

# Non-Formal Education in the Era of Society 5.0: Bridging the Digital Divide for Instructional Delivery in Nigerian Universities

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**Abstract:** The technological environment ushered in the need for non-formal education as a means of acquiring digital literacy skills that will help academics to navigate technological path and bridge the digital divide in institutions of learning. This study examined the digital literacy and skills of education lecturers in universities with the aim of bridging the digital gaps necessary for effective higher education delivery. Three research questions and two hypotheses were formulated to guide the study. Descriptive survey research design was adopted and the population of the study comprised all the academic staff in faculties of education in public universities in Lagos State, Nigeria. The questionnaire titled Digital Literacy Skills and Higher Education Delivery Questionnaire (DLHEDQ) validated and with reliability coefficient of 0.81 was used to collect data. Analysis was done using descriptive statistic of mean scores and standard deviation to answer the questions while the Pearson's Product Moment Correlation and z-test was used to test the hypotheses. The findings of the study showed that there is a significant relationship between education lecturers' digital literacy skills and instructional delivery in universities, and a significant difference exist among education lecturers in terms of digital literacy skills acquired for instructional delivery. Based on the findings, it was recommended that both state and deferral government should establish centres that will promote non-formal education and where lecturers can acquire more digital skills that will enhance instructional delivery.

**Keywords:** Non-formal Education, Digital Literacy, Digital Skills, Instructional Delivery

## 1. INTRODUCTION

Non formal education is an integral part of learning that supports innovativeness and resourcefulness of academics in a 5.0 Society (information, communication and technology driven era). The relevance and application of its content in the academic world tend to necessitate the search for learning, acquisition of professional knowledge and skills. The future of education is therefore, not disconnected from series of learning and training acquired in an unstructured but profitable platform. In this study, digital literacy skills acquired by education lecturers are regarded as the scope of their non-formal education. According to Bendriyanti, Dewi and Julita (2019) literacy is defined as a set of life-long activities that increases the competences and productivity of an individual in a specified area while digital literacy refer to "a set of skills needed to access the internet; find, manage, and edit digital information and communication network (Glister as cited in Shwetha & Mallaiah, 2017, p. 29). This implies that a digitally literate lecturer is one that can conveniently search, gather and apply relevant information, among other related duties, thereby achieving set goals and objectives for each teaching and learning process and the entire institution.

Academics are among the key drivers of national development and are responsible for training individuals that

will contribute to the growth and development of the economy. Transformation of the society by the education sector, especially through instructional delivery often requires usage of internet, and other means of sourcing for relevant information and knowledge in their area of specialization (Shwetha & Mallaiah, 2017). Apparently, a fundamental tool for the delivery of their services in the area of teaching and research is their digital literacy skills (Oshin & Badmus, 2018). Digital literacy also refer to the ability of individuals to effectively use and apply all computer based gadgets to their day to day activities, thereby enhancing their productivity both socially and economically (Ogundele & Gyang, 2015). Some digital skills are expedient and cannot be over emphasized in regards to service delivery in higher institutions. Examples of such skills are operating the computer system, solving the web for needed information to build content for course materials, publication of research papers; processing students information and results using Microsoft Excel, use of multimedia and Microsoft office (Word and Power-point) for teaching and learning processes.

Digital literacy skills are indispensable tools that have become a requirement for education lecturer who want to compete favourably in the global market. Martin and Singh as cited in Bendriyanti, Dewi and Julita (2019), opined that digital literacy skills enables personnel to communicate with

each other, work more commendably and improve their level of productivity. On the other hand, it helps to prepare students by equipping them with technological skills necessary for the labour market.

In the Era of Society 5.0, the delivery of higher education by lecturers could be further enhanced by application of various online teaching-learning options but the procedure involved might be frustrating for lecturers who are not in compliance with needed digital devices. According to Barr and Miller (2013), the preparation of lecturers in the delivery of online lectures for example, may be impacted by the nature of digital devices at the disposal of their students, leaving them with the option of getting the needed upgrade, sometimes through non-formal education on the desired skills either through self-training or learning from others.

