

# STRATEGIES FOR IMPROVING TVET LECTURERS' DIGITAL LITERACY FOR REMOTE LEARNING IMPLEMENTATION IN NORTHERN NIGERIAN UNIVERSITIES

Luka Dazar<sup>1</sup>, Prof. Paul Shehu Yaduma<sup>2</sup>, Dr. Samaila Hamza<sup>3</sup> & Dr. Jamilu Mustapha Chedi<sup>4</sup>

<sup>1,2,3,4</sup>*Department of Construction Technology Education, Abubakar Tafawa Balewa University Bauchi, Bauchi State*

*Corresponding Author: dazarluka@gmail.com/+2348036852038*

## ARTICLE INFO

**Article No.:** 0229

**Accepted Date:** 06/03/2026

**Published Date:** 28/03/2026

**Type:** Research

## ABSTRACT

The study aimed to determine the Strategies for Improving Digital Literacy of TVET Lecturers for the Implementation of Remote Learning in Universities in Northern Nigeria. The study was guided by one objective, one research question and one null hypothesis respectively. The research design adopted for the study was a descriptive survey design. The population of this study comprise of all 341 TVET lecturers in public Universities of Northern Nigeria consisting of 168 lecturers of Technology Education and 173 lecturers of Vocational Education in Universities in Northern Nigeria and census approach was adopted for this study. The instrument for data collection in this study was a structured questionnaire developed by the researcher. The validity of the instrument in this study was ascertained by three experts one from the field of Test and Measurement in the Department of Educational Foundation, one from the Department of Vocational Education and one from Department of Construction Technology Education, Abubakar Tafawa Balewa University Bauchi, Bauchi State. The overall reliability coefficient of the entire instrument is .934 which indicates that the instrument is reliable and appropriate for the study. The data was collected with the help of eleven trained research assistants and the data was analyzed using SPSS version 25 and the statistical tool used were descriptive statistics of mean and standard deviation while independent t-test was used to test the null hypotheses at 0.05 level of significance. In line with the analysis of data collected for this study, the findings of the study revealed that found that Regular digital literacy training programs, training in online pedagogy and instructional design for effective remote learning among others are the strategies for improving digital literacy among TVET lecturers for the implementation of remote learning in Universities in Northern Nigeria. Based on the finding, the study recommends that Government at all level should improve the digital literacy of TVET Lecturers for more effectiveness for the implementation of remote learning in Universities in Northern Nigeria.

**Keywords:** TVET Lecturers, Digital Literacy, Remote Learning, Implementation and Universities

## Introduction

In recent years, the significance of technology in education has been increasingly recognized worldwide. The COVID-19 pandemic has accelerated the urgent need for digital literacy in educational settings, highlighting the disparities faced by different countries, particularly developing nations like Nigeria. As education systems transition to more digital platforms, the concept of the "digital literacy" becomes more pronounced, delineating the gap between those who have easy access to digital technologies and those who do not (Kennedy, Ekong & Okorie 2022).

Since the recognition of technology in education, the global nature of education process has undergone a profound transformation, driven primarily by the rapid advancement of technology. This shift has been particularly pronounced in Nigeria, where Technical and Vocational Education and Training (TVET) institutions play a pivotal role in preparing individuals for the demands of the modern workforce. As universities strive to adapt to the digital age and provide quality education in the face of various challenges, the acquisition of digital literacy and remote learning skills has emerged as a critical imperative for TVET lecturers (Syerina, Khalid & Eman, 2023).

Therefore, proliferation of digital tools and online platforms has not only reshaped the way education is delivered but has also ushered in a new era of learning opportunities and challenges (Mlambo & Nleya, 2020). The COVID-19 pandemic, in particular, accelerated the adoption of remote learning, compelling educators and learners alike to utilize this digital frontier. In this context, the integration of digital literacy and remote learning into the pedagogical landscape of Nigerian TVET institutions has become essential for sustaining educational continuity, fostering innovation, and enhancing the employability of graduates (Kennedy, Ekong & Okorie 2022). The utilization of digital tools and online platforms can only be possible when lecturers acquire digital literacy.

Digital literacy is the basic understanding of how to interact with a computer, how to interact with applications on that computer, how to make it do what one wants in real time. Digital literacy is the ability to locate, organize, understand, evaluate, and create information using digital technology. According to Usoro and Calab (2014) digital learning encompasses many different facets, tools and applications to support and empower teachers and students, including online courses, blended or hybrid learning, or digital content and resources. In education, TVET in particular it extends to all aspects of teaching and learning, and the usage extends into citizenship, industrial and e-safety. Digital literacy therefore is an essential competency in today's digital society, which encompasses diverse skills and knowledge needed to evaluate and create information in a digital environment.

