



Lecturers' perception of digital learning platforms for instructional delivery in library and information science education during and after COVID-19 in Cross-River state, Nigeria

A Christopher^{1*}, BE Ogunjimi¹, O Akin-Fakorede¹ and A Tella²

¹Department of Library and Information Science, University of Calabar, Calabar, Nigeria

²Department of Library and Information Science, University of Ilorin, Ilorin, Nigeria

*Corresponding author. E-mail: christopherakamabe@gmail.com

Received: 23-Jun-2023, Manuscript No. GRJE-23-103643; **Editor assigned:** 26-June-2023, PreQC No. GRJE-23-103643 (PQ); **Reviewed:** 10-Jul-2023, QC No GRJE-23-103643; **Revised:** 16-Aug-2023, Manuscript No. GRJE-23-103643 (R); **Published:** 23-Aug-2023, DOI: 10.15651/2408-6894.23.11.147.

ABSTRACT

COVID-19 pandemic has created a new normal in the world. It has changed the pattern of existence in almost all spheres of life, causing fear and uncertainty. This crisis has affected the library, the librarians, lecturers in library school, as well as the way information is delivered to the end users including students of higher institutions of learning. COVID-19 pandemic has triggered an unprecedented need to apply non-pharmaceutical solutions, and the possibility of online education if the economy and educational sector must continue to survive. Thus this study was carried out to identify lecturers' perception of digital learning platforms for instructional delivery in library and information science education during and after COVID-19 in Cross-River state, Nigeria. Five research questions were formulated to guide the study. Fifty-Eight (58) copies of a well-structured and validated questionnaire were distributed to lecturers and academic librarians from the university of Calabar and the university of Cross River state, also in Calabar. Fifty-two (89.7%) of these copies of questionnaire were retrieved and found treatable. The data was descriptively analyzed using tables and percentages. The findings of the study revealed that a vast majority (90.4%) of the lecturers are aware of many of the different online digital platforms that can be used for online instructional delivery in library and information education. The study also revealed that the lecturers did confirm their inability to utilize many (47.1%) of the digital platforms, indicating that they do not have a clear understanding of the skill needed to make use of the online platform for teaching, learning and research. Some of the challenges such as poor facilities, lack of skilled manpower, poor infrastructure, and inadequate funding among others were identified as factors confronting the usage of digital learning platform for teaching, learning and research. Conclusively, the study identified the true disposition of the teaching staff in the library schools towards the use of online library and information science education. The study recommended training of lecturers and academic librarians, sponsorship from the parent institutions and funding from the government to make the lecturers more capable of handling different technologies for teaching, learning and research, even beyond the COVID-19 era.

Keywords: Lecturers, Perception, Digital learning platforms, Instructional delivery, Library and information science education, COVID-19

INTRODUCTION

COVID-19 pandemic has created a new normal in the world. It has changed the pattern of existence in almost all spheres of life, causing fear and uncertainty. This crisis has affected the library, the librarians, lecturers in library

school, as well as the way information is delivered to the end users including students of higher institutions of learning. COVID-19 pandemic has triggered an unprecedented need to apply non-pharmaceutical solutions, and the possibility of digital education or online

education if the economy and educational sector must continue to survive. BBC news video explained that corona virus is an upper respiratory infection that originates from animal and transfers to humans. It was never known before the outbreak began in Wuhan, China in December 2019. This virus has spread rapidly to many countries with common symptoms such as fever, dry cough, tiredness, shortness of breath, pains, aches, loss of smell, loss of taste and difficulty in breathing among others (Adeyeye B, et al., 2022). Nigeria's index case was confirmed by the virology laboratory of the Lagos university teaching hospital, and was reported on the 27th of February, 2020 by Nigeria Centre for Disease Control (NCDC) since then the number has been on the increase (Ali W, 2020). The increase in number necessitated the total locked down in some part of the country and partial lock down in some other part. The imposition of lockdown was the major approach used in the control of COVID-19 which automatically stopped people from partaking in social activities. This according to UNESCO posed a major challenge to the educational sector in ways that have never been witnessed in time past globally (Almahasees Z, et al., 2021).

