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DIGITAL LIBRARY USAGE DURING THE COVID-19 PANDEMIC

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Abstract:

Purpose: The purpose of the study is to analyse the effectiveness of digital library usage, the hindrances faced, and the satisfaction derived by students during the period of COVID-19 when all universities were closed down in Ghana.

Study design/methodology/approach: The researchers employed the survey method to collect data for analysis. Data collection was made with the use of semi-structured questionnaire displayed online for many respondents to access and respond. Based on the design employed, this study can be classified as quantitative. A total of 500 university students from the categories of undergraduate, masters, doctorate and others participated in the research. The data collected were analysed and frequencies determined.

Findings: The results of the study showed that digital libraries were made available, well updated and maintained regularly by the library staffs of the various universities in Ghana. Students effectively used the library systems and felt very much satisfied with the contents and quality of the resources available at the site as well as the flexibility of the system itself. Few challenges were encountered by students when using the system but these challenges did not have any substantial adverse effect on the usage of the digital libraries.

Limitation: Some university students could not access and respond to the online survey (questionnaire) due to poor internet connectivity in some parts of the country.

Originality: The research contributes to Digital Library Management as it showed the challenges encountered and satisfaction derived by students from the usage of Digital Library during the COVID-19 pandemic.

Key Words: COVID-19, digital library, academic library resources and services, lockdown period, corona virus pandemic

Introduction:

The Corona Virus outbreak was unexpected and took everybody aback in the world. According to Huang et al. (2020), a novel Corona Virus worldly known as COVID-19 was discovered in the last month of 2019 calendar year, in a seafood market in Wuhan Province of China. The results from clinical analysis showed that the virus is transmitted from person to person (Li et al, 2020; Paules et al., 2020; Wang, et al. 2020). From China, the virus spread to most parts of the world and following that, the Director General of World Health Organisation (WHO) declared COVID-19 as a Pandemic after assessing the vast spreading and severity of the pandemic in the world. As a result of this declaration, protocol was devised – wearing of mouth and nose mask, washing of hands constantly with soap under running water, use of hand sanitizer and social distance of at least one metre (WHO, 2020b). Due to fast spread of the virus, schools in China were closed and thereafter, countries in which the virus was detected also declared general lock-down; business organisations, schools, colleges, and universities were all closed down. Many people are not sure presently over how and when the pandemic will be over; the question remains whether things will ever go back to normal or as it was before the emergence of the pandemic and many suspicions remain doubtful (Lee et al., 2020).

WHO (2020b) has warned that COVID-19 is likely to haunt the world for a long time. Vaccines had been found and some people had been vaccinated and some are still taking the vaccine against the virus, however, some countries are still having numerous corona virus cases. This could have adverse effects on the teaching and learning activities of schools, universities and colleges as well as services provided by libraries within these institutions.

The pandemic forced the physical closure of many educational organisations (Massachusetts Department of Higher Education, 2020). Social distancing and regular hand washing are being practiced among people of the world. This brought about increased usage of internet technology to carry out most activities all over the world. The closure of educational institutions around the world could impact many students, lecturers, researchers and other users of libraries negatively (Aung & Khaing, 2015). Likewise, the closure of other organisations around the world could equally adversely affect millions of stakeholders, some even lose their jobs just as educational institutions were equally impacted (Tannaro, 2020). Consequently, managers of educational institutions especially universities had no option than adopting distance learning on an unprecedented scale. With this, educational institutions are racing to shift their teaching and learning activities online; students on the other hand had to resort to the use of digital libraries resources including e-books, journals, and other electronic resources to supplement the lecture notes made available to them by lecturers; researchers are also drawing chiefly on electronic resources for their research work thus making libraries to change their mode of operations (from physical to electronic), (Tannaro, 2020).

In the month of March 2020, Ghana also followed in the steps of other countries where the virus were detected earlier. Subsequently, Ghana confirmed the first cases of COVID-19 on 12th of March 2020 as reported by Daily Graphic of March 13, 2020. These cases were from two people who came into the country from Turkey and Norway (Kwaku Agyeman-Manu, 2020). The cases were confirmed by Noguchi Memorial Institute for Medical Research. Based on these reported cases the President of the Republic advised the citizens to care for their health by observing the protocol devised by the WHO. Corona virus cases were also detected in some African countries including Nigeria, Togo, Burkina Faso, Cote d'Ivoire, Egypt, Algeria, Zambia, and South Africa, among others.

The Daily Graphic of 14th March 2020 reported that three international schools and the United Nations (UN) Agency office in Accra have closed all parts of their facilities after two cases were confirmed in Accra. This closure of the above mentioned facilities was due to the fact that one of the cases was identified from the person who visited Turkey is a staff of the United Nations Development Programme (UNDP) and the UN agencies asked their workers to work from their houses. The schools which were closed down alongside the UN agencies are Ghana International School (GIS), the German Swiss International School, and the Lincoln Community Schools (LCS). The closure of these schools was due to the close association the schools has with one of the COVID-19 patient

Following confirmation of two additional cases in the country, the President of the Republic banned public gathering including conferences, workshops, funerals, festivals, political rallies, sporting events as well as religious activities. He encouraged private burials with those in attendance not be more than twenty-five. He equally announced the closure of all universities, Senior High Schools, Basic Schools both private and public instantly until further notice. He however tasked the Ministry of Education in collaboration with the Ministry of Communication to roll out distance learning programmes. The President however, stated that candidates of the Basic Education Certificate Examinations (BECE) and the West African Senior School Certificate Examination (WASSCE) candidates should be allowed to attend school to prepare for the examinations, but with the observance of the laid down protocols.

