14th of March. On the 15th of March the country recorded additional four cases of COVID-19 resulting in a total of 10 confirmed cases. Currently (as at 23rd April, 2020, 11:00am) confirmed cases of COVID-19 stands at 1154, 99 of them had recovered and 9 people had lost their lives (GHS, 2020b). To curtail the spread of COVID-19 in Ghana, the president of Ghana had interdict all public gatherings including conferences, workshops, funerals, festivals, political rallies, church activities and other related events. In addition, both public and private basic schools, senior high schools, colleges and universities were closed down (KPMG, 2020; Kokutse, 2020; Nyabor, 2020).

In Ghana, in an attempt to continue with academic work, some universities including University of Ghana, Wisconsin International University College, University of Education, Ashesi University and Kwame Nkrumah University of Science and Technology have resorted to e-learning platform for engaging students in academic activities (Anaba, 2020; Ashesi University, 2020). Recently, the Directorate of Academic Affairs at the University of Cape Coast (UCC) had released a notice to inform its students about the resumption of official academic work (lectures and tutorials) online from Wednesday, April 22, 2020 to Tuesday, June 2, 2020 and this will be done through UCC Moodle Platform (Bonney, 2020). Lecturers were mandated to develop their model and upload it on e-learning platform to ensure effective instructional discourse.

However, this sudden change to remote learning/teaching has raised concern among many stakeholders like academic faculty, students and parents due to perceived challenges like internet access and electronic/e-learning devices. In view of this, the Student Representative Council (SRC) of UCC has ordered all students to boycott the registration process because of the challenges some students who find themselves in areas of the country where there are weak or no internet connection might face. The SRC admonished Management of the university to give students internet data packages to help them participate in online studies (Anaba, 2020). It is worth noting that the menace of COVID-19 has offered some exceptional challenges for higher education institutions for all parties involved including students, faculty, and staff who are being asked to do unexpected things regarding course delivery and learning that have not been seen on this scale in the lifetimes of anyone currently involved. This paper, therefore, examines students' response to online learning in higher education in Ghana through the following questions:

1. Are students aware of online learning and its platforms?
2. What kind of devices/mediums do students use to access online learning?
3. What is the perception and readiness of students for online learning?

## **2. LITERATURE**

### **COVID-19 Pandemic and Higher Education**

The current pandemic caused by the novel coronavirus (COVID-19) has had a profound impact on our daily activities and has presented us with unprecedented challenges. As the dreadfulness of COVID-19 became crystal clear, globally, governments closed schools in an attempts to curb the spread of the virus impacting over 90% of the world's enrolled learners (Riggall, 2020; UNESCO, 2020a). The intermissions to education can have long-term repercussions, exclusively, for the most vulnerable. This may not only cause loss of short-term learning but also further loss in human capital and diminished economic opportunities in the long-term as well as prejudice towards particular groups (Watson, 2020; World Bank, 2020a). The COVID-19 outbreak is affecting education in terms of reduction in utilisation of schools, lack of quality appropriate education, reduction in access to education services, reduction in availability of education services, lack of maintenance of schools, lack of teacher training, fear of school return and emotional stress caused by outbreak, reduced financial resources, diversion of resources and teachers, confusion and stress for teachers, lack of at-home educational materials,

challenges measuring and validating learning, parents unprepared for distance and home schooling, challenges creating, maintaining, improving distance learning, loss of quality teaching and learning, social isolation, emotional disequilibrium and school drop outs (Bozkurt & Sharma, 2020; Hallgarten, 2020; UNESCO, 2020b).

Due to these effects, governments are taking measures to ensure that education continues via emergency remote learning/teaching approaches with many deploying online learning solutions (David *et al.*, 2020; Jalli, 2020; UNESCO, 2020c; 2020d). This may seem experimental to some higher education institutions, typically, those in developing countries like Ghana, and however, there might be others who have managed online teaching/learning before. Regarding this, several organisations are providing assistance to ensure that learners continue their education worldwide. For example, the World Bank is vigorously working with Ministries of Education in numerous countries to support their efforts to employ instructional technologies of all sorts to provide remote learning opportunities for students while schools are closed as a result of the COVID-19 crisis (World Bank, 2020a). Similarly, UNESCO is helping countries in their labours to alleviate the instantaneous effect of school closures, particularly for more vulnerable and disadvantaged communities, and to facilitate the continuity of education for all through remote learning (UNESCO, 2020a).