When the world started thinking about the downward trend in its occurrence, the second wave of COVID-19 erupted. The second wave equally led to the third wave that was referred to as delta variant. Globally as of 16 of September, 2022 there have been 608,328,548 confirmed cases of COVID-19, including 6,501,469 deaths, reported by WHO. WHO dashboard and it is still counting. During the high point of the pandemic, members of the public were advised to take certain protective measures such as; use of face masks, washing of hands regularly, keeping physical distant and most importantly reduce as much as possible physical contact so as not to be infected with this virus (Chang-Richards A, et al., 2013). This crisis necessitated the closure of schools and triggered an unprecedented demand for technological solution for instructional delivery. The adoption of digital learning platforms or online learning platforms became an inevitable option if the economy and educational sectors must still continue working in the era of COVID-19 and even in the face of other pandemics that may occur in the future (Holzberger D, et al., 2013).

Technology according to Robert and Edem; Ogunjimi, Eyong, and Offon has assisted humanity to ensure that the economy is not only functioning, but also make their involvement more convenient. Digital learning platforms in the context of this study can be referred to as electronic learning, online teaching and learning, e-learning or learning made possible by the use of technology such as computer, software, internet, mobile phones, Ipad/tablets among others. Nwachukwu, Ugwu, and Wogu, says that digital learning has a contentious definition due to its application in different fields and the continuous evolvement of the system used in such

learning. They opined that digital learning is meant to enhance learning by exploring new technologies and applying them to learning contexts. Holzberger, Philipp and Kunter regarded digital learning as delivery with digital forms of media such as texts or pictures through the internet in order to enhance learners' learning, to improve teaching effectiveness or promote personal knowledge and skills (Ihim, et al., 2022).

One of the benefits of digital learning and teaching is the elimination of physical contact of human beings in the face of any pandemic and the opportunity for students to exercise some element of control over time, place and pace. This is because learning will no longer be restricted to the traditional four walls of the classroom (Kalu AU, et al., 2022). These developments among others have gone a long way to highlight the various benefit of technology in modern day living to include having up-to-date information, overcoming geographic and other barriers to communication, capacity to handle larger amount of data, creating opportunities for virtual meetings, e-learning, conferences and webinar. Users need not to be physically present or available before getting involved in discussions, debate and other engagements both within and outside the community (Lauren D, 2020).

All these are made possible through the deployment of technology into various human activities. However, it is important to recognize the fact that just like all other human endeavors, there may be challenges in the process of adapting to a new normal within any given human society. These challenges can take many different forms and shapes based on how the human factor (lecturer) perceive the efficacy or otherwise of the new normal (Ming-Hung L, et al., 2017). The big question is the disposition of these lecturers towards the use of what constitute the digital learning platforms (online platforms) that are used in instructional delivery? Do these lecturers have the skill to utilize them for the delivery of information to their students? Are there challenges that may make the utilization of these digital learning platforms for instructional delivery difficult? And how do the lecturers perceive the effectiveness of the online learning platforms (Ogunjimi BE, et al., 2022). It is against this background that the researchers resolved to carry out an investigation into the lecturers' perception of online platforms for instructional delivery in library and information science education during and after COVID-19 in Cross-River state, Nigeria (Oyarinde ON, et al., 2020).

Objective of the Study

The main objective of this study is to examine the perception of Library and Information Science (LIS) lecturers on the adoption of digital learning platform for instructional delivery during and after COVID-19 in Nigeria. The specific objectives are:

- To identify the different types of digital learning platform available for instructional delivery in LIS

education during and after COVID-19 in Cross River state, Nigeria.

- To find out the views of lecturers on the effectiveness of the available digital learning platforms for instructional delivery in LIS education.
- To ascertain if the lecturers have the required skill (capability) to use the digital learning platform for instructional delivery in LIS education during and after COVID-19 in CRS.
- To examine the various prospects of the digital learning platforms for instructional delivery.
- To identify the challenges of digital learning platforms for Instructional delivery in LIS education during and after COVID-19 in Cross River state.

Research Questions

- What are the different types of digital learning platforms available for instructional delivery in the institutions?
- How effective are the digital learning platforms available for instructional delivery in LIS education during and after COVID-19 in the institutions?
- How well equipped (capable) are the lecturers with the required skill for the utilization of digital learning platforms for instructional delivery in LIS education during and after COVID-19 in their institutions?
- What are the prospects of digital learning platforms for instructional delivery in LIS education during and after COVID-19 at the institutions?
- What are the challenges facing the usage of digital learning platform for instructional delivery in LIS education during and after COVID-19 at the institutions?