The lockdown of organisations in Ghana affected the operations of businesses and academic activities. The universities were almost half-way through in the second semester of the 2019/2020 academic year before the closure was announced by the president of the Republic. Since the universities and colleges were closed for

academic activities, the libraries were also closed down; however some staffs working in university libraries were allowed to work on shift basis. Few months after the lockdown of the universities and their libraries, the management of the universities decided to organise distance (online) teaching and learning. This decision was accepted by students and since they could not access the physical libraries, it was mandatory for the students and faculty members to resort to the use of digital libraries.

The physical library generally is a place located in a building where books, journals, print and electronic materials are kept for people to come and read and take out information for use. The physical library has its shortcoming and challenges due to the emergence of the internet technology, the notion about library as a physical existence has long been faced out to the increasing simplicity and less expensiveness of digital services. Dynamic trend in the use of digital library services has been now hastened by the recent lockdown caused by the COVID-19 pandemic. Quite a number of crossbreed libraries, with digital and physical collections coexist alongside each other; in some places the physical libraries are still used alongside the digital ones.

It is also evident that public libraries all over the world were quick to respond to the COVID-19 pandemic not only by adapting existing services but also by introducing new forms of services to remain in touch with their customers (using of digital library systems). They made conscious and extensive use of their social media for communicating and made changes in their operations and as for the promotion of library service ranging from e-books and streaming media to virtual programming and again from virtual story-telling to online knitting groups (Micaela, 2020; Perrine, 2020; Public Library Association, 2020)

Purpose of the study: Complaints were common among the university students when they were having online lectures and accessing the digital libraries. There were shortfalls in almost every aspect of the emergency online teaching and learning for which most students nearly gave up taking lectures online. Given the options many students would not have taken lectures online. Most of them complained of the inability to have stable connection to the internet, lack of books, journals and other resources. Based on the complaints from students during the pandemic, the researchers decided to conduct this study to ascertain the facts about the access to electronic libraries and their effective use by the university students in Ghana.

The aim of this study is to analyse the effective use of the digital libraries and academic resources, problems that confronted the students, the extent to which they are satisfied with the usage and quality of the resources accessed by them. Specifically, the objective of the study is to:

- a. examine effectiveness of digital library usage during the pandemic
- b. evaluate the problems encountered during the usage of the digital library, and
- c. analyse the satisfaction rate of digital library usage by students.

Literature review:

Presently, technology (computer and World Wide Web) has forced human beings in all fields and sectors of life to adopt new ways of doing things and for that matter everybody has no option but to accept and use them irrespective of individual area of specialty. Rapid changes in technology spiral equal revolution in the amount and type of information available. Accordingly, the roles of libraries and the duties of librarians have shifted dramatically to the handling of new user demands, technology and collections. In academic institutions, and learning communities, librarians and library staff are facing several problems in providing students and faculties with different services to satisfy their growing demands for information and other needs and interests (Simmonds, 2001). This research focuses on students' use of digital library resources and services focusing on the challenges and satisfactions they derived from the use of digital library resource during the COVID-19 period. According to the World Economic Forum, the closure of schools and universities in response to the COVID-19 has affected 70% of the world population (Adoteyi, 2020).

Furthermore, Adoteyi explained that despite the infrastructure unreadiness of higher education in Africa, the sector was compelled to move onto online and prepare for a world where COVID-9 or other similar disasters may occur. In response to the COVID-19 pandemic, on May 14, 2020, the UNESCO hosted webinar entitled, “The response of higher education to COVID-19 – higher education in Africa: challenges and solution through ICT, online training, distance education and digital inclusion.” The meeting included the Association of African Universities, the Africa union and its partners on higher education. The webinar deliberated on a coordinated response to COVID-19. The webinar concluded that higher education in Africa should digitize its curriculum and main stream online and distance education. The other recommendations called for training and capacity building in online and distance education, strengthening of knowledge structures and learning and research networks (UNESCO, 2020).

Academic libraries normally are under the supervision technically and administratively of a board. They offer a range of services and resources including online catalogue service for books and periodicals. In the field of librarianship, Sen & Greenhall (2014) stated that reflective practice assists library professionals deliver efficient and accountable service. Further, Sen and Greenhill (2014) emphasised that reflection has a potential to improve on the future practice and delivery of service. Chapman et al. (2009) also posited that reflective practice assisted professional to adapt to changing technology and improvement in series. Copyright issues are major problems digital repositories have to face. Information technologies really allow endless possibilities copying and digitally reproducing documents; international understanding of copyright often stifles the progress of library service both from the perspective of users and librarians; the former views the limitation as a nuisance, and the latter would like to extend library services to people who find it difficult or impossible to visit the library in person (Matusik, 2016: 262). “Balancing conflicting public and private interest” can be difficult and voices questioning the very philosophy of copyright were being heard more than ten years ago calling on the scope of copy as being radically out of date (Urs, 2004: 201-204; Lessig in Auluisio, 2013: 567).