Therefore currently, it is inevitable that the usage and reliance on digital technologies will continue to grow unprecedentedly. While reading books and paper resources and manual writing remain fundamentally important, this current period in time may well represent a pivotal point in the march towards digital domination ([www.e-safetysupport.com](http://www.e-safetysupport.com)). Therefore, it is expedient to provide strategies that will improve the already existing digital literacy of TVET lecturers with the aim of implementing remote learning.

Remote learning therefore, also known as distance learning, is defined as 'learning that occurs when the learner and the instructor, or source of information, are separated physically and hence cannot meet in a traditional classroom setting – it includes "online learning" as well as lower-tech remote learning options such as smart phone, tablets, kindle, kobo reader, e-board among others (UNESCO, 2020a). This remote learning is the ideal form of learning in a difficult moment like crisis, pandemic among others.

Assuming the possibility of future recurrence of another pandemic like the COVID-19 or deadlier than it, Daniel (2020) urged that all educational institutions, lecturers and students must continuously find flexible ways to repair the damage already caused by the corona virus

by the use of technology in the classrooms. Against these unprecedented contexts, remote learning can be a better alternative medium to be adopted during the pandemic crisis where lecturers in Nigeria can use affordable, accessible and cost-effective technology in education irrespective of any socioeconomic discrimination to effectively undertake the task of teaching. Daniel, (2020) opined Lecturers can undertake Facebook Live classes, resorting to Google classroom, uploading contents on YouTube, teaching through WhatsApp and meeting apps like Zoom, Cisco WebEx or Google Meet as an emergent response to the pandemic crisis.

TVET institutions are established with the responsibility of providing TVET training and certification of the learners. Universities are well known TVET institutions in Nigeria as through this TVET institution the learners are equipped with the right skills, knowledge, understanding and attitude needed in the world of work by TVET lecturers. TVET lecturers have a distinctive role to play: not only do they need to be experts in their subject with a sound understanding of its pedagogy; they also need to have practical and up-to-date vocational expertise relevant to the workplace (United Nations Educational, Scientific and Cultural Organization- United Nations Education for Vocational Education UNESCO-UNEVOC, 2014). Therefore, TVET is a powerful tool for national development only when TVET lecturers are equipped with skills in manipulating tools and machines, demonstrating concepts, directing students learning and also acquire digital literacy skills to meet the fast-changing technological world of work.

TVET lecturers require digital literacy to design and deliver engaging online content, facilitate virtual classrooms, and assess student learning outcomes. However, many lecturers lack the necessary skills to effectively utilize digital tools, resulting in poor student engagement and learning outcomes (Adedoyin & Soysa, 2020). To address this issue, it is essential to develop strategies for improving digital literacy among TVET lecturers, focusing on pedagogical, technical, and critical skills (Marín & Castañeda, 2023).

### **Statement of the Problem**

Technical and Vocational Education and Training (TVET) institutions stand at the crossroads of adaptation and innovation (Kennedy et al, 2022). As the digital revolution sweeps across the nation, the acquisition and utilization of digital literacy for the implementation of remote learning by TVET lecturers have become paramount. However, amidst this digital transformation, several pressing problems and challenges have emerged, which demand rigorous examination.

The rapid shift to remote learning has required a fundamental change in teaching methodologies. Many TVET lecturers lack the necessary training and skills to effectively design and deliver digital content and assessments. Thus, the success of this rapid shift to remote learning hinges on robust technological infrastructure, the effectiveness of the digital literacy acquired and it's unfortunate that Nigerian universities often faced infrastructure limitations, among others and these challenges hinder the development of effective digital literacy and remote learning among TVET lecturers of which measures must be taken to address these limitations (Cyril, et al, 2023).

Technology Education and Vocational Education Lecturers however fail to keep abreast to this trend in order to remain relevant in teaching and learning especially in Technical Vocational Education and Training (TVET) (Orji, et al 2015).

The global proliferation of extremist ideologies and organised criminal networks have manifested in Northern Nigeria through proscribed groups such as Boko Haram, the Islamic State West Africa Province (ISWAP), lakurawa, armed banditry among others which have crippled educational sector in region thereby forcing school to be closed and teaching and learning put on hold and this necessitate strategies for improving TVET lecturers' digital literacy for implementation of remote learning in tertiary institution in Northern Nigeria.