Statement of Problem

COVID-19 came as a serious threat to global education, causing nations of the world to shut down their economies in order to reduce the spread of the virus and death rate (Robert BE, et al., 2016). The lockdown necessitated the closure of educational institutions, and triggered the need for the adoption of online methods for teaching and learning activities. The development led to the management of a system where students and teachers meet, interact and learn online without physical contact in order to keep the economy still running. Zhang, et al., in Nwachukwu, Ugwu, and Wogu, submitted that China initiated a suspending classes without stopping learning policy to see that learning was not compromised at any time during COVID-19. Also Italy according Ali, was the first to close her universities and move courses online. Some institutions according to Nwachukwu, et al., were able to hold their exams on the canvas platform which is a management system that support online learning. Many of these benefits derivable from the use of digital learning platforms or online educational platforms were documented from educational

institutions in various other countries, the Nigeria situation has not been properly documented for record purposes. The suspension of academic activities through physical contacts or within a typical classroom setting as a result of COVID-19 in Nigeria provided a veritable ground for the utilization of digital platforms for instructional delivery. Other subsequent pandemics like the monkey pox which currently has started spreading rapidly in so many countries can also create a great need for the deployment of the same system to enable learning to continue unabated. These above submissions therefore represent the basis why the researchers resolved to find out among other things, Lecturers' perception of digital learning platforms and the challenges inherent in them for instructional delivery in Library and Information science education as experienced during COVID-19 era and the period thereafter in Cross River state, Nigeria (Thompson S, 2022).

Digital learning has instituted a paradigm shift from the traditional, face to face learning within the four walls of class room to the use of technology for instructional delivery (online teaching and learning). It is seen as learning made possible with the use of technologies such as computer, internet, web, video cameras, mobile devices among others. It is the use of information and communication to enhance teaching and learning. Lauren opined that digital learning is applied in a broad range of technology enhanced educational strategies including network based learning, computer based learning, virtual classrooms, digital cooperation and other strategies that rely on digital tools. Digital or online learning is an internet based courses offered synchronously and or asynchronously. Another scholar sees digital learning as an instructional practice that ultimately helps lecturers and students through various digital means such as the internet, corporate network, computers, satellite broadcasting, audiotapes, videotapes, interactive TV, compact disks, among others.

COVID-19 pandemic according to Nwachukwu, Ugwu, and Wogu in line with its social distancing status opened up wider the need for digital learning which has before now been in neglect and abandoned owing to the deplorable state of infrastructures in educational sectors. The authors in their paper stated that the effects of COVID-19 have shown how degenerated the educational sector in Nigeria has become and provided the opportunity to improve on the system. The deployment of digital learning platforms remains the only panacea to ensure public and private learning activities amidst the Coronavirus pandemic. Equally of the same view was Chang-Richards, et al., who contended that, there is a need for educational institutions to remain resilient and find new ways to continue with teaching-learning activities even during difficult times and circumstances. Therefore, embracing digital learning is not only necessary but also the most effective resort in the face of

any crises. The rapid change has tested the capacity of lecturers and institutions to cope with the crises as many countries did not expect such a complete shift to be online and therefore their staff and students were neither trained nor ready enough for this dramatic change (Tuzlukova, 2004).

Digital learning platform has benefited the educational sector in so many ways and by extension library and information science education. Nevertheless, Library and information science education as postulated by UW Information school cited Kalu, Onwe, and Chikezie is a branch of academic disciplines that deals generally with bridging the gaps that exist between people, information and technology. It is where students are trained to become professional librarians. Some of the benefit of digital learning platforms as stated by scholars such as Almahasees, Mohsen and Amin, Ihim and Ugochukwu, Thomas are the elimination of time and space, interaction, collaboration, innovative teaching, convenience, cost effectiveness and provision of world class education. It is considered a useful platform for instructional delivery. Tuzlukova, also in his study explains that the biggest challenges/obstacles for lecturers in completing their course content were such as time conflict with family and work (teaching) commitments. Teachers also mentioned computer fatigue and physical risks (eye strain after staring at the screen for hours, sore back, chronic "pins and needles" in feet, legs).