To use the digital library and other electronic academic resources requires computers and/or any other mobile devices that are connectible to the internet. It is also necessary to have effective and stable connectivity to the internet. Assuming that all students in Ghana have computers and/or any other mobile device coupled with effective and stable internet connectivity, the use of the digital library will not be a problem. Other than that, some of the options available to the students were staying around campus to access Wi-Fi services available there or buying internet bundles from the mobile network operators like Vodafone – Ghana, MTN – Ghana, AirtelTigo, or Glo – Ghana, and others. These alternatives were to be made good out of their pockets.

There are several challenges associated with the use of digital information resource in several developing countries including Ghana. Some of the students do not have the necessary skills needed to use the technology and others do not have the means to purchase the internet bundles and the like to have effective use of the electronic academic resources (Asimah & Dzogbede, 2020). Due to the closure of the universities, students have to go to their various homes and some of them are at the countryside and getting access to the internet connectivity was extremely difficult or almost impossible. The online lectures during the lockdown had addressed how students in both towns and villages in Ghana can learn on their own and use the electronic library resources.

Though many such libraries were leaning towards the virtual presence for years and investing energy and resources into the development of the digital aspect of the library (Turner, 2010: 262; George, 2005: 332) and libraries are amazingly modernist and flexible institutions (Einasto, 2019). The complete closure of physical libraries was an abrupt turn that brought about a number of issues. Seeking ways to supplement at least some services in a purely digital form, libraries had to tackle COVID-19 pandemic and online learning.

Methodology:

This research analysed the effective use of digital library and the satisfaction derived from the use, with associated problems encountered during the usage by Ghanaian university students throughout the COVID-19 period. In addition to the secondary data obtained from books and journals, primary data was also collected and analysed leading to the achievement of the objectives. Survey method under quantitative design was employed. Data collection was made with the use of semi-structured questionnaire. Online survey (Google Form) was used which enabled various categories of university students to respond to the questionnaires. This medium was used to reach a large number of participants that were geographically spread. It would not have been possible for the researchers to meet the respondents face-to-face to collect data because of the restrictive measure put in place by the president of the republic of Ghana to curtail the spread of the corona virus. Again due to the closure of the universities, all students were scattered all over the country because they moved to their various homes. Generally, questionnaire enabled researchers to collect considerably more data in less time as compared to other techniques like interviews and observations. Again responses are usually more candid when questionnaires are anonymous, (Nayak & Narayan, 2019). To ensure that all opinions would be recorded, a free-text response option was added to the end of each of the questions

With regard to the design employed, this study can be classified thus;

- a. it is quantitative because the research objectives were examined by use of quantitative data; that is data were expressed in numerical terms or in number value and there were statistically interpreted (Lancaster, 2005);
- b. it is descriptive since the phenomena existing during the period of the pandemic were described accurately as possible (Atmowardoyo, 2018);
- c. survey research because primary data were collected through communication with the research respondents by means of questionnaires (Zikmund, 2003); and
- d. cross-sectional due to the collection of data done at a single point in time, (Zikmund, 2003).

The population targeted for the study, consisted of all university students in the Country who accessed the digital library irrespective of their level of study.

The survey questionnaires were put in the domain (various universities students' platforms) of all students on the internet so that many students could access them and respond accordingly. No student was forced to respond but it was based on their personal will. The questionnaire was divided into four sections. The first section aimed at collecting data on respondents' personal data relating to their level of study and gender. The second section sort to collect data relating to effective use of digital library, while the third section related to data concerning the problems encountered when accessing digital library and the last section sort to collect data on the satisfaction students derived from the access and use of digital library.

The second and fourth sections contained questions based on five-point Likert Scale. To ensure the validity and reliability of the data collection instrument, four researchers were asked to read and provide feedback on the clarity and comprehensibility of the questions. Their feedback was positive and based on that; questionnaires were administered to the respondents.

The data collected were analysed using descriptive statistics. Frequencies and percentages were determined for describing variability of the results.

Findings:

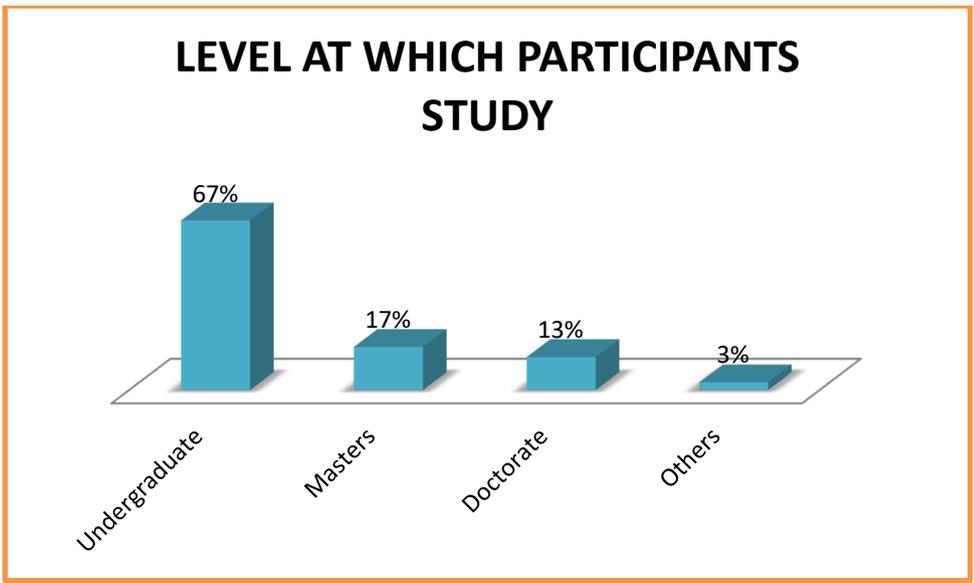


Figure 1: Level of Study indicated by the participants
Source: Field Data, 2020

A total of 500 students representing four main categories of students completed the online questionnaire for this study. From the analysis as shown in Figure 1, it is clear that the highest number, 335 making at least two-thirds (67%) of the respondents were pursuing various undergraduate programmes, 17% were studying at the Masters level in various areas of specialisation, 13% were studying at the Doctorate level while the remaining students 15 representing 3% of the total number of respondents were pursuing other programmes. This diversity of the respondents is suitable to the objectives of the study because all these categories used the digital library during the COVID-19