It is against this background that this study seeks to determine strategies for improving digital literacy of TVET Lecturers for the implementation of remote learning in Universities in Northern Nigeria.

### **Aim and Objectives of the Study**

- i. Determine the strategies for improving digital literacy among TVET lecturers for the implementation of remote learning in Universities in Northern Nigeria.

### **Research Questions**

This study was guided by one research questions:

- i. What are the strategies for improving digital literacy among TVET lecturers for the implementation of remote learning in Universities in Northern Nigeria?

### **Research Hypotheses**

This study was guided by one null hypothesis and was tested at 0.05 level of significance:

**H<sub>01</sub>:** There is no significant difference in the mean response of Technology Education Lecturers and Vocational Education Lecturers on the strategies for improving digital literacy among TVET lecturers for the implementation of remote learning in Universities in Northern, Nigeria.

### **Methodology**

The research design adopted for the study was a descriptive survey design. The study was carried out in Universities in Northern Nigeria. The population of this study comprised of all 341 TVET lecturers in Public Government owned Universities of Northern Nigeria consisting of 168 lecturers of Technology Education and 173 lecturers of Vocational Education in Universities in Northern Nigeria and census approach was adopted for this study. The instrument for data collection in this study was a structured questionnaire developed by the researcher. The validity of the instrument in this study was ascertained by three experts one from the field of Test and Measurement in the Department of Educational Foundation, one from the Department of Vocational Education and one from Department of Construction Technology Education, Abubakar Tafawa Balewa University Bauchi, Bauchi State. The overall reliability coefficient of the instrument was .934 which indicates that the instrument is reliable and appropriate for the study. The data was collected with the help of eleven trained research assistants and the data was analyzed using Statistical Package for Social Sciences (IBM SPSS) version 25. The data obtained was analyzed using Descriptive Statistics of Mean and Standard Deviation. The class limit of the whole number was employed assigned as decision rule for the research question. Independent sample t-test was used for testing the null hypothesis. The decision rule for the hypothesis was based on the *p* value, when the *p* value is greater than 0.05 level of significance, the null hypothesis was accepted and where otherwise was not accepted.

### **Results**

This section presents the data obtained, the results and finding of the study.

### **Research Question**

What are the strategies for improving digital literacy among TVET lecturers for the implementation of remote learning in Universities in Northern Nigeria?

Table 1 shows the Mean and Standard Deviation of the respondents on the strategies for improving digital literacy among TVET lecturers for the implementation of remote learning in Universities in Northern Nigeria. The table showed the mean of Technology Education Lecturers ranges from 3.76 to 4.10, the standard deviation also ranges from .802 to .963 and the mean of Vocational Education Lecturers also ranges from 3.48 to 4.02 while the standard deviation ranges from .656 to 1.043 respectively. The cluster mean of Technology Education Lecturers is 3.87 with the standard deviation of .886 and 3.74 for Vocational Education Lecturers with standard deviation of .812, the grand mean of the respondents ranges from 3.68

to 3.90 and grand standard deviation ranges from .764 to .939 respectively. The cluster grand of the respondents is 3.82 with the standard deviation of .854 which means all strategies are agreed upon for improving digital literacy among TVET lecturers for the implementation of remote learning in Universities in Northern Nigeria.

Table 1: Mean and Standard Deviation of the Respondents on the Strategies for Improving Digital Literacy Among TVET Lecturers for the Implementation of Remote Learning

S/N	Item Statement	$\bar{x}_T$	$SD_T$	$\bar{x}_V$	$SD_V$	$\bar{x}_G$	$SD_G$	Remark
1.	Regular digital literacy training programs in enhancing your ability to implement remote learning.	4.10	.844	3.48	1.043	3.83	.929	Agreed
2.	Training in online pedagogy and instructional design for effective remote learning.	3.98	.830	3.57	.953	3.80	.883	Agreed
3.	Access to online teaching resources and digital tools support your remote teaching activities.	3.98	.891	3.79	.704	3.90	.811	Agreed
4.	There should be availability of technical support staff in resolving digital issues during remote learning sessions.	3.88	.920	3.86	.656	3.87	.807	Agreed
5.	Continuous professional development in digital literacy for the successful implementation of remote learning.	3.87	.923	3.88	.823	3.87	.880	Agreed
6.	Adequate institutional policies to support the integration of digital literacy training for remote learning.	3.87	.809	3.79	.704	3.84	.764	Agreed
7.	There should be adequate collaboration with peers in sharing digital teaching strategies and resources for remote learning.	3.76	.944	3.82	.783	3.79	.875	Agreed
8.	Provision of adequate digital infrastructures for supporting remote learning.	3.76	.897	4.02	.798	3.87	.855	Agreed
9.	Provision of effective feedback mechanisms in identifying and addressing digital literacy gaps among TVET lecturers.	3.85	.924	3.72	.843	3.79	.889	Agreed
10.	Provision of effective incentives certifications and promotions in motivating	3.79	.802	3.72	.716	3.76	.765	Agreed