However, the digital learning platform varies depending on the software used. The outbreak of COVID-19 and eventual lock down which led to the closure of schools nationwide has brought so many digital learning platforms to manage teaching and learning activities. Examples include Google classroom, Microsoft teams, Zoom, WhatsApp, Telegram, Moodle, Canvas, Blackboard, GoogleMeet, Cisco WebEx, Open edx, NEO, Sakai, Kahoot among others. This implies that one or more of the learning management system will be used by lecturers for teaching and interaction with student of higher institutions. UNESCO also enumerated most famous prominent interactive online tools: DingTalk (interactive online platform designed by Alibaba Group), Hangouts Meet (video calls tool), Teams (chat, interactive meetings, video, and audio calls), Skype (video and audio calls), WeChat Work (video sharing and calls designed for the Chinese), WhatsApp (video and audio calls, chat, and content share), and Zoom (video and audio calls, and collaboration features) (WHO, 2020).

In a study conducted by Almahasees, Mohsen and Amin on faculty and students' perception of online learning during pandemic in Jordan. Two surveys were utilized with one distributed to 50 faculty members and another 280 students which were selected randomly to explore the effectiveness of online education in Jordan. The analysis showed that the common online platforms in Jordan were zoom, Microsoft teams offering online interactive classes,

and WhatsApp in communication with students outside the class. The study found that both faculty and students agreed that online education is useful during the current pandemic. At the same time, its efficacy is less effective than face-to-face learning and teaching. Faculty and students indicated that online learning challenges lies in adapting to online education, especially for deaf and hard of hearing students, lack of interaction and motivation, technical and Internet issues, data privacy, and security. They also agreed on the advantages of online learning. The benefits according to them were mainly self-learning, low costs, convenience, and flexibility. Even though online learning works as a temporary alternative due to COVID-19, it could not substitute face-to-face learning. The study recommends that blended learning would help in providing a rigorous learning environment. This implies that the respondents in this study still prefer the traditional classroom teaching to online teaching even with its usefulness. In another study by Oyarinde, Oluremi Noah and Komolafe, Olaide Gebmisola on the impact of google classroom as an online learning delivery during COVID-19 Pandemic: The case of secondary school in Nigeria. 140 respondents were used for the study. The study was analysed using mean, standard deviation and t-test. The result showed that Google classroom platform as an online learning delivery positively affected students' academic achievement, attitudes and their perception during the pandemic in Nigeria's secondary school. Based on the findings of the study, it was recommended that education stakeholders should effectively prepare students for the use of this platform for their learning activities during the pandemic. The platform is capable of assisting both students and teachers to connect, work together, create assignments, grade students and post learning materials. Likewise, students can also ask questions about the areas they do not understand. Hence, the advantages of the platform can be brought into usage for achieving quality in the teaching and learning process at all levels of education during and after the pandemic (Liu ZY, 2020).

In a study conducted by Zi-Yu, Natalya, and Elena titled on the title online learning platform: 'Reconstructing modern higher education in Russian and Chinese universities', the authors decided to organize a comparative analysis of various online learning platforms (Moodle, Open Edx and Neo LMS) in accordance with the following criteria (system features, content support, content creation, user management, reporting system) using teachers and students. They found out that of all systems, only Moodle meets all the proposed criteria, which indicated a wider range of functions that its users can resort to. In the other systems, they submitted that teachers and students may encounter some limitations. The authors further explained in their results that in Open Edx platform there is no integration with other services and that NEO platform is not completely free, not open source and no availability of plugin for functionality

extension. This implies that the functionality and design of Moodle are change using plugins that can be downloaded for free from the internet or can be created by oneself. Plugin allow one to customize the system to the needs of a particular student group or teacher, expanding the learning opportunities. While corroborating the above submissions, Adeyeye, Ojih, Bello, Adesina, Yartey, Ben-Enukora, Adeyeye, contended in their study on effectiveness of online learning platform on practical-related courses that Zoom and Moodle are effective in practical related courses and academic achievement of the students. Additionally, these platforms enable the lecturers to have positive communication with their students and that, there is no difficulties using these platforms. Their study concludes that distance learning is a future direction in teaching practical related courses because of the flexible nature of the platforms. Thus, universities in this part of the world should invest more in online education platforms to maintain academic continuity, especially during times of emergency.