However, it seems that higher educational institutions understand the pedagogical, logistical, and also technological challenges to these timely measures. Most of the higher educational institutions in low- and middle-income countries, including students and teachers, lacked access to high-speed broadband or digital devices needed to fully deploy online learning options. Thus, transition from in-person to person instruction to emergency remote learning/online learning has wide-open cavernous digital divides between and within schools and countries (World Bank, 2020a; 2020c), particularly, among low-medium income countries like Ghana. The condition is far poorer for lower resource environments in middle- and- low-income countries with internet dissemination rates typically less than 50% and a large fraction of students without devices to enable emergency remote learning at home (World Bank, 2020c). This result indicates the capacity of parents and even schools to support emergency remote learning or online learning during school closures as result of COVID-19. Per this, higher education institutions need to cogitate substitute ways for students to continue learning when they are not in school, like in the current COVID-19 crisis.

On this account, UNESCO is centring on solidifying capacities of distance learning systems to overcome the digital divide through resources providing support to teachers, parents and caregivers. In equivalent, the Organization is firming its assistance with the open educational resource (OER) community to support openly licensed teaching and learning materials in the framework of the 2019 UNESCO OER Recommendation; identify MOOCs and OERs which can provide online courses and self-directed learning content through both mobile and desktop platforms; support, through the OER4Covid initiative, transition to online learning using OER during the COVID-19 pandemic (UNESCO, 2020f; 2020g).

### **Higher Education Transition to Remote Learning**

Owing to the risk of COVID-19, higher education institutions are fronting choices about how to continue instruction while keeping their faculty, staff, and students safe from the spread of COVID-19. On this account, many institutions have authorised faculty to move their courses online or remotely to help thwart the spread of COVID-19. However, it seems that, in appearance, higher education institutions across the globe are engaged in online learning, nevertheless, in essence, this is rather a provisional solution, one that would be more properly named “emergency remote teaching” (Bozkurt & Sharma, 2020; Golden, 2020). In view of this, Hodges *et al.* (2020) indicated that a well-designed online learning experiences are meaningfully different from courses offered online in response to a crisis or disaster. Online education/learning is not the same as emergency remote instruction (Bozkurt & Sharma, 2020; Golden, 2020; Hodges *et al.*, 2020). This study primarily focus on emergency remote learning/teaching as result of COVID-19 outbreak.

According to Bozkurt and Sharma (2020), remote education refers to spatial distance and an obligation, which means that we have to use different strategies and approach the case with different priorities. In a similar vein, according to Hodges *et al.* (2020), emergency remote learning/teaching is a temporary shift of instructional delivery to a substitute delivery mode due to catastrophe situations. It comprises the use of fully remote teaching solutions for instruction or education that would otherwise be delivered face-to-face or as blended or hybrid courses and that will return to that format once the crisis or emergency has abated. The principal goal in these conditions is not to re-create and design a vigorous educational ecosystem but rather to offer impermanent access to teaching and learning and instructional supports in a manner that is quick to set up and is reliably available during COVID-19 crisis (Hodges *et al.*, 2020). Emergency remote learning/teaching occurs outside of a physical classroom. Emergency

remote learning/teaching which appear to be identical with e-learning, takes place online. Remote teaching is naturally facilitated through technology, such as video conferencing software, discussion boards or learning management systems. Both students and instructors interact via two-way communication technologies. Instructors are separated from their learners in time and distance. This type of teaching may be synchronous, where students watch instructors deliver their lectures live, or asynchronous, where students watch lecture recordings at a later point in time. Best practices for remote teaching include: providing ongoing feedback, making assignment guidelines clear, and making effective use of online resources.

Teaching remotely obviously diminishes the number of interactions on campus and thereby also significantly decreases the rate of transmission of COVID-19 (Mukhopadhyay & Mukhopadhyay, 2020). Emergency remote learning can ensure that students' continue learning through a variety of avenues such as digital technologies which can offer a wide set of capabilities for remote learning (World Bank, 2020a). It enables learners to extend learning outside the boundaries of traditional learning institutions through informal and enriched learning experiences using online communities on new platforms such as social media and other social platforms (Saykili, 2019). It can essentially be as effective as face-to-face education when done right. When emergency remote learning is well-planned-structured, conducted in an appropriate learning management system and is in the hands of skilled lecturers, it can provide an equivalent learning experience to face-to-face (Taylor-Guy & Chase, 2020). All higher educational institutions worldwide are seeking viable, blended and sustainable modes of online courses (Ng, 2020). Learning management systems (LMS) such as like University of Cape Coast (UCC) Moodle are designed to support online learning. These systems effectively organise learning resources, including multimedia resources that students can easily access. Students can engage in collaborative activities with their peers and lecturers, through tools such as zoom, WhatsApp, discussion boards and wikis.