Instructional delivery is a process of applying methodological strategies to deliver academic content to learners. It enables the students interact with the teacher in order to acquire knowledge and skills. It involves a tripartite engagement of the teacher, the learner and the content. Instructional delivery of course content may not be effectively achieved without the application of needed digital skills by the lecturers. Thus, regular though unstructured training and continual updates of lecturers on computer related devices, internet devices, teaching methodologies, research techniques, conferences, and seminar presentation may be required for an enhanced instructional delivery (Etejere & Ogundele as cited in Ogundele & Gyang, 2015).

According to Nwokedi, Nwafor and Wey (2018), knowledge of digital devices (such as computers, laptops, smart-phones, internet connection) and usage of acquired knowledge in that regard by education lecturers might increase their productivity in the teaching-learning process and research development. Considering the impact of the new normal era, lecturers are compelled to hold online lectures, conferences and seminars which may be impossible without digital literacy skills. The availability of digital tools and their usage are two different sides of the same coin. Both constitute the elements of digital literacy of lecturers and tend to reflect on their service delivery. Adeyanju, Thomas and Ofoma (2018) opined that the competence and effectiveness of academic staff in Nigerian Universities may not be disconnected from the level of their digital literacy skills which tend to equip them with needed knowledge on how best the digital divide between the lecturers and their students could be bridged in a teaching and learning process.

The expected services of education lecturers revolves round the following: preparation of lesson content, delivery of content, students' project supervision, preparation of student' result/broadsheet, organization of online seminars and workshops where physical meetings are possible, publication of research findings, building of their knowledge base among others. The achievement of the earlier listed activities maybe enhanced or impeded by application or non-application of digital literacy skills of the lecturers.

This often makes the difference between education lecturers who are out to achieve the targeted goals of the

faculty and those who are redundant, and unproductive to the system (Bendriyanti, Dewi & Julita, 2019; Shwetha & Mallaiah, 2017). Education lecturers might need to brace up with increasing pace of technological advancement by seeking non-formal education in their areas of need for one (Anim & Mensah, 2015)

Digital literacy skills of lecturers are fundamental to their instructional delivery in an academic environment. However, it seems some lecturers are not exposed to the realities imposed on our society by new technologies and the COVID 19 pandemic, which led to high demand for digitally skilled professionals (education lecturers inclusive). Academics without the required digital literacy skills may be unable to successfully function as a researcher, teacher and community builder. Lack of non-formal education, particularly as regards digital literacy skills by education lecturers may create a gap in the teaching and learning process, thereby resulting in the production of substandard graduates as teachers both at the primary and the secondary school level. This study aims to fill this gap through the identification of necessary skills and strategies that can be utilised in higher institutions.

#### Research Objectives

The aim of this study is to examine the relationship between digital literacy skills acquired by education lecturer through non-formal education relate to instructional delivery in universities. Specifically, the study sought to:

1. ascertain the digital literacy skills acquired by education lecturers through non-formal education,
2. examine the strategies needed to bridge the digital gaps among education lecturers,
3. determine the relationship between education lecturers' digital literacy skills and instructional delivery in universities.

#### Research Questions

The following research questions guided the study:

1. What are the digital literacy skills acquired by education lecturers through non-formal education?
2. What are the strategies needed to bridge the digital gaps among education lecturers?

#### Research Hypotheses

1. There is no significant relationship between education lecturers' digital literacy skills and instructional delivery in universities.
2. There is no significant difference between digital literacy skills acquired by education lecturers in State and Federal University in Lagos State.

## 2. METHOD

The design used for this study was descriptive survey research design and the population of the study comprised 223 lecturers in Faculties of Education of University of Lagos and Lagos State University. The entire population formed the sample for the study, this include 159 lecturers from faculty of education, University of Lagos and 64 Lecturers from

Lagos State University. The research instrument used was designed questionnaire by the researchers with the titled Digital Literacy Skills and Higher Education Delivery Questionnaire (DLHEDQ). The instrument was validated and its reliability was established with test score that yielded a reliability coefficient of 0.81. The research questions were answered with descriptive statistics of means and standard deviations. The hypotheses were tested using Pearson's Product Moment Correlation and T-test statistical tools at 0.05 level of significance. The strongly agree and agree were fused

together as agreed, while disagreed and strongly disagree were fused together as disagree for the purpose of analysis. The mean criterion score was set at 2.50 and above for agree and below 2.50 for disagree.