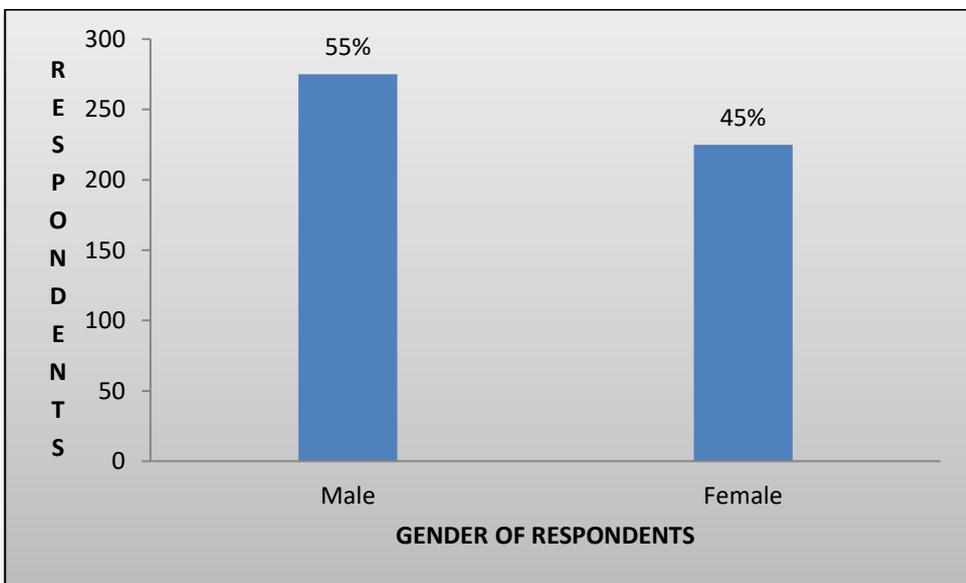


Figure 2: Gender Analysis of Respondents
Source: Field Data 2020

The respondents selected for the study almost balanced relating to gender; 275 respondents representing 55% of the total number, were male students while 225 (45%) were female students. In order to ensure if this balance is good, one tail chi-square is calculated. The calculation showed that $X^2 = 5.0$ and the one in the table showed $X^2 = 3.841$. This implies that the gender balance is good. The gender balance is therefore fair because they would express their views related to the way females and males have different experience about the use of the electronic libraries. In order to ensure...This finding supports the assertions of Simmonds (2001) that technology has forced individuals in all fields and sectors of life to adopt new ways of doing things and for that matter everybody has no option but to accept and use them

irrespective of individual area of specialty. Thus, rapid changes in technology spiral equal revolution in the amount and type of information available

Table 1: Effective use of Digital Library System

Statement	<u>Agreed</u>		<u>Strongly agreed</u>		<u>Neutral</u>		<u>Disagreed</u>		<u>Strongly disagreed</u>	
	<u>Freque</u> <u>ncy</u>	<u>%</u>								
My university provides digital library services	285	57	90	18	5	1	40	8	80	16
I access books in my university's digital library	270	54	110	22	5	1	40	8	75	15
I prefer digital library to the physical library	210	42	250	50	5	1	80	16	40	8
During COVID-19 pandemic, I participated in the online lectures offered by my university	200	40	165	33	15	3	85	17	35	7
I supplement lecture notes with information from books and journals from the digital library	250	50	120	24	15	3	60	14	45	9
I download e-resources that give adequate and relevant information related to my courses	215	43	145	29	15	3	50	10	75	15
I spend 5 or more hours a day on the digital library	175	35	155	31	30	6	75	15	65	13
I access the digital library everyday during the pandemic	180	36	180	36	5	1	65	13	70	14

Source: Field Data, 2020

Students in the universities in Ghana expressed their views based on the experiences they had from the use of digital library system during the period of COVID-19 pandemic. Looking at the analysis as shown in the table above, 285 (57%) respondents out of the total of 500 sampled for the study agreed that the universities provided digital library for their use, 90 of them representing 18% strongly agreed to the statement, but 5 students (1%) remained neutral, whilst 40 respondents (8%) disagreed and 80 representing 16% strongly disagreed that their universities provided digital library system to them during the COVID-19 period. This revelation is supported by Appendix 3; information about digital information on the websites of some universities, which was accessed from their websites. Those who showed neutrality could be the students who were in their first year of study in the universities and were not able to find out if they were provided with digital library system. The managers of the universities in Ghana are mandated to provide digital library systems for students and faculties to use.