The call by higher education institutions to move instruction online can enhance the flexibility of teaching and learning anywhere and anytime, yet, it seems that the speed at which this move is expected to happen is unprecedented and staggering. This abrupt substitution from in-person to emergency remote learning/teaching has left academic faculty, staff and students with challenges. Thus, emergency remote learning/teaching introduces change to both the people and the higher education institutions on any scale (Saykili, 2019; Ng, 2020). For example, educators have not been prepared to teach well with technology, let alone teach remotely with



technology, hence, they struggled to figure out how to use digital tools, online resources, and apps to continue their teaching online (Trust, 2020). Similarly, higher education faculty have limited opportunities to learn how to teach with technology, including how to find, evaluate, adapt and use technology to enrich learning. As a result, the majority of educators were completely underprepared to design remote learning experiences with technology when states and districts started closing schools for COVID-19 (Trust, 2020).

Also, the shift to emergency remote learning/teaching presents a number of concerns for student learning, issues of equity, internet connection, personal learning devices, student data accessibility, and the digital divide. Thus, the shift to emergency remote teaching has illuminated and exacerbated the digital divide (Trust, 2020). Likewise, according to Taylor-Guy and Chase (2020), emergency remote learning hinders student cohesiveness, peer-to-peer and student-lecturer interaction beyond the real-time video or chat interactions. This promotes student disengagement and dropout (Taylor-Guy & Chase, 2020). Saavedra (2020) argued that developed countries are at a gain in introducing emergency remote teaching, but then again, this is invalid for every country. For example, Adam (2020) indicated that it is only the advantaged that will profit from this emergency remote instruction/online learning. Obviously, the most vulnerable members and poorest of society are being firmest hit, both by the COVID-19 pandemic and the response (Guterres, 2020). It is evident that both developed and developing countries have already been grief from interludes to education, and for many, this is not a new narrative.

On the basis of this evidence, higher educational institutions should focus on producing solutions on larger grounds, because conveying “subject matter” is not the only prime concern, empathy, caring and supporting learners during COVID-19 crises is similarly imperative. The higher education institutions should upskilled their staff to deliver this kind of quality online education and provide effective emotional presence in order to create a climate of empathy and care. This could help ensure quality student engagement and reduce dropping out early (Bozkurt & Sharma, 2020; Taylor-Guy & Chase, 2020). Higher educational institutions should focus on different types of presence, such as teaching presence, cognitive presence and social presence. They should show assurance and obligation to help students, and to establish instructional process on the grounds of a “pedagogy of care”, not on purely didactic and insensitive grounds because it is further significant to build support communities, and share the knowledge and experience in order to provide efficient and meaningful learning processes (Bozkurt & Sharma,



2020) taking into consideration the demographic profiles of the students such digital divide, technological infrastructure and socio-economic disparity among leaders.

### 3. METHODOLOGY

The study employed survey design with the focus on obtaining answers to a series of questions which are carefully planned and given out to participants (Fraenkel & Wallen, 2010). The study covered undergraduate students in the University of Cape Coast (UCC) in Ghana. Students were invited to participate in online survey because they were not Campus at the time of study due to COVID-19 pandemic. Questionnaire containing 14 items was used to gather data from the students on their reactions towards resumption of academic work online. A total of 467 students responded to the survey and data was analysed using frequency and percentages.

### 4. FINDINGS AND DISCUSSIONS

This section presents the results, interpretation and discussion of the findings in relations to the research questions that were formulated. Background information of the respondents was presented first followed by the main results.

#### Background Information of Respondents

Table 1 shows the results of the respondents concerning their gender and age distribution. Out of 467 respondents, the majority were female students (n=255; 54.6%) and 147(31.5%) of the respondents were within the age bracket of below 25 years while 86 of them representing 18.4% were above 30 years of age.

Table 1:

Background Profile of Respondents (n=467)

Variable	Sub-scale	<i>f</i>	%
Gender distribution	Female	255	54.6
	Male	212	45.4
Age distribution	Below 25 years	147	31.5
	25-27 years	124	26.6
	28-30 years	110	23.6
	Above 30 years	86	18.4

Source: Field data, 2020

### Are students aware of online learning and its platforms?

The objective of research question one was to identify whether students are aware of online learning and its platform to be used in COVID-19 pandemic. The results are presented in Table 2.