### 3. RESULTS

Research Question One: What are the digital literacy skills acquired by education lecturers through non-formal education?

**Table 1 Digital Literacy Skills acquired by Education Lecturers through Non-formal Education**

S/N	Items	Mean	SD	Rank	Decision
1.	Preparation of online lecture notes	3.65	0.53	10 <sup>th</sup>	Agreed
2.	Virtual Classroom for online lectures	3.66	0.66	9 <sup>th</sup>	Agreed
3.	Usage of multimedia projectors for academic purpose	3.78	0.45	5 <sup>th</sup>	Agreed
4.	Working with Microsoft Excel sheet for academic purpose	3.64	0.54	11 <sup>th</sup>	Agreed
5.	General use of laptops or computers for academic activities	3.87	0.35	1 <sup>st</sup>	Agreed
6.	Working with Microsoft Power point for seminar presentation	3.77	0.45	6 <sup>th</sup>	Agreed
7.	Digital supervision of student's project	3.42	0.60	14 <sup>th</sup>	Agreed
8.	Using Microsoft Excel for preparation of student' result/broadsheet	3.86	0.40	3 <sup>rd</sup>	Agreed
9.	Use of internet for sending or receiving emails	3.87	0.39	1 <sup>st</sup>	Agreed
10.	Virtual staff meetings	3.64	0.65	11 <sup>th</sup>	Agreed
11.	Virtual Conferences	3.67	0.70	8 <sup>th</sup>	Agreed
12.	Use of Microsoft word for document preparation	3.74	0.59	7 <sup>th</sup>	Agreed
13.	Use of magnetic board for classroom interaction	2.59	1.05	15 <sup>th</sup>	Agreed
14.	Ability to use hardware facilities (Scanner, photocopier, and printer)	3.54	0.57	13 <sup>th</sup>	Agreed
15.	Use of internet for sourcing literature and other important information	3.84	0.46	4 <sup>th</sup>	Agreed
	<b>Aggregate Mean</b>	<b>3.64</b>	<b>0.56</b>		Agreed

The result on table 1 shows that all the listed digital skills had a mean score of 2.50 above. This indicates that all the digital skills are acquired by education lecturers through non-formal education in both State and Federal Universities in Lagos State, Nigeria. However the ranking of items 5, 9 and 8 as 1st, 2nd and 3rd respectively shows that education lecturers acquire more skills in the use of laptops and computers for academic activities, use of

internet to send and receive mails as well as using Microsoft excel for preparation of results.

**Table 2 Strategies needed to Bridge the Digital gaps among Education Lecturers**

S/N	Items	Mea	SD	Decisio
16.	Organization of semester based non-formal training for lecturers on digital skills	3.68	0.61	Agreed
17.	Provision of funds for digital literacy skills facilitators	3.77	0.57	Agreed
18.	Provision of functional digital devices	3.76	0.58	Agreed
19.	Collaboration among academic staff on teaching and research	3.85	0.38	Agreed
20.	Proper maintenance of available digital devices	3.85	0.47	Agreed
21.	Provision of software for academic purpose	3.75	0.61	Agreed
22.	Provision of stable power supply	3.83	0.55	Agreed
23.	Encouraging team work and knowledge sharing on digital literacy among lecturers	3.71	0.70	Agreed
<b>Aggregate Mean</b>		<b>3.78</b>	<b>0.56</b>	Agreed

Table 2 shows that all the items 16-23 had their weighted mean scores above the criterion mean of 2.50. This shows that education lecturers agreed that organisation of non-formal training on digital skills, provision of funds, functional digital devices; software and stable power supply in addition to maintenance of available digital devices, collaboration and

team work among lecturers were strategies of bridging the digital divide in universities.

**Testing of Hypotheses**

Hypothesis One: There is no significant relationship between education lecturers' digital literacy skills and instructional delivery in universities

**Table 3 Relationship between Education Lecturers' Digital Literacy Skills and Instructional Delivery in Universities.**

Variable	N	Mean	SD	Df	r-cal.	p-value	Decision
Education Lecturers' Digital Literacy Skills		64.8873	9.24185				
Instructional Delivery in Universities	213	54.5587	6.17379	211	0.826	.000	Reject Ho

Table 3 shows that there is a significant relationship between education lecturers' digital literacy skills and instructional delivery in universities in Lagos State with r-value of 0.826 and P-value of 0.000 ( $r = 0.826$ ;  $P < 0.05$ ). Based on the result, the null hypothesis which states there is no significant

relationship between education lecturers' digital literacy skills and instructional delivery in universities was rejected.