Again, majority of respondents, 270 representing 54% of the total number agreed that they accessed books in their universities' digital library systems, 90 (18%) strongly agreed to the statement, whilst only 5 (1%) expressed neutrality to the statement, however, 8% of the participants disagreed and 15% strongly disagreed to the statement. This implied that students were able to access the digital library system and use the resources that were available. Further, 210 (42%) and 150 (30%) agreed and strongly agreed respectively that they preferred the digital library system to the physical one but still 25 (5%) of the respondents were neutral to the statement whilst 75 representing 15% disagreed and 40 (8%) strongly disagreed with the statement that they prefer digital library system to the physical one. It is therefore clear that majority of respondents like the digital library and it is therefore possible that they will continue to use it even if this pandemic is over. Further analysis showed that majority of students, 200 representing 40% and 165 (33%) agreed and strongly agreed respectively that they participated in the online teaching and learning activities offered by their universities, otherwise 15 respondents representing 3% were neutral but 85 (17%) disagreed that they participated in the online teaching and learning activities of their universities and 35 (7%) strongly

disagreed to the statement. This could implied that those who were not able to participate in the online teaching and learning activities organised by their respective universities were not able to access these activities due to poor internet connectivity, inability to have money to buy the internet bundles or otherwise.

In another instance 250 students representing 50% of the total number of participants in the study agreed that they supplemented lecture notes with information obtained from books and journal accessed from the digital library system, and 120 (24%) strongly agreed to the said statement however, 15 (3%) remained neutral to the statement but 70 (14%) and 45 (9%) disagreed and strongly disagreed respectfully to the statement. Since they liked the digital library, they willingly accessed the library and utilised the resources available at the system.

On the other hand, 215 respondents representing 43% agreed that they downloaded resources that gave them adequate and relevant information related to their areas of study and 145 (29%) strongly agreed to the said statement, but 15 (3%) were undecided as far as the statement was concerned, however, 50 students representing 10% of the sampled respondents disagreed and 75 (15%) strongly disagreed to the statement. This implied that the resources ascertained at the digital library system of the universities contained relevant and useful information to the users and this would encourage the students to continue using the library system. As many as 175 (35% of respondents and 155 respondents representing 31% agreed and strongly agreed respectively that they spent 5 hours and more daily on the digital library system, 30 (6%) of the respondents expressed neutrality as far as this statement was concerned, however, 75 representing 15% and 65 (13%) also disagreed and strongly disagreed that they spent 5 and more hours a day on the digital library system. This could mean that they used the system conveniently well and this might be due to gaining easy and fast access to the resources. Coupled with this findings, many respondents, 180 (36%) agreed that they accessed the digital library everyday during the pandemic and also another 180 respondents representing 36% strongly agreed to the said statement but 5 (1%) remained neutral whilst 65 (13%) disagreed and 70 representing 14% of the total respondents strongly disagreed that they accessed the digital library system everyday during the period of the pandemic. Since the participants did access resources at the digital library system everyday during the pandemic it meant that they enjoyed the use of the system and this could be due to the fact that they obtained whatever they wanted with ease at the system.

Table 2: Problems encountered by students:

Problems Encountered by Students	Frequency	Percentage
Poor internet connectivity in my area	345	69
Frequent power outage in my area	195	39
Difficulty in navigating through digital library system	125	25
Lack of ICT skills to digital library	125	25
Lack of ICT equipment	210	42
The digital library system is not always accessible due to system breakdown	35	7
Difficulty in locating the relevant resources that I need	100	20
Digital librarian is not always available to assist me	40	8
Not able to use digital library because of techno-stress	50	10
No internet connectivity in my area	20	4
No challenge	85	17
No electronic library is provided by my university	10	2

Source: Field Data, 2020

In spite of the fact that the participants accessed the digital library system effectively well daily, they however experienced or encountered few problems. They were asked to select from a list of problems provided by the researchers and add more which were not in the list; they came up with as many as twelve different problems. The main one among the, which majority of the respondents asserted was ‘poor internet connectivity at the places where they leaved during the lockdown’; this problem was identified by almost 7 out of every 10 participants (69%). This was due to the fact that during the lockdown period, universities were closed and the students had to go to their various homes and some of them come from villages and towns where internet connectivity was not available. On the other hand, more than 2 out of every 5 participants (42%) stated that they did not have ICT equipment to access the digital library system. These students might have come from very poor families and for that matter their parents could not afford to purchase the ICT equipment for them. The next problem encountered by the participants was frequent power outages which was very common in the country. The electricity provision in the country generally is not stable. Ghanaians intermittently experience outages of power and this might be the case at the various places of students’ habitat during the pandemic. A quarter each of the respondents (125 participants) encountered ‘difficulty in navigating through the digital library system’, and ‘lack of ICT skills to browse the system’. Another problem encountered by the students was difficulty in locating the relevant resources that they needed; this was stated by 1 out of every 5 respondents (100 participants representing 20%). This implied that students did not have any serious training on accessing and using the resources on digital library. Possibly, these students could be the first year students in the various universities. Again, 85 participants equivalent to 17% of the total number said that they had no problem in accessing and using the digital library resources. These people may include possibly computer science students or those who were pursuing computer related programmes.

It is again found out that some students but very few of them, 50 representing 1 out of 10, stated that they were afraid of the technology and as a result they couldn’t use the digital library system. This might be due to some negative views they might have about the technology and also 40 (8%) of the participants stated that the digital librarian was not always available to assist whenever they were in difficulties. This was possible because during the lockdown period, workers were running shift so that social distance could be maintained at the work places and some of the officers were working from their various homes. A minimal number of 3 respondents an equivalent of 0.6% said that it was not always possible for them to access the digital library system because the system often broke down, which might be due to the instability of power system or poor internet connectivity. In the least, only 10 participants an equivalent of 2% expressed that they encountered problem of ‘no electronic library system provided by their universities’.