Based on the available literature, the effective way of using online platform would go a long way in engaging the lecturers and students in interactive and innovative learning. The different types of digital learning platforms for instructional delivery have been reviewed and their benefits during pandemic and the future occurrences have been clearly enumerated. Some of the literatures reviewed in this study focused attention on student and their attitude towards online learning platform while the present study is focusing attention on lecturers' perception of the digital learning platforms for instructional delivery in LIS education during and after COVID-19 in Cross River state, Nigeria as the gap to be filled.

MATERIALS AND METHODS

Quantitative research approach was used for the study with descriptive survey as the research design. Structured questionnaire was designed and used for data

Table 1: Percentage distribution of respondents by selected demographic characteristics

Institution	Qualification		Total	Gender	
	Ph.D	MLS		Male	Female
University of Calabar	20 (38.46%)	14 (26.92%)	34 (65.4%)	12 (23.08%)	22 (42.31%)
University of Cross River state	10 (19.23%)	8 (15.38%)	18 (34.6%)	7 (13.46%)	11 (21.15%)
Total	30 (57.69%)	22 (42.31%)	52 (100%)	19 (36.54%)	33 (63.46%)

The demographic characteristics of the respondents in Table 1 showed that thirty (57.69%) of the subjects of the study are Doctoral degree holders, while the remaining twenty-two (42.31%) are masters' degree holders. Thirty-three (63.46%) of the participants are females while the remaining nineteen (36.54%) are male respondents.

collection. Lecturers in library and information science education including academic librarians were used as participants for the study. The entire fifty-eight lecturers and academic librarians working within these two higher institutions of learning where library and information science is offered as a course of study were purposively selected and served as subjects of the study.

Five research questions were formulated to guide the study. The research instrument was specifically designed in such a way to enable the respondents provide unambiguous information on each of the variables put in place to ascertain the actual perception of the digital learning platforms for instructional delivery by the lecturers. Fifty-Eight (58) copies of the well-structured and validated questionnaire were distributed to the lecturers and academic librarians who are in charge of library and information science education in the university of Calabar and university of Cross River state, all within Calabar Metropolis. Fifty-two (89.7%) of these copies of questionnaire were retrieved and found treatable. The data was descriptively analyzed using tables and percentages.

RESULTS AND DISCUSSION

Demographic characteristics of the subjects of the study in terms of their gender and academic qualifications in Table 1 are presented before the results of the study are presented and discussed on the basis of each of the research questions that were formulated to guide the study.

Research Question 1

What are the different types of digital learning platforms available for instructional delivery?

Respondents were asked to indicate their awareness of any of the digital platforms for instructional delivery that they know among the seventeen that were listed.

Furthermore, they were directed to confirm whether or not the platforms as indicated were available in their institutions or not. A vast majority (90.4%) of the respondents are aware of many (ten out of seventeen) of the different digital learning platforms that can be used for online instructional delivery in library and information education. However, only five out of these seventeen platforms can be regarded as being commonly available to the lecturers in these institutions. This development may not be unconnected with the fact that the five (Google Classroom, Zoom, WhatsApp, Telegram, and Skype) are the more commonly available and utilized social media platforms that are being extensively used for seminars, webinars,

academic conferences among others within the region. This revelation has gone a long way to support the views expressed by Almahasees, et al., that staff (lecturers) and students were neither trained nor ready enough to cope with dramatic changes being brought about by the outbreak of the pandemic. Additionally, the level of national development, coupled with poor funding of educational institutions may have denied the institutions the opportunity of making available the relatively new and sophisticated technology for the members of staff. More detailed information on lecturers' awareness of the different online digital platforms that can be used for online instructional delivery in library and information education, are contained in Table 2.

Table 2: Digital learning platforms awareness by respondents (N=52).

S/N	Types of digital learning platforms for Instructional delivery	Responses		
		AW	AV	NAV
1	MOODLE (Modular Object-Oriented Dynamic Learning Environment)	47	3	49
2	Canvas	47	7	45
3	Blackboard	-	-	52
4	Google Classroom*	47	43	9
5	Zoom*	47	45	7
6	Microsoft Teams	47	6	46
7	WhatsApp*	47	47	5
8	Telegram*	47	44	8
9	Open Edx	-	-	52
10	NEO	-	-	52
11	Edmodo	-	-	52
12	Cisco WebEx	-	-	52
13	Google Meet	47	3	49
14	Facebook Live	47	16	36
15	Skype*	47	47	5
16	Sakai	-	-	52
17	Kahoot	-	-	52

Note: AW=Awareness, AV=Available, NAV=Not Available

Research Question 2

How effective or efficient are the digital learning platforms available for instructional delivery in LIS education during and after COVID-19 in the institutions?