**Hypothesis Two**

There is no significant difference between digital literacy skills acquired by education lecturers in State and Federal University in Lagos State

**Table 4 Z-test showing the difference between digital literacy skills acquired by education lecturers in State and Federal University in Lagos State.**

Variable	N	Mean	SD	df	z-cal.	p-value	Decision
Digital Literacy Skills (Unilag)	153	3.63	0.24				
Digital Literacy Skills (LASU)	60	3.68	0.52	211	3.94	.000	Reject Ho

$P < 0.05$

Table 4 shows that there is a significant difference between digital literacy skills acquired by education lecturers in State and Federal University in Lagos State with z-value of 3.94 and P-value of 0.00 ( $z = 3.94$ ;  $P < 0.05$ ). Based on the result, the

null hypothesis which states there is no significant difference between digital literacy skills acquired by education lecturers in State and Federal University in Lagos State was rejected.

#### 4. DISCUSSION

The findings of the study revealed that majority of the participants agreed that acquisition of digital skills is necessary for education lecturers to function effectively and also improve learning experiences of students. The result identified a number of skills that are acquired by education lecturers through non formal education. These include preparation of online lectures; engagement in virtual classroom and conferences; use of multimedia projectors and computers for academic activities; application of Microsoft office in document preparation, student broadsheets and seminar presentations; and use of internet to send and received mails are acquired by education lecturers through non-formal education in both State and Federal Universities in Lagos State, Nigeria. The ranking of digital skills as 1st, 2nd and 3rd respectively shows that education lecturers acquire more skills in the use of laptops and computers for academic activities, use of internet to send and receive mails as well as using Microsoft excel for preparation of results. However, all these digital skills are capable of influencing instructional delivery in higher institutions. The result is consistent with the findings of Nwokedi, Nwafor, and Wey (2018) on ICT and capacity building skills that education lecturers' ICT skills are related to the teaching learning process.

The findings of the study indicated that education lecturer agreed that there is need for strategies to be put in place to bridge the digital gaps. These strategies include the organisation of non-formal training on digital skills, provision of funds, functional digital devices; software and stable power supply in addition to maintenance of available digital devices, collaboration and team work among lecturers were strategies of bridging the digital divide in universities. Idowu, Esere an Omotosho (2014) identified similar strategies to address the challenges of virtual initiatives. The result also conform to the assertion of Corinne (2018) that challenges of digital technologies are interrelated and it is not possible to address on without the other, hence the need for different strategies which are found to be significant foe effective instructional delivery.

Results obtained from this study showed that there is a significant relationship between education lecturers' digital literacy skills and instructional delivery in universities. The finding of Nwabueze, Iloabuchi and Adieme (2014) that digital skills provide new areas of support for instructional delivery corroborate this result. In addition, this outcome supports Hermant (2018) who found that digital technologies play strenuous role to make teaching delivery more meaningful and recommended that teachers need to acquire the latent digital skills. Edeh (2019) assertion the acquisition of digital skills bring about innovations, creativity and flexibility in teaching and learning process support the finding of this study.

The findings of the study went further to reveal that there is significant difference between digital literacy skills acquired by education lecturers in State and Federal

University in Lagos. This is in line with the findings of Nwokedi, Nwafor and Wey (2018) that there is significant difference between education lecturers in state and federal universities on ICT capacity building skills for instructional delivery. The difference identified among the education lecturers in the state and federal universities is due to the challenges confronting the acquisition and usage of digital skills as well as different strategies put in place to address the challenges in these institutions.

#### 5. CONCLUSION

The utilisation of digital skills in universities has helped immensely in improving instructional delivery especially in the Society 5.0. This study showed that education lecturers there are numerous digital skills that can be acquired by education lecturers which will support their teaching process. Also, the strategies to bridge the digital gaps as indicated in the study should be applied in the universities for effective teaching and learning outcomes. The acquisition of digital skills empowers not only improved instructional delivery; it empowers the education lecturers and gives them the opportunity of better networking and collaboration.

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