Table 3: Students’ expression of satisfaction with the digital library system:

Statement	<u>Satisfied</u>		<u>Highly satisfied</u>		<u>Neutral</u>		<u>Dis-satisfied</u>		<u>Highly Dis-satisfied</u>	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Relevance of digital library resources I need for my work	335	67	15	3	125	25	10	2	15	3
Easy accessibility of digital library information for independent use	320	64	15	3	145	29	15	3	5	1
Quality of digital library resources	340	68	15	3	120	24	10	2	15	3
Currency of digital library resources	330	66	25	5	120	24	15	3	10	2
Flexibility of digital library system	260	52	15	3	180	36	20	4	25	5

Quality of services provided by the digital librarian	275	55	15	3	185	37	20	4	5	1
Library staff's quick response to my request	260	52	20	4	190	38	20	4	10	2
Adequate education on the use of digital library	260	52	20	4	195	39	15	3	10	2
Awareness of availability of electronic resources	255	51	20	4	175	35	20	4	30	6

Source: Field Data, 2020

One of the objectives of the study is evaluate satisfied levels of respondents in relation to the use of digital library system during the period of COVID-19 lockdown period. Based on this, the data collected and analysed showed the various views expressed by the participants. As shown in the table 3, two-thirds (67%) of the respondents were satisfied with the relevance of the digital library resources they obtained from the library system for their academic work, 15 (3%) of the total number of the students selected for the study were highly satisfied however, 125 representing a quarter were undecided about the statement but 10 (2%) were not satisfied with the resources obtained from the digital library system, and 15 respondents an equivalent of 3% were highly dissatisfied with the statement.

With the ease of accessibility of the digital library, 320 (64%) were satisfied, 15 respondents representing 3% were highly satisfied whilst 145 (29%) were neutral to the statement but 15 (3%) were dissatisfied and 5 representing 1% of the total participants were highly unsatisfied that the digital library was easily accessible. Further analysis showed that 340 participants representing almost 7 out of 10 respondents said that they were satisfied with the quality of digital library resources, 15 (3%) were highly satisfied with the quality of the resources, however 120 an equivalent 24% were neutral to the statement, whilst 10 (2%) of the respondents were not satisfied with the statement but and 15 (3%) of the participants were highly unsatisfied with the quality of the digital library resources they obtained from the system.

Again, 330 participants representing 66% agreed that they were satisfied with the currency of the digital library resources they accessed from the system and 25 (5%) were highly satisfied while 120 an equivalent of 24% were neutral to the statement but 15 participants representing 3% were not satisfied and 10 representing 2% of the total participants were highly unsatisfied with the currency of the resources they accessed at the digital library system. This implied that the managers of the universities' online libraries system acquired adequate and current books, journals and other resources for students and lecturers to use. Concerning the flexibility of the library system, majority made up of 260 (52%) and 15 (3%) of the participants were satisfied and highly satisfied respectively that the digital library system is very flexible however, 190 representing 38% expressed neutrality to the statement but 20 (4%) were not satisfied and 25 (5%) of the total respondents were highly dissatisfied with the flexibility of the library system. This was supported by (Einasto, 2019), as quoted in the literature; 'and libraries are amazingly modernist and flexible institutions. These few participants who were not satisfied with the quality of resources could be level hundred students who may not know much about the system. Again, 275 representing 55% and 15 (3%) were satisfied and highly satisfied respectively with the quality of the services provided by the digital librarian however, 185 an equivalent of 37% were neutral as far as the quality of services was concerned but 20 (4%) did not see the quality of services to be satisfactory and 5 (1%) were highly dissatisfied with the quality of services provided by the digital librarian. The views thus expressed by the participants in the study showed that the librarians were up and doing to satisfy the users of the digital library system. However, the few who were not satisfied with the services could be those who couldn't have constant connectivity to the system due to frequent power outage.

The next issue was based on the response to users' requests, 260 participants representing 52% said that they were satisfied with the quick response received from the library staff to their requests, 20 (4%) of them were highly satisfied with the immediate response to their requests otherwise, 190 (38%) were neutral to the statement but 20 (4%) of the participants were dissatisfied and the smallest number, 10 representing 2% were highly dissatisfied. With another satisfaction level, 260 an equivalent of 52% and 20 representing 4% were

satisfied and highly satisfied respectively that they received adequate education on the use of digital library system, 195 (39%) remained neutral to the statement but small number, 15 (3%) and 10 representing 2% of the respondents were dissatisfied and highly unsatisfied with the statement. Lastly, 255 (51%) of the participants expressed satisfaction about the awareness creation of availability of electronic library system by their various universities, 20 (4%) of them were highly satisfied with the statement whilst 185 (37%) were neutral but 20 (4%) of them were not satisfied with awareness created about the availability of electronic resources and 30 representing 6% were highly unsatisfied. The few participants who were not satisfied with the awareness creation did not visit the libraries website and other websites where information or notices were made available concerning the lock down and the availability of the digital library resources and services. There is evidence that adequate information and notices were made available to students. This evidence was shown in appendices 1, 2 and 3. These appendices were obtained from the websites of the various universities.