The respondents were asked to indicate how they perceive each of the digital platforms in terms of whether they are either effective or otherwise. An additional column was provided to enable them state unequivocally on whether they have an idea of what the platform is all about. A very unique characteristics of the responses from the respondents show that majority (ten out of seventeen) were regarded to be effective for instructional delivery. The respondents indicated that they have no idea whether the other ones that are relatively new to them are either effective or not effective. It is important to note that none of the platforms was perceived as not been effective by any of the respondents. These results

have gone a long way to confirm the views of Lauren, as well as Chang-Richards, et al., that embracing digital learning platforms is not only necessary but also the most effective resort in the face of any crises. Equally in agreement with findings are the views expressed by scholars such as that the benefits of digital learning platforms are multifarious spanning from the elimination of time and space, interaction, collaboration, innovative teaching, convenience, and most importantly their cost effectiveness and provision of world class education. For more comprehensive information on how the lecturers perceived the effectiveness of the various digital platforms for instructional delivery (Table 3).

Table 3: Lecturers' perception about the effectiveness of digital learning platforms for instructional delivery in at the institution (N-52).

S/N	Types of digital learning platforms for instructional delivery	Lecturers' perception		
		Effective	Not effective	No idea
1	MOODLE (Modular Object Oriented Dynamic Learning Environment)	47	-	5
2	Canvas	47	-	5
3	Blackboard	-	-	52
4	Google classroom*	47	-	5
5	Zoom*	47	-	5
6	Microsoft teams	47	-	5
7	WhatsApp*	47	-	5
8	Telegram*	47	-	5
9	Open Edx	-	-	52
10	NEO	-	-	52
11	Edmodo	-	-	52
12	Cisco WebEx	-	-	52
13	Google meet	47	-	52
14	Facebook live	47	-	52
15	Skype*	47	-	52
16	Sakai	-	-	52
17	Kahoot	-	-	52

Research Question 3

How well equipped are the lecturers with the required skills for the utilization of digital learning platforms for instructional delivery in LIS education during and after COVID-19 in their institutions?

The research question was designed to establish the capability of the lecturers on possession of requisite skills for the utilization of the various digital platforms for instructional delivery. The results revealed that a large number of the lecturers are not certain whether they have the skills or capability to utilize platforms such as; Canvas, Blackboard, Open Edx, and NEO. All of them (52) were categorical in expressing their inability to utilize both Sakai and Kahoot, Cisco WebEx, as well as Edmodo platforms. Platforms such as Google classroom, Zoom, Microsoft teams, WhatsApp, Telegram, Google meet, Facebook live, and Skype are well within the lecturers' capability to utilize. This implies that 8 (47.06%) of the listed platforms cannot be utilized by any of the lecturers. These revelations have gone a long way to further confirm the opinions of Almahasees, et al., that

staff (lecturers) and students were neither trained nor ready enough to cope with dramatic changes being brought about by the outbreak of the pandemic. On the other hand, the ability of the lecturers to utilize some of the platforms confirm the believe as expressed by Adeyeye, et al., that these platforms enable the lecturers to have positive communication with their students and that, they do not have difficulties in making use of the platforms. However, the fact that they confirmed their inability to utilize the major ones among the platforms described by Tuzlukova, in his study explains that the biggest challenges/obstacles for lecturers is in completing their course content within a given period of time as a demonstration of conflict between family and work (teaching) commitments. More comprehensive information on lecturers' capability to utilize the listed digital learning platforms for instructional delivery are contained in Table 4.

Table 4: Lecturers' capability to utilize available digital learning platforms for instructional delivery in at the institution (N-52).