Table 2

Students' Awareness of Online Learning and Platforms (n=467)

Variable	Sub-scale	f	%
Heard of online learning/e-learning before	Yes	357	76.4
	No	110	23.6
Online learning platform awareness	UCC Moodle platform	132	28.3
	Alison	202	43.3
	Google classroom	125	26.8
	Coursera/Udemy	3	0.60
	Blackboard	5	1.00
Social media platforms preference as on-learning tools	WhatsApp	236	50.5
	Facebook/Twitter	21	4.50
	YouTube/Skype	43	9.20
	Zoom	82	17.6
	Google meeting	85	18.2
Awareness of resumption of academic work online	Yes	396	84.8
	No	71	15.2

Source: Field data, 2020

The results, as shown in Table 2 revealed that most of the students (n=357; 76.4%) had heard of online learning since they came to the university and however, a significant fraction of the students had never heard of e-learning before since they came to campus. Regarding respondents awareness of e-learning platforms, most of them heard of Alison (n=202; 43.3%), UCC Moodle platform (n=132; 28.3%) and Google classroom (n=125; 26.8%) among others. E-learning platform enables student-instructor and student-student interaction anytime, anywhere on a subject matter using tools such email, discussion forums, wiki, video conferencing among others. About social media platform preference among students as a learning tool during online instruction, majority of the students would prefer WhatsApp (n=236; 50.5%), Google meeting (n=85; 18.2%) and Zoom (n=82; 17.6%) among others. This level of knowledge could be attributed to the general computing courses like Information Literacy (INFO LIT) and Information Technology Skills (INFO TECH) that the students were taught at level 100. Others could have heard about online learning from other sources like private tuition not necessary at the University. The results supported the study of Edumadze *et al.* (2017) in Ghana that students were informed of e-learning (59.7%) but lacked knowledge (64.3%) on LMS platforms. They also perceived some social media platforms as more interactive. It could

be that they had been using these platforms in their private lessons or group discussions or some lecturers might be engaging them with course information and materials on such platforms. This results supported the study of previous researchers that students preferred and used social media platforms for their academic work which influence their academic success (Barhoumi, 2015; Gon & Rawekar, 2017). Conversely, the results disconfirmed the study of Valtonen *et al.* (2009) that Finnish students had shallow knowledge and negative perception towards online learning. This low level of knowledge and negative perception towards LMS platforms could impede on students' transition to emergency remote learning during COVID-19 pandemic.

Related to resumption of academic work online, the majority of the students (n=396; 84.8%) were aware of it. The results are line with the study of AACSB Business Education Intelligence Survey (2020) that students were informed about emergency remote learning and teaching during COVID-19 crisis and most institutions had converted face-to-face courses to online, but those in Canada, Africa, and the United States showed the lowest conversion to online and virtual formats. This result was also corroborated by the study of Rush University (2020) where almost 99% of students gave favourable ratings to the information they received by the University about COVID-19 and 95% of students found the information given about COVID-19 and transitioning to online/remote learning were very helpful, helpful, or somewhat helpful.

### **What kind of devices/mediums do students use to access online learning?**

The research question two sought to identify the online learning devices that students could have access to and use during COVID-19 outbreak, how effective they would be in using those devices and their accessibility to internet connection. The results are presented in Table 3.

Table 3

#### **Students' Access to Online Learning Devices (n=467)**

<b>Variable</b>	<b>Sub-scale</b>	<b>f</b>	<b>%</b>
Online learning devices to be used	Smart phone	358	76.7
	Desktop	6	1.3
	Laptop	40	8.6
	Tablet/iPad	1	0.2
	I don't have any of them	62	13.3
Ability to use online learning devices effectively	Smart phone	186	39.8
	Desktop	5	1.1
	Laptop	161	34.5
	Tablet/iPad	9	1.9
	Not sure	106	22.7

Access to constant internet connection for online learning	Yes	69	14.8
	No	259	55.5
	Maybe	139	29.8
Able to purchase internet data/bundle for online learning	Yes	42	9
	No	317	67.9
	Maybe	108	23.1