Conclusion:

Generally, the findings were clear that digital library was effectively utilised by students of various universities during the lockdown. It is also shown that the universities in Ghana provided digital library systems for the students and faculties to be used for their academic purposes. This is in line with one of the requirements of tertiary educational institutions in Ghana as proposed by the National Accreditation Board which has now been merged with the National Council for Tertiary Education (NCTE) and now called Ghana Tertiary Education Commission, the supervising body of the universities and colleges. Emphasising the effective use of the digital library systems, students accessed the system five hours and more in a day and also every day. They accessed e-books, other electronic resources and services needed for their academic work.

Comparing the digital library system to the physical one, students preferred the digital one and they were willing and enthused to use it. This is in relation to the fact that the digital library is available and can be accessed twenty-four hours a day and as well as seven days in a week. Again the digital library is used effectively by students because of the situation in which they found themselves; the universities were closed, students were engaged in the online teaching and learning activities, and they could not access the physical resources provided by the physical library on their various campuses. Again the lecture notes provided by the lecturers during the online teaching period were inadequate and for that reason, students had to use the digital library resources for their study. Most of them downloaded books and articles for their study to enable them write their examinations and pass well, and for their personal development.

Even though the electronic library was used effectively by students during the COVID-19 lockdown, they encountered few challenges; most of them suffered from power outages when using the library system. Intermittent power outages are not new in the country. Another challenge that confronted them was poor internet connectivity which is experienced at some part of the country especially in the villages and some of the towns in the country. Also, some of them did not have the ICT equipment to access the internet and for that reason they were not able to utilise the system and coupled with this, they did not have the necessary skills to operate the ICT equipment. Some of the students had difficulty in navigating through the electronic library system. Another problem encountered by few students was difficulty in locating the relevant resources in the electronic library system. This difficulty could affect the effective utilisation of the system adversely because they could be discouraged or frustrated. Again, a very small number of students stated that they were afraid of the technology (techno-stressed) and as a result they couldn't use the digital library. The students who had no skill and also those who were not able to navigate through the electronic library system needed to be assisted but unfortunately, the library staffs were not always available. It was also noted that the systems were not stable for some students to access always. These problems however did not prevent the students from using the digital library. Interestingly, some students clearly stated that they had not a single problem when accessing the system.

The participants in the study expressed various feelings about the usage of the electronic library during the lockdown. The high quality of the resources available at the site encouraged students to continue accessing the digital library. They obtained materials that were current and related to their various areas of study.

The participants were very satisfied with the relevance of the digital library resources. This meant that whatever they wanted was obtained easily and satisfactorily. Again the respondents were satisfied with the ease at which they moved around the system and obtained quality resources at the sites. It is not only the currency of the resources in the system that the students were satisfied with but also, the quality of resources. They expressed maximum satisfaction about the quality of the resources they downloaded from the sites. The participants again expressed satisfaction about the flexibility of the system. The quality of services provided by the library staff to the users was also acceptable. This could be linked to the willingness of the staff and the adequate knowledge they had in the operation and maintenance of the system. Some students were however made aware of the existence the digital library and were educated on the usage of the system.

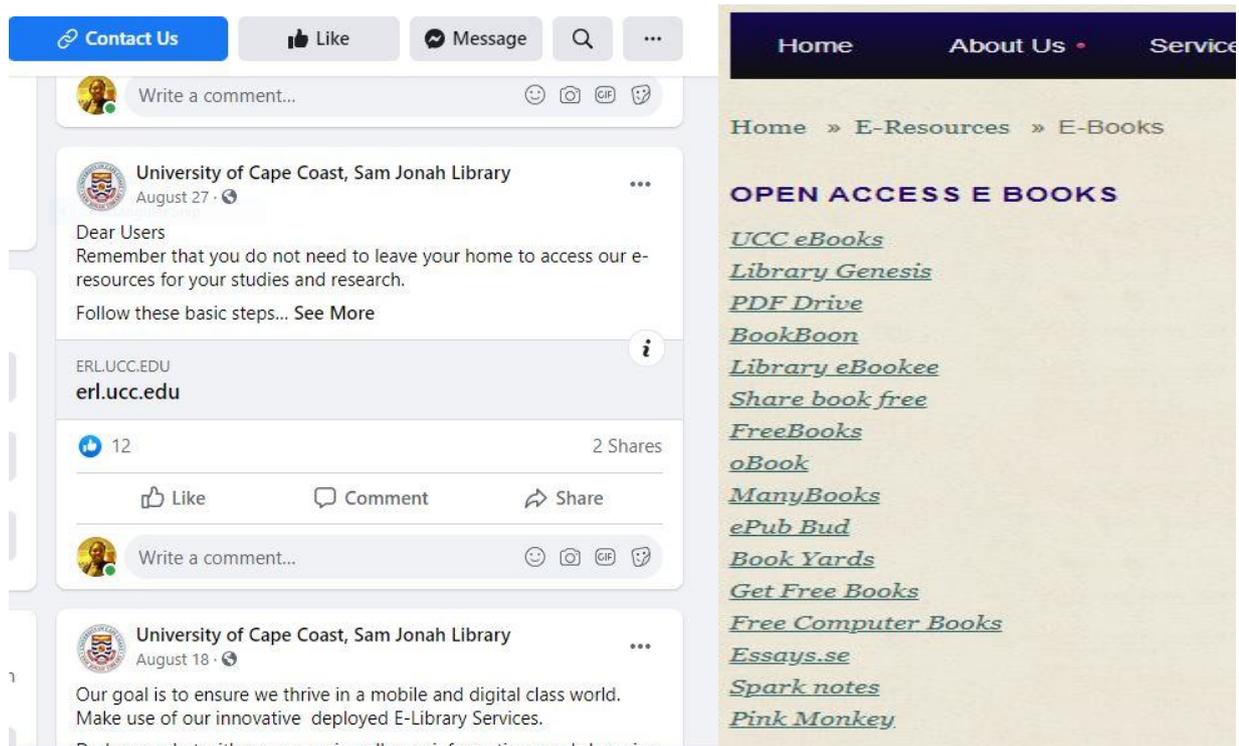
The researchers recommend that management of the universities must increase the awareness creation of the availability of the system and education on its usage. If possible students must be trained to use the electronic library system and should be encouraged to own laptop computers, which they can use for accessing the electronic library systems and for other uses