S/N	Types of digital learning platforms for instructional delivery	Lecturers' capability to utilize the platforms		
		Well able	Not able	Not certain
1	MOODLE (Modular Object Oriented Dynamic Learning Environment)	27	11	14
2	Canvas	7	23	22
3	Blackboard	-	-	52
4	Google classroom*	37	-	15
5	Zoom*	49	-	3
6	Microsoft teams	46	-	6
7	WhatsApp*	52	-	-
8	Telegram*	50	-	1
9	Open Edx	-	-	52
10	NEO	-	28	24
11	Edmodo	-	41	11
12	Cisco WebEx	-	42	10
13	Google meet	47	-	5
14	Facebook live	37	-	15

15	Skype*	48	-	4
16	Sakai	-	52	-
17	Kahoot	-	52	-

Research Question 4

What are the prospects of digital learning platforms for instructional delivery in LIS education during and after COVID-19 at the institutions?

An overwhelming majority (98.08%) of the respondents confirmed that there are so many prospects associated with the utilization of digital learning platforms for instructional delivery. Prospects such as; quick access to current contents; contents sharing; reduction in duplication of efforts; easy uploading of lectures; accessibility and flexibility; collaboration in teaching, learning, and research, among others attracted one hundred percent (100%) approval from the respondents. The results of this finding has gone a long way to corroborate the position taken by Ming-Hung, Huang-

Cheng, and Kuang-Sheng on the believe that digital learning platforms serve as an instructional practice that ultimately helps lecturers and students through various digital means such as the internet, corporate network, computers, satellite broadcasting, audiotapes, videotapes, interactive TV, compact disks, among others. More comprehensive details in respect of the respondents' agreement with the various prospects associated with the utilization of digital learning platforms for instructional delivery in information science education during and after the COVID-19 Pandemic are contained in Table 5.

Table 5: Prospects of digital learning platforms for instructional delivery identified by the lecturers (N-52).

S/N	Prospects associated with utilization of digital learning platforms include	Lecturers' views		
		Agree	Disagree	Undecided
1	Contents sharing.	49	-	3
2	Satisfaction with the student-lecturer interaction.	50	-	2
3	Enables self-paced learning.	51	-	1
4	Learning can take place anytime, anywhere internet connectivity is available.	52	-	-
5	Learning materials can be downloaded at anytime.	50	-	2
6	Quick access to current contents is assured.	52	-	-
7	Digital learning platform support synchronous and asynchronous instructional delivery.	50	-	2

8	It promote collaborative work in teaching, learning and research.	52	-	-
9	Collaboration is made easy by digital learning platform.	52	-	-
10	Serves as reliable storage facilities.	51	-	1
11	Lectures can be uploaded to Youtube digital platform for student.	52	-	-
12	Lecture notes are easily updated.	52	-	-
13	Reduction in duplication of efforts.	52	-	-
14	Ensures accessibility and flexibility.	52	-	-

Research Question 5

What are the challenges facing the usage of digital learning platform for instructional delivery in LIS education during and after COVID-19 at the institutions?

The respondents were asked to indicate if in their opinion, they agree with any of the listed challenges made available in the research instrument. The results in Table 6 revealed that all the respondents (100%) confirmed that; unstable power (electricity) supply; unreliable internet Network; high cost of ICT tools; lack of access to modern training in software management; problems relating to data privacy and security; and difficulties associated with software's accessibility, are

major challenges facing the deployment of digital learning platform for instructional delivery in information science education during and after COVID-19 at the institutions. The results of this finding is in line with the study conducted by Almahasees, et al., who found that online learning challenges lies in adapting to online education, technical and Internet issues, data privacy, and security. More information on the challenges facing the usage of digital learning platform for instructional delivery is contained in Table 6.

Table 6: Lecturers' views of the challenges facing the usage of digital learning platform for instructional delivery (N-52).

S/N	Challenges facing digital learning platforms	Lecturers' views	
		Agree	Disagree
1	Poor Internet accessibility.	45	7
2	Unstable power (electricity) supply.	52	-
3	Unreliable network.	52	-
4	High cost of staff training on the use of digital tools and software.	48	4
5	High cost of ICT tools.	52	-

6	Inequality of access to available technological tools and equipment.	48	4
7	Lack of funds to purchase modern ICT facilities and equipment.	46	6
8	Lack of access to modern training in software management.	52	-
9	Problems relating to data privacy and security.	52	-
10	Difficulties associated with software's accessibility.	52	-
11	Lack of policy on appropriate digital learning platforms to deploy in schools.	49	3
12	Lack of good policy implementation.	43	9
13	Over flooding of markets unreliable digital learning platform by marketers.	50	2
14	High cost of data.	39	13

CONCLUSION

In conclusion, the study evaluated the true perception of lecturers as well as academic librarians' perception of digital learning platforms for instructional delivery in library and information science education. Many of the lecturers are aware of a large number of the different online digital platforms that can be used for online instructional delivery in library and information education, but are familiar and capable of utilizing only a relative few of them for teaching, learning and research. There are so many prospects associated with the utilization of digital learning platforms for instructional delivery, but the nature of challenges facing their utilization are so intimidating and may militate against their utilization unless concerted efforts are made to address the challenges.