*Source: Field data, 2020*

The results in Table 3 showed that majority of the students would have access and used smart phone (n=358; 76.7%) during COVID-19 pandemic. This was followed by laptop while significant fraction of the students reported that they do not have smart phone, desktop, laptop, table/iPad (n=62; 13.3%) which could be used during COVID-19 crisis. Concerning their effectiveness in the use of these devices, most of the students indicated that they could effectively use smart phone (n=186; 39.8%) during online learning followed by laptop (n=161; 34.5%), however, 106 of them representing 22.7% were not sure whether they could effectively use any of the online learning devices. Students' effectiveness in the use of these devices could be attributed to computing literacy via the general computing courses like Information Literacy (INFO LIT) and Information Technology Skills (INFO TECH) offered or computing literacy learnt privately elsewhere. These results are not consistent with the study of Brooks and Grajek (2020) that most students had access to digital devices including smart phone, laptop, tablet, desktop and hybrid or 2-in-1 device (e.g., Lenovo Yoga, Microsoft Surface) that could be used for emergency remote learning/teaching during COVID-19 outbreak. Students' inability to have access to online learning devices could affect their level of transition to emergency remote learning/teaching during this COVID-19 outbreaks. These results are in agreement with the study of Rush University (2020) that students had transition challenges due to digital divide among students. Transitioning to emergency remote instruction at scale is a very difficult and highly complex undertaking for education systems, even in the best of circumstances (World Bank, 2020b).

Internet is the technology of choice due to its potential for effective interactivity. Access to the internet is one of the critical factors to emergency remote learning/teaching success since students will have to access the internet before logging into a particular LMS platform. The majority of the students (n=259; 55.5%) indicated that they cannot have access to constant internet connection for emergency remote learning while 139(29.8%) and 69(14.8%) of the students reported that they would have access to constant internet connection respectively. This is due to the fact that majority of the students (n=317; 67.9%) perceived that they cannot afford

to buy the internet data or bundle for the emergency remote learning/teaching while 108(23.1%) of them reported that they could afford to purchase internet bundle for their emergency remote learning/teaching. We agreed with the students' concerns about lacked of constant access internet connectivity for emergency remote learning/teaching. If already, students' access to internet connectivity on campus is a major problem, how much more being at home? For those students who may be off the grid, is an indication of disengagement from the emergency remote learning/teaching. Students' transition and participation in emergency remote learning/teaching involves having access and use of computing devices and regular internet connectivity among others and it would be a colossal cost for the students. These results are consistent with the study of Houlden and Veletsianos (2020) that educators shared concerns for students who do not have easy access to Wi-Fi or computers during COVID-19 crisis.

Students' inability to have access to online learning devices, internet connectivity and Wi-Fi would create digital divide due to economic disparity among students. These results are line with previous study that half of all students currently out of the classroom due to COVID-19 (nearly 830 million learners globally) do not have access to a computer and 43% (706 million) have no Internet access at home. Nearly, 90% of students in sub-Saharan Africa do not have household computers while 82 per cent are unable to get online. About 56 million learners live in locations not served by mobile networks, almost half in sub-Saharan Africa (UN, 2020; UNESCO, 2020f). Similarly, other researchers found that instance access to the internet is over 80% of the population in some Southeast Asian countries, but as low as 39% in Vietnam and some African countries. Even people with access to the Internet and electronic devices experienced some infrastructural divide in Internet speeds in different regions (David *et al.*, 2020; Jalli, 2020). In Italy, Rome about 25% of families do not have a broadband connection during this COVID-19 pandemic (UNESCO, 2020g). In Australia, Thomas et al. (2018) found that the "digital divide" remains largely unchanged among students because internet usage is not growing, these individuals whose internet is intermittent and not fast or reliable enough to cope with emergency remote learning/teaching, and those in large families sharing limited digital devices, may get left behind (Graham, & Pasi, 2020). The call for online learning by educational sector during COVID-19 worsens educational inequality (Ziyu, 2020) and it could affect students' smooth transition to emergency remote learning/teaching during COVID-19 crisis.

Transition to emergency remote learning/teaching due to COVID-19 at scale raises philosophical equity concerns among disproportionately students (e.g. rich over poor, urban over rural, high-performing over low-performing, student in highly educated families over students from less educated families) (World Bank, 2020b). Accordingly, when it comes to the digital divide, “the socio-economic situation of the students and their families is an aggravating factor”. For example, students in economic and financial distress are more likely to have poor or no internet access - because they cannot afford the cost of a laptop/computer or the internet connection or because they live in regions or neighbourhoods with low connectivity. These digital and economic divides, combined with a protracted lockdown, will result in affected students lagging further behind during this COVID-19 outbreak (UNESCO, 2020g). The success of students’ abrupt shift to remote learning/teaching during COVID-19 calamity would depend on their ability to have access e-learning devices and internet connectivity, however, this would be a huge cost to them as result of socio-economics inequality and financial distress among students. Thus, remote learning/teaching and online learning can involve significant costs to students and their families. This result buttressed the study of Jalli (2020) that many people in Southeast Asia still cannot afford unlimited and stable Internet connection. Equally, Edumadze *et al.* (2017) in Ghana found that students were not freely willing to contribute financially to their e-learning endeavour because it would be an added cost to existing expenditure in relation to their education. The charges for internet connectivity will bar students in marginalised groups from participation in learning (Riggall, 2020).