References:

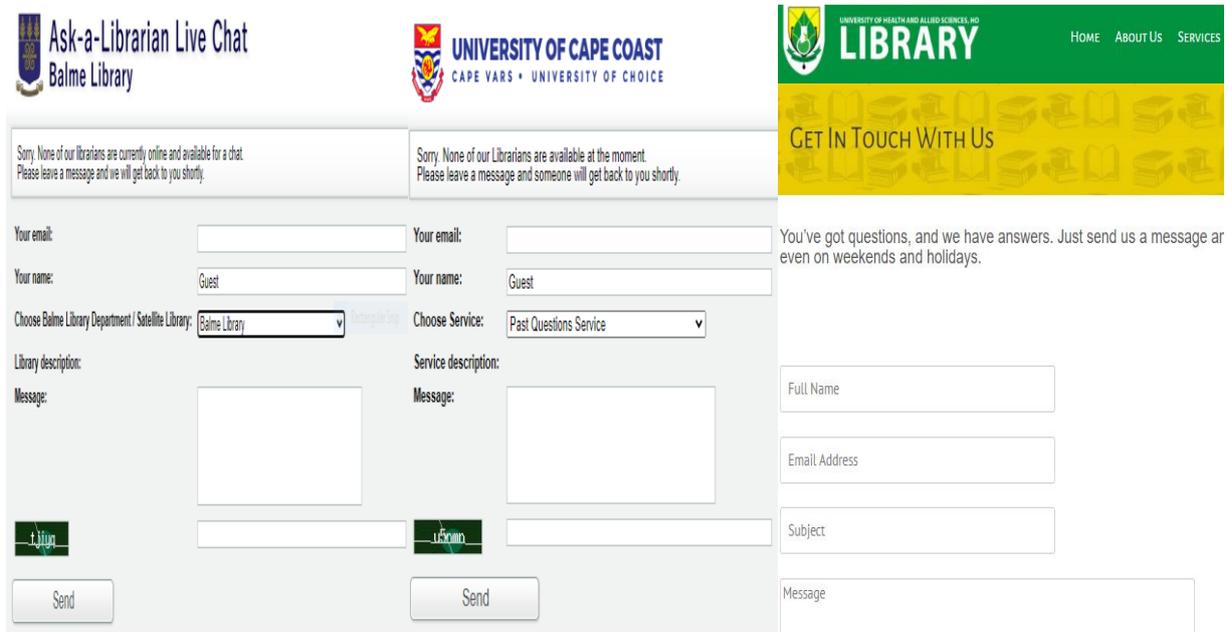
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Appendices:



Appendix 1: UCC Free e-books on their website and instructions for use on their Facebook page

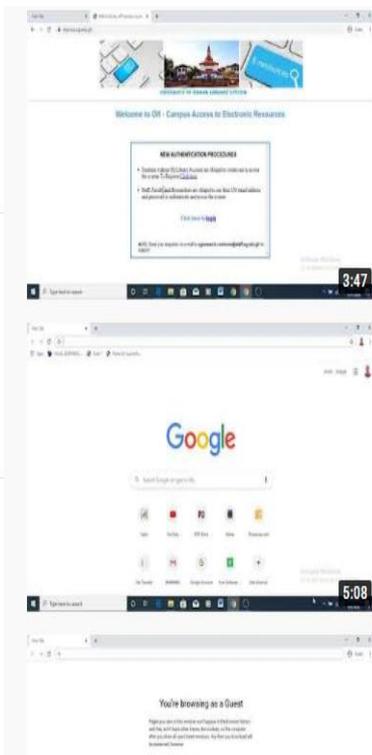


Appendix 2: UG, UCC and UHAS Reference service through Ask-a-Librarian Live Chat on library Website

- Home
- Trending
- Subscriptions
- Library
- History
- Watch later
- Liked videos

SUBSCRIPTIONS

- Music
- Sport
- Gaming
- News



HOW TO REGISTER FOR THE BALME LIBRARY OFF-CAMPUS ACCESS

78 views • 5 months ago

Samuel Kabutey

This video gives a step-by-step guide on how to register for the balme library off-campus access. It also provides the email for you ...

HOW TO ACCESS PAST QUESTIONS FROM BALME LIBRARY ACCURATELY

28 views • 5 months ago

Samuel Kabutey

Wondering how to access Past questions from the Balme Library? This videos offers you a step by step guide on how to access ...

How to get peer reviewed journals from Balme library electronic resources

73 views • 5 months ago

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Appendix 3: Information about how to use digital library services given out by university of Ghana on YouTube