RECOMMENDATIONS

Based on the conclusions drawn from the study, the following recommendations are made:

- Efforts should be made by the relevant institutions to assist in the training of lecturers and academic librarians in relevant skills that would enable them effectively utilize the various digital learning platforms for instructional delivery.
- Sponsorship should be made available by the parent institutions to enable the lecturers attend seminars, workshops, and conferences both within and outside

the country. This will enable them gain exposure to more of the relatively more recent and modern digital learning platforms for instructional delivery.

- Additional and sufficient funding from the government should be made available to enable the institutions improve on relevant provision for technological tools, devices, softwares, and facilities.
- Conducive environment (availability of internet, stable electricity supply among others) should be made available by the institutions to enable the lecturers become more capable of handling different technologies for teaching, learning and research, even beyond the COVID-19 era.

REFERENCES

- Adeyeye B, Ojih, Bello SE, Adesina E, Yartey D, Ben-Enukora C, Adeyeye Q (2022). Online learning platforms and covenant university students' academic performance in practical related courses during COVID-19 pandemic. *Sustainability*. 14:878.
- Ali W (2020). Online and remote learning in higher education institutes: A necessity in light of COVID-19 pandemic. *High Educ Stud*. 10(3):16-25.

- Almahasees Z, Mohsen K, Amin MO (2021). Faculty's and students' perceptions of online learning during COVID-19. *Front Educ.* 6:638470.
- Chang-Richards A, Vargo J, Seville E (2013). Organisational resilience to natural disasters: New Zealand's experience (English translation). *China Policy Rev.* 10:117-119.
- Holzberger D, Philipp A, Kunter M (2013) How teachers' self-efficacy is related to instructional quality: A longitudinal analysis. *J Educ Psychol.* 105(3):774-786.
- Ugochukwu I (2022). Online learning and impacts on library services and operations. *Current trends in librarianship: African Perspective.* Owerri Kranos Media Publishers. Imo, Nigeria. 231-248.
- Kalu AU, Onwe OU, Chikezie AN (2022). Education for library and information science in the era of digital technologies. *Libraries in the era of digital technologies: Essays in honour of professor Amanze O. Unagha.* Lagos. Zeb Communication. 65-81.
- Lauren D (2020). *Digital Learning: What to Know in 2020.* Schoology Exchange.
- Ming-Hung L, Huang-Cheng C, Kuang-Sheng L (2017). A study of the effects of digital learning on learning motivation and learning outcome. *EURASIA J Math Sci Tech Ed.* 13(7):3553-3564.
- Ogunjimi BE, Eyong IU, Offon EU (2022). Information literacy skills and the utilization of information resources by public health workers in federal neuro-psychiatric hospital Calabar. *Adv Soc Sci Res J.* 9(3):84-100.
- Oyarinde ON, Komolafe OG (2020). Impact of google classroom as an online learning delivery during COVID-19 pandemic: The case of secondary school in Nigeria. *J Educ Soc Behav Sci.* 33(9):53-61.
- Robert BE, Edem NB (2016). Impact of ICT on cataloguing and classification of library materials in three university libraries in Akwa-Ibom state, Nigeria. *Comput Inf Syst J.* 1.
- Thompson S (2022). Advantages and disadvantages of online classes for higher education. *J Theor Appl Sci.* 12(92): 61-63.
- Tuzlukova (2004). On some cultural and social aspects of educational discourse in e-medium. In: *Language and Communication, Rostov-on-Don UNESCO (2020).* Distance Learning Tools.
- WHO (2020). WHO Director-General's Opening Remarks at the Media Briefing on COVID-19. World Health Organisation.
- Liu ZY, Lomovtseva N, Korobeynikova E (2020). Online learning platforms: Reconstructing modern higher education. *Int J Emerg Technol Learn.* 15(13):4-21.