From these discussions, it is worth nothing that emergency remote learning/teaching will be easier for those with access and will exclude large groups of disadvantaged learners. Most students will have great difficulty accessing emergency remote learning/teaching, the impact of which will probably be of limited value for most of them. This is especially true for students in developing countries like Ghana, in households where Internet access is poor (or non-existent), who have little prior experience with online learning, and/or are subject to numerous other disadvantages (World Bank 2020b). These inequalities are a real threat to learning continuity in higher education at a time of unprecedented educational disruption due to COVID-19. Thus, this could negatively affect students’ transition to emergency remote learning/teaching, emotional equilibrium, participation in remote learning/teaching, satisfaction, online work skills proficiency, motivation for learning and self-directed learning (Hung *et al.*, 2010; Edumadze *et al.*, 2017; Yeh *et al.*, 2019; Czerniewicz, 2020; Graham & Pasi, 2020).

To ensure students' smooth transition to emergency remote learning/teaching and avoid digital divide, infrastructure gap and socio-economic disparity among students, the variable costs to be incurred by the students during COVID-19 period could be reduced by government, donors and higher education institutions in partnership with internet service providers and other telecommunications companies. Mundy and Hares (2020) advocated that that governments and donors should consider how non-fixed costs can be redeployed to keep education moving in order to reduce the financial concerns among students and parents during this COVID-19 pandemic. Equally, to reduce fear and ensure emotional stability in remote learning/teaching among our students during COVID-19 outbreaks, higher education institutions should attempt to intensify emotional presence in order to build and maintain a conducive climate of empathy and care via teaching presence, cognitive presence and social presence (Bozkurt & Sharma, 2020). Equity and inclusion must be at the heart of higher education response and solutions. Accordingly, to ensure a wider transition and full engagement in emergency remote learning/teaching, promotion of social justice and equity are other important issues that should still be on higher education agenda (Bozkurt & Sharma, 2020).

### **What is the perception and readiness of students for online learning?**

The objective of this research question was to assess students' perception of online learning and their readiness and preparedness towards on online learning. The results are presented in Table 4.

Table 4

Students' Perception and Readiness for Online Learning (n=467)

<b>Variable</b>	<b>Sub-scale</b>	<b>f</b>	<b>%</b>
Introduce to UCC online learning platform before	Yes	62	13.3
	No	405	86.7
First-time to use online learning	Yes	429	91.9
	No	38	8.1
Online learning preparedness/readiness	Yes	152	32.5
	No	222	47.5
	I don't know	93	19.9
Online learning is necessary	Yes	265	56.7
	No	202	43.3

*Source: Field data, 2020*



In Table 4, majority of the students (n=405; 86.7%) were never introduced to e-learning and this resumption of academic work online would be their first-time to use e-learning (n=429; 91.9%) in the university. This result raises a substantial question about the relevance and potency of general computing courses like Information Literacy (INFO LIT) and Information Technology Skills (INFO TECH) that students were taught. These courses were offered or taught to enhance students' computing literacy and their exposure to LMS or e-learning platforms. It is worth noting that the students were not formally introduced to e-learning or had any formal training on e-learning platforms in the university but they had knowledge on some of the platforms like Alison and Google classroom among others. It could be that they were engaged in private lessons elsewhere. Contrariwise, lack of formal e-learning training and orientation might pose serious challenges for HEIs demanding for a shift to emergency remote learning/teaching in response to the COVID-19 pandemic. If students are not trained on how to use online learning platforms, they would lack the requisite competencies needed to function very well in emergency remote learning/teaching during COVID-19 pandemic. This could negatively affect their readiness and level of engagement in online learning activities.