	TVET lecturers to improve their digital literacy.							
11.	Encouraging the integration of various digital tools and platforms into teaching practices for remote learning.	3.78	.963	3.54	.907	3.68	.939	Agreed
	<b>Cluster Mean</b>	<b>3.87</b>	<b>.886</b>	<b>3.74</b>	<b>.812</b>	<b>3.82</b>	<b>.854</b>	<b>Agreed</b>

Source: Fieldwork, 2025

## Results of Null Hypothesis

### Null Hypothesis

There is no significant difference in the mean response of Technology Education Lecturers and Vocational Education Lecturers on the strategies for improving digital literacy among TVET lecturers for the implementation of remote learning in Universities in Northern, Nigeria.

The result of the independent t-test is presented in Table 2 showed that there is no significant difference in the mean response of Technology Education Lecturers and Vocational Education Lecturers on the strategies for improving digital literacy among TVET lecturers for the implementation of remote learning in Universities in Northern, Nigeria within the degree of freedom (Df) of 213,  $t\text{-value} = 1.807$ ,  $p = .072$  and since the  $p$  value is greater than the confidence level ( $P > 0.05$ ) therefore, the null hypothesis was accepted and this implied that there is no significant difference on the mean response of Technology Education Lecturers and Vocational Education Lecturers on the strategies for improving digital literacy among TVET lecturers for the implementation of remote learning in Universities in Northern, Nigeria.

Table 2: Independent t-test analysis of the mean responses of Technology Education Lecturers and Vocational Education Lecturers on the Strategies for Improving Digital Literacy Among TVET Lecturers for the Implementation of Remote Learning

Respondents	N	$\bar{x}$	S.D	Df	t-val	p-val	Decision
Technology Education Lecturers	123	3.87	.886	213	1.807	.072	Accepted
Vocational Education Lecturers	92	3.74	.812				

## Findings of the Study

This study found that Regular digital literacy training programs, Training in online pedagogy and instructional design for effective remote learning among others are agreed upon as the strategies for improving digital literacy among TVET lecturers for the implementation of remote learning in Universities in Northern Nigeria and the null hypothesis was accepted which implied that there is no significant difference on the mean response of Technology Education Lecturers and Vocational Education Lecturers on the strategies for improving digital literacy among TVET lecturers for the implementation of remote learning in Universities in Northern, Nigeria.

## Discussion of Findings

Regular digital literacy training programs, Training in online pedagogy and instructional design for effective remote learning among others are the strategies for improving digital literacy among TVET lecturers for the implementation of remote learning in Universities in Northern Nigeria and the null hypothesis was also accepted which implied that there is no significant difference on the mean response of Technology Education Lecturers and Vocational Education Lecturers on the strategies for improving digital literacy among TVET lecturers for the implementation of remote learning in Universities in Northern, Nigeria. This

finding agrees with that of Nwachukwu, (2023) that suggests multiple strategies, including continuous professional development, mentorship programs, resource allocation for technology acquisition among others are strategies for improving digital literacy. This finding disagrees with that of Uche, (2021) who states that merely implementing strategies without adequate measurement of their effectiveness often leads to insufficient improvement in digital literacy. The implication of this finding to TVET Lecturers is the regular training will equip lecturers with the necessary skills to effectively utilize digital tools, improving their confidence and competence in remote learning environments, training in online pedagogy will enable lecturers to design and deliver high-quality online content, leading to better student engagement and learning outcomes among others. The implication for Universities in Northern Nigeria is that effective digital literacy training will lead to better student engagement, retention, and learning outcomes in remote learning environments and that Universities that invest in digital literacy training for TVET lecturers will be better positioned to attract students and stakeholders in a rapidly changing educational landscape.