These results agreed with the study of Rush University (2020) that most students in the university are new to this e-learning, which made the transition difficult, especially related to time management and the need for more time to adjust to remote education. Further, the results are in agreement with the study of Mereku *et al.* (2008) in Ghana that HEIs provide little opportunity for students to learn skills necessary to integrate technology in learning. Likewise, in China and Nigeria, Zhou *et al.* (2011) and Garba and Alademerin (2014) found that students were not well prepared to use technology tools in their learning respectively. Brooks and Grajek (2020) also found that majority of students had not received any e-learning training. Most students had some experience using e-learning but significant portion of students had minimal experience using online platforms for more-involved course activities (Brooks & Grajek, 2020). This could have negative repercussion on students' transition to emergency remote learning/teaching during COVID-19 disaster. However, the results are dissimilar to the study of Agyei (2012) in Ghana who concluded that students were well prepared to use technology. Although, majority of the students claimed that they were not introduced and trained on LMS in the university, we should not down-look the fact that some of the students might have knowledge and experience on online learning. Others might take online private computing courses like Alison and be attending computing classes privately elsewhere. This could enhance

their technological knowledge and skills. This result agreed with the study of Edumadze *et al.* (2017) in Ghana that students were computer literate and they had potential to engage in e-learning activities. This infers that the highly motivated and well-endowed students, especially those with previous experience in online learning, are the most likely to take the most advantage of emergency remote learning/teaching opportunities. Correspondingly, the students who would have sufficient access to good bandwidth and connected devices, sufficient family and peers support, competent and well versed in using technology tools to support their learning could hugely benefit from the shift to emergency remote learning/teaching (World Bank, 2020b)

In furtherance, speaking of preparedness and readiness, most of the students (n=222; 47.5%) were not prepared or ready for emergency remote learning/teaching during COVID-19, 152(32.5%) of them were ready while 93(19.9%) of them do not know whether they are ready or not. These reactions and concerns of the students could be ascribed to several factors including unpreparedness, digital and infrastructure divide (access to online devices and issues of internet access) and technological competencies. The results are consistent with the study of Apau (2017) in Ghana that students lacked technological preparedness and readiness. Relatedly, Agyemang (2012) in Ghana, found that students lowly used technological tools due to the fact that they lacked technological competencies and preparedness. However, the results were contrary to the study of previous researchers that students' readiness for online learning was moderate and positive (Maleki-Marasht *et al.*, 2012; Ünal *et al.*, 2014; Okhovati *et al.*, 2015; Rasouli *et al.*, 2016; Caliskan *et al.*, 2017).

Despite lack of formal orientation and training in e-learning in the university, majority of the students (n=265; 56.7%) perceived online learning necessary for resumption of academic work while significant portion of the students disagreed with the idea (n=202; 43.3%). This result confirmed the study of Edumadze *et al.* (2017) in Ghana that students had positive attitude and perception towards e-learning. Similarly, Shraima and Khlaif (2010) in Palestine, found that students had positive perception towards e-learning methods but that they might not yet be ready to adopt them, however, contradicted the study of Valtonen *et al.* (2009) that Finnish students had superficial knowledge and negative perception towards online learning. This could affect students' behavioural outcomes including, engagement in online learning, satisfaction, motivation for learning, online work skills proficiency, self-directed learning, and efficacy in the use of online learning devices which in turn could affect their academic success during this

COVID-19 outbreaks. The result was corroborated by the study of Hung *et al.* (2010) in Taiwan that students' levels of readiness were low in learner control and self-directed learning. The students might not be prepared for this online learning because it is not what they planned for want, but as it stands now, it is what they are trap to go through for the rest of the academic year. It is true as indicated by LeBlanc (2020) that COVID-19 has thrust universities into unplanned, unwanted, and fraught experiment in online learning. Per this, there could be some resistance to online learning from the students. HEIs will need more than technology to have the capacity to offer flexible education in order to fully engaged students in e-learning instructional activities

## 5. CONCLUSION AND RECOMMENDATIONS

The COVID-19 pandemic is stimulating many HEIs across the world to adopt online learning in place of in-person instruction, in an effort to limit transmission of the virus. The study was conducted to explore students' response to remote learning/teaching in higher education in Ghana. The study concluded that most students had positive perception towards e-learning. They are aware of e-learning learning and some of the platforms like Alison, UCC Moodle platform and Google classroom. In addition, they would prefer and use social media platforms like WhatsApp, Zoom and Google meeting and frequently use smart phone and laptop as e-learning devices for remote learning/teaching called by the university. However, they had negative response to the online learning. They were not ready/unprepared for the transition to remote learning/teaching because they were not introduced to it (lacked training and experience). Likewise, they perceived constant access to internet connectivity as a challenge due to financial unpreparedness. This might lead to resistance from some student which could affect their remote instruction engagement activities and academic success. Lack of formal training and experience in e-learning platforms and students' unpreparedness could negatively affect their behaviour outcomes including engagement in learning, satisfaction, participation, motivation for learning, online work skills proficiency, self-directed learning, and efficacy in the use of e-learning devices and their academic performance.

Therefore, Management of the university should provide resources to help students assess whether they are ready to take an online course and offer suggestions for preparation. They should make accommodations for students who either do not have access to devices at all or lack devices that support the e-learning platforms. Since internet accessibility is expensive in

Ghana at the moment, management of the University should hold negotiations with Cellular operators like MTN and Vodafone Ghana for educational discount for students. They should orient students through instructions on how to transit to remote learning/teaching via e-learning platforms. Academic staff should provide instructional support through instructional activities that can help students in appraising their preparedness and readiness (e.g., assessment), gaining the needed skills to learn online (e.g., orientation), and managing their expectations about learning online (e.g., course tours and tips), which can help increase students' chances for success in an online course. They should provide coaching for their courses and consider using flexible approaches to teaching and deadlines to accommodate students with constraints or lacked reliable Wi-Fi or broadband access and also provide emotional response in order to build and maintain a conducive climate of empathy and care via teaching presence, cognitive presence and social presence and. They should be patience and compassionate with students who might have a difficult time accessing and using the platform and plan for the additional time this will take when login into online learning platforms

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### **Covid-19 Pandemi Sürecinde Yüksek Öğretimde Çevrimiçi Öğrenme: Gana Örneği**

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#### **Özet**

COVID-19 pandemisi, dünya genelinde eğitim dahil olmak üzere pek çok ülkenin sosyo-ekonomik gelişimini etkilemiş ve önemli bir endişe kaynağı haline gelmiştir. Bu bağlamda, dünyadaki birçok yükseköğretim kurumu yüz yüze eğitimin yerine uzaktan eğitime geçmeye mecbur kalmıştır. Bu çalışma, Gana'da yükseköğretimde okuyan öğrencilerin çevrimiçi öğrenmeye ilişkin görüşlerini ortaya koymayı amaçlamaktadır. Araştırma sorularına yanıt bulmak amacıyla tarama deseninin kullanıldığı çalışmada, Gana'da bir yükseköğretim kurumunda okuyan 467 öğrenciden çevrimiçi anket yoluyla veri toplanmıştır. Veriler, frekans ve yüzde kullanılarak analiz edilmiştir. Çalışma bulguları, öğrencilerin çevrimiçi öğrenmeye ilişkin olumlu bir tutuma sahip olduklarını ortaya koymaktadır. Katılımcılar, çevrimiçi öğrenme sürecini ve Moodle, Alison ve Google sınıfı gibi bazı platformları bildiklerini ifade etmiştir. Ayrıca öğrenciler, çevrimiçi öğrenme sürecinde akıllı telefon ve dizüstü bilgisayar kullandıklarını bunun yanında sosyal medya platformlarını da kullanmak istediklerini ifade etmiştir. Buna karşın öğrenciler, çevrimiçi öğrenmeyle ilgili oryantasyon yapılmadığı, internete erişim sorunlarının bulunduğu ve mali olarak bu sürece hazırlıksız oldukları için çevrimiçi öğrenmeye karşı olumsuz görüşler de bildirmiştir. Bu bağlamda, üniversite yönetimlerinin, öğrencilerin çevrimiçi öğrenmeye hazır olup olmadıklarını değerlendirmeleri ve buna göre öğrencilere öneriler içeren yardımcı kaynaklar sağlamaları beklenmektedir. Gana'da internet erişimi pahalı olduğundan, üniversite yönetimlerinin, uzaktan eğitim sürecinde öğrenciler için ilgili kurumlarla ücret indirimi konusunda görüşmeler yapması beklenmektedir. Bunun yanında akademik personelin, öğrencilerin çevrimiçi öğrenmeye yönelik hazırbulunuşluk düzeylerini artırmaları, öğrencilerin çevrimiçi öğrenmede etkin olmaları, internet bağlantısına sahip olmayan öğrenciler için alternatif iletişim yolları önermeleri beklenmektedir.

**Anahtar kelimeler:** COVID-19, e-öğrenme, çevrimiçi eğitim, öğrenme yönetim sistemi, yükseköğretim

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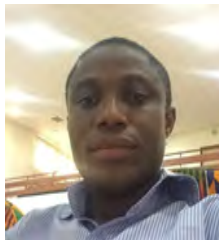
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