### **Conclusion**

In conclusion, improving digital literacy among TVET lecturers is crucial for the successful implementation of remote learning in Universities in Northern Nigeria. The strategies identified, including regular digital literacy training programs and training in online pedagogy, will equip lecturers with the necessary skills to effectively utilize digital tools and design engaging online content. Digital literacy is no longer a luxury, but a necessity for TVET lecturers, enabling them to adapt to changing educational landscapes and technological advancements. By investing in digital literacy training, universities can enhance teaching practices, improve remote learning outcomes, and increase access to education. Ultimately, digitally literate TVET lecturers will be better positioned to prepare students for the demands of the 21st-century workforce, driving economic growth and development in Northern Nigeria.

### **Recommendations**

Based on the finding of this study, the researcher recommends that:

- i. Institutions should provide regular training programs to enhance TVET lecturers' digital literacy skills, focusing on online pedagogy, instructional design, and digital tool utilization
- ii. Institutions should invest in reliable internet connectivity, updated hardware, and software to support remote learning.
- iii. Institutions should develop and implement a comprehensive digital literacy policy outlining expectations, goals, and support mechanisms for TVET lecturers.
- iv. Institutions should provide opportunities for TVET lecturers to attend conferences, workshops, and training programs, enhancing their digital expertise.

### References

- Bassey, H. E., & Asangausung, O. S., & Udousoro, T. E. (2024). Social forces militating against effective performance of security agencies in Nigeria. *Ibom Journal of Social Issues*, 13(1), 9-14. <https://doi.org/10.60787/ijjsi.v13i1.57>
- Cambridge Life Competencies Framework. (2022). Understanding Digital Literacy.
- Cyiril, M.U., Ibrahim, S., & Bwala, B. Y. (2023). Blended Learning as a Panacea for TVET in Covid-19 Pandemic Era. *Journal of Scientific and Engineering Research*, 2023, 10(5):121-129
- Daniel, J. (2020). Education and the Covid 19 Pandemic, available at: <https://link.springer.com/content/pdf/10.1007/s11125-020-09464-3.pdf> (accessed 26 July 2021).
- Kennedy G. W., Ekong M. O., & Okorie M. N (2022). Digital Technological Tools for Technical Vocational Education and Training Interactive Learning: Availability and Utilization in Nigerian Universities. *Rivers State University Journal of Education (RSUJOE)*, ISSN:2735-9840, **25 (2)**:85-95 [www.rsujoe.com.ng](http://www.rsujoe.com.ng)
- Mlambo, S., & Nleya, P. T. (2020). Integrating E-Learning in a South African University: Successes and Challenges. *Education and Information Technologies*, 25(1), 317-339.
- Nwachukwu, A. (2023). Innovations in Teacher Training: Strategies for Improving Digital Literacy in Nigerian Universities. *Nigerian Journal of Educational Studies*, 10(1), 78-89.
- Okorie, E. J., Mboho, K. S., Asangausung, O. S., & Ekposon, W. (2024). The role of security agencies in curbing violent crimes in Nigeria: a study of Akwa Ibom State, Nigeria. *Zenodo*. <https://doi.org/10.5281/zenodo.11161680>
- Orji, C.T., Ali, C.C & Kanazu, O. (2015). Digital Skills Required by Technical Vocational Education and Training (TVET) Lecturers for Instructional Delivery in Universities. *Journal of home economics research (JHER)* **23(1)**: 128-141.
- Syerina S., Khalid A. and Eman A. (2023). The Impact of COVID-19 on Digital Competence. A Case Study of Preservice Teacher Education Students in the Sultanate of Oman. *(IJACSA) International Journal of Advanced Computer Science and Applications*, **14(1)**: 2023
- Uche, P. (2021). Measuring the Impact of Digital Literacy Initiatives in Higher Education. *Educational Evaluation and Policy Analysis*, 43(3), 545-563.
- UNESCO (2020). Distance learning solutions. <https://en.unesco.org/covid19/educationresponse/solutions>.
- UNESCO. UNESCO-UNEVOC (2011). Vocational pedagogy what it is, why it matters and how to put it into practice. Report of the UNESCO-UNEVOC virtual conference held from 12-2 August 2011.
- Usoro, A. D and Calab, E. E (2014). Digital education and technical student-teacher preparation for sustainable classroom development (A case study of department of vocational education, University of Uyo). *Journal of Nigeria Vocational Association*.19(2), 